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**Jones Lang LaSalle Ltd**

Beneficiary Client  
**Downing Renewable Developments LLP**

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# **MEERDYKE SOLAR FARM ECOLOGICAL IMPACT ASSESSMENT**

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## LIST OF ABBREVIATIONS

Bat Conservation Trust	BCT
Biodiversity Net Gain	BNG
Chartered Institute of Ecology and Environmental Management	CIEEM
Construction Environmental Management Plan	CEMP
Ecological Clerk of Works	ECoW
Ecological Impact Assessment	EcIA
European Protect Species	EPS
Great Crested Newt	GCN
Local Nature Reserves	LNR
Local Wildlife Sites	LWS
Natural England	NE
Natural Environment and Rural Communities	NERC
Norfolk Biodiversity Information Service	NBIS
Multi Agency Geographic Information for the Countryside	MAGIC
Special Areas of Conservation	SAC
Special Protection Areas	SPA
Sites of Special Scientific Interest	SSSI
Precautionary Works Method Statement	PWMS
Preliminary Ecological Appraisal	PEA
Wildlife and Countryside Act	WCA
Zone of Influence	ZOI

# 1. INTRODUCTION

## 1.1 Background

This Ecological Impact Assessment (EcIA) has been prepared by Ramboll UK Limited (Ramboll) in partnership with JLL, on behalf of the Downing Renewable Developments LLP (the Applicant) in support of an application for consent to construct and operate a solar photo voltaic (PV) farm with associated infrastructure, including potential battery storage (the Proposed Development). The Proposed Development would have a generation capacity of up to 49.9 megawatts (MW) and would comprise solar panels and associated infrastructure on a Site located 1.3 km east of Wisbech and 500m to the east of the A47 trunk road, on land at Blunts Drove, Walton Highway, Norfolk (the Site).

The Site is located at national grid reference TF 50368 10343 and is shown on Figure 1 below:

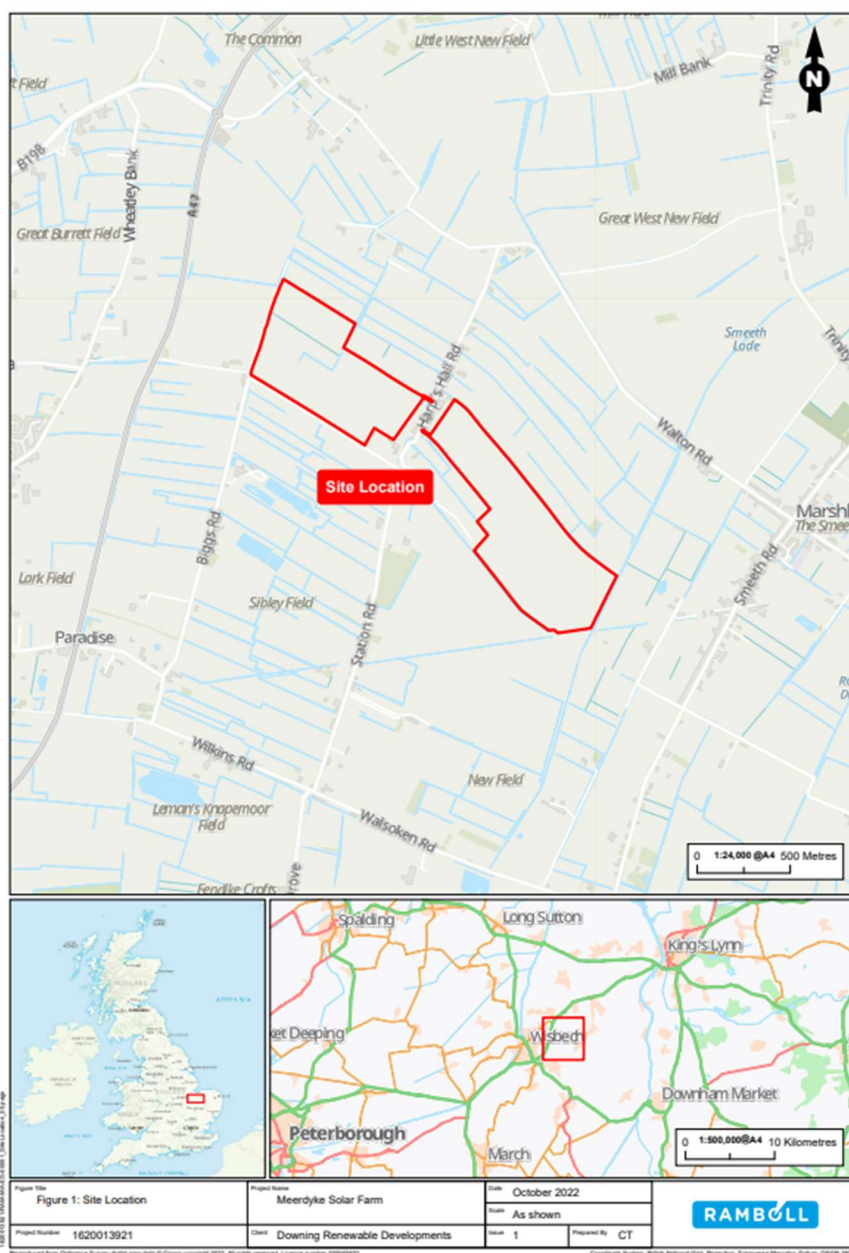


Figure 1: Site location (Reproduced in full in Appendix 1)

## 1.2 Objectives

The aim of this report is to provide an EcIA in relation to the Site and the zone of influence (ZOI) of the Proposed Development (CIEEM, 2019<sup>1</sup>). The EcIA comprises a description of the existing on-Site ecological conditions, as well as the ecological context of the Site and its ZOI; an appraisal of the Site's ecological importance; and an assessment of likely impacts in relation to the Proposed Development and its associated activities, taking into account the mitigation and enhancement measures incorporated into the Proposed Development. The structure and content of the report is based on current ecological report writing guidance (CIEEM, 2017<sup>2</sup> and BSI Standards Institution, 2013<sup>3</sup>).

The content of this report is based on the findings of:

- a desk study;
- an extended Phase 1 habitat survey; and,
- Breeding bird surveys.

The objectives of this report are to:

- identify designated nature conservation Sites located either within the Site or the ZOI of the Proposed Development;
- assess the potential for the Site and the ZOI of the Proposed Development to support populations of protected species or species of nature conservation importance<sup>4</sup>;
- record the main habitats and features of ecological interest on the Site;
- assess the ecological importance of the Site;
- describe the proposed mitigation measures; and
- assess the potential impacts and likely residual effects of the Proposed Development.

The report is supported by the following appendices:

- Appendix 1: Figures;
- Appendix 2: Relevant Legislation and Policy;
- Appendix 3: Breeding Birds Survey; and
- Appendix 4: Confidential Ecological Report.

## 1.3 Proposed Development

The Application Site covers an area of 87.53 hectares (ha) and is located 1.3km east of Wisbech and 500m to the east of the A47 trunk road, as illustrated in Figure 1.

The Application Site forms two parcels of land (East and West Arrays) and is currently used for agricultural purposes. The land falls within Agricultural Land Classification Grade 3a and 3b with

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<sup>1</sup>Chartered Institute of Ecology and Environmental Management (CIEEM), 2019. Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal and Marine. Chartered Institute of Ecology and Environmental Management, London.

<sup>2</sup> CIEEM (2017) Guidelines for Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester

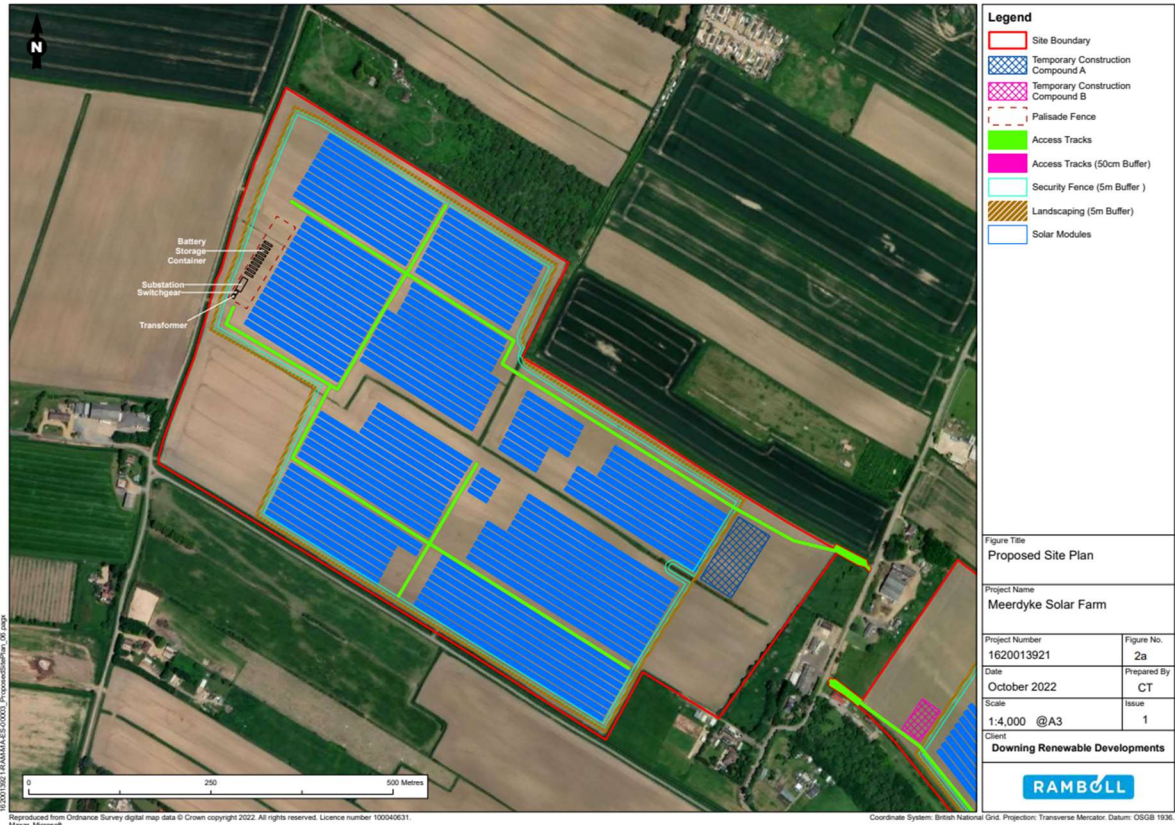
<sup>3</sup> BSI Standards Institution, 2013. BS 42020:2013. Biodiversity – Code of Practice for Planning and Development. BSI Standards Limited, London.

<sup>4</sup> The following species are considered to be of nature conservation importance i) listed as a national priority for conservation (such as those listed as habitats and species of principal importance for the conservation of biodiversity under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006; ii) listed as a local priority for conservation, for example in the relevant local Biodiversity Action Plan (BAP); iii) assessed as a threatened or near-threatened species according to International Union for the Conservation of Nature (IUCN) red list criteria; iv) Red or Amber Listed species in national Species of Conservation Concern assessments; v) listed as a Nationally Rare or Nationally Scarce species (e.g. in one of the Species Status Project reviews) or a Nationally Notable species where a more recent assessment of the taxonomic group has not yet been undertaken; and/or vi) endemic to a country or geographic location (including endemic sub-species, phenotypes, or cultural behaviours of a population that are unique to a particular place).

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pockets of Grade 2 and has a very flat topography, consistently lying below 10 m above ordinance datum (AOD). An overhead powerline intersects the eastern corner of the East Array Site. The surrounding area is predominantly rural in character, mainly comprising arable fields interspersed with drainage dykes, residential and farm related properties, clusters of trees and woodland, and roads and tracks.

The Proposed Development would comprise approximately 125,000 solar panels with a maximum height of 3.1 m, along with associated infrastructure, including battery storage, as illustrated below on Figures 2a: Proposed Site Layout (West Array) and 2b: Proposed Site Layout (East Array).



**Figure 2a: Proposed Site Layout (West Array) (Reproduced in full in Appendix 1)**





**Figure 2b: Proposed Site Layout (East Array) (Reproduced in full in Appendix 1)**

**1.4 Legislation and Policy Framework**

Various legislation and planning policies refer to the protection of wildlife. These are summarised in Appendix 2 but should not be regarded as a definitive legal opinion. When dealing with individual cases, the full texts of the relevant documents should be consulted, and legal advice obtained if necessary.

**1.5 Legal**

This report has been prepared by Ramboll exclusively for the intended use by the client in accordance with the agreement between Ramboll and the client defining, among others, the purpose, the scope and the terms and conditions for the services. No other warranty, expressed or implied, is made as to the professional advice included in this report or in respect of any matters outside the agreed scope of the services or the purpose for which the report and the associated agreed scope were intended or any other services provided by Ramboll.

Unless otherwise stated in this report, the scope of services, assessment and conclusions made assume that the Site will continue to be used for its current purpose and end-use without significant changes either on-Site or off-Site.



## 2. METHODOLOGY

### 2.1 Desk Study

The purpose of the desk study was to collect existing baseline data about the Site and the ZOI, such as the location of designated Sites or other natural features of potential ecological importance such as woodland and ponds. The following ZOI has been considered:

- all statutory designated Sites up to 2 km from the Site, including Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar Sites, National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR);
- non-statutory designated Sites: Sites of Importance for Nature Conservation (SINCs) up to 2 km from the Site;
- records of protected species up to 2 km from the Site; and
- international and national statutory designated Sites with bats as a qualifying feature for designation, up to 10km from the Site.

Norfolk Biodiversity Information Service (NBIS) was contacted to provide the details of the non-designated Sites and protected species within 2 km of the Site. Due to data ownership restrictions in the reproduction of the NBIS reports, they are not appended to this EcIA, but the information provided is summarised in the relevant sections. In addition, the Multi Agency Geographic Information for the Countryside (MAGIC) webSite<sup>5</sup> was searched for information on statutory Sites. This included a search for European Protected Species licences issued within 2 km of the Site. Supplementary information on the application Site and its surroundings were obtained from aerial images available from Google™ Earth.

### 2.2 Extended Phase 1 Habitat Survey

An extended UK Habitat survey was undertaken by Mark Tarrant (MEECW) of Ramboll on May 6th 2022. Mark has a BSc in Biology and has worked professionally as a consultant ecologist since 2008. The weather during the survey period was warm and sunny with a light wind.

The survey involved a site walkover and preliminary assessment of key habitats, land use and ecological features. The main habitats present were recorded using standard methodology described in the UK Habitat Classification User Manual Version 1.1<sup>6</sup> and identified the habitats present via the prescribed UK Habitat Field Key Version 2.1<sup>7</sup>.

In addition to general habitat classification, a list was compiled of observed plant species (using the nomenclature of Stace, 2010<sup>8</sup>, with common and Latin names referred to in the first instance after which only the common names are used). The abundance of each species was estimated for each habitat respectively using standard 'DAFOR' codes:

- D = Dominant.
- A = Abundant.
- F = Frequent.
- O = Occasional.
- R = Rare.

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<sup>5</sup> [www.magic.gov.uk](http://www.magic.gov.uk), accessed 11<sup>th</sup> July 2022

<sup>6</sup> Butcher, B., Carey, P., Edmonds, R., Norton, L. and Treweek, J. (2020). The UK Habitat Classification User Manual Version 1.1 at <http://www.ukhab.org/>

<sup>7</sup> UK Hab (2020). UK Hab Field Key Version 2.1 at <http://www.ukhab.org/>

<sup>8</sup> Stace, C. (2010) *New Flora of the British Isles* 3rd Edition. Cambridge University Press

The Site was assessed for its potential to support protected and notable species such as reptiles, amphibians, bats, badgers *Meles meles* and water vole *Arvicola amphibius*, and was inspected for signs of any invasive plant species subject to legal controls. This was in order to identify potential ecological constraints and to guide recommendations for further survey requirements for these species.

### 2.3 Daytime Tree Inspection for Bats

A daytime inspection of trees on Site was completed by Mark Tarrant, during the habitat survey in May 2022, for their potential to support bats. Mark has been conducting daytime evaluation of trees for bats as a consultant ecologist since 2008. Trees were visually inspected for suitability for use by bats and field evidence of roosting bats including droppings, urine staining, feeding remains and potential roosting points. In accordance with the guidance outlined in Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition (Collins, 2016<sup>9</sup>) each feature was assessed for its potential to support bats.

The following tree features are considered of particular suitability to support roosting bats:

- Natural holes;
- Woodpecker holes;
- Cracks / splits in major limbs;
- Loose bark;
- Bat, bird or mammal boxes;
- Partially detached large-stemmed ivy; and
- Other hollows / cavities.

Each building, structure and tree has been classified into a category dependent on the presence of features suitable to support bat roosts. The categories assigned were: Confirmed Roost, High, Moderate, Low and Negligible Potential for use by bats. Table 2.1 below provides criteria for each of these categories. In addition, the suitability of the Site for foraging and commuting bats was assessed.

<b>Table 2.1: Building, Structure and Tree Bat Roost Potential Categories</b>	
<b>Roost Potential</b>	<b>Description</b>
Confirmed	A building, structure or tree that is confirmed to support a bat roost.
High	A building, structure or tree with one or more potential roost Site that is obviously suitable for use by larger numbers of bats on a regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Moderate	A building, structure or tree with one or more potential roost Site 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.
Low	A building or structure with one or more potential roost Site that could be used by individual bats opportunistically. However, these potential roost Sites do not provide enough space, shelter, protection and / or suitable surrounding habitat to be used on a regular basis or by a large number of bats (i.e. unlikely to be suitable for hibernation or maternity).  Trees of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with very limited roosting potential.

<sup>9</sup> Collins, J., 2016. Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition). Bat Conservation Trust (BCT)

<b>Table 2.1: Building, Structure and Tree Bat Roost Potential Categories</b>	
Negligible	Negligible habitat features likely to be used by roosting bats and bats very unlikely to be present.
Notes: Category descriptions drawn from Collins (2016)	

## 2.4 Breeding Bird Surveys

The Site was surveyed for breeding birds between March and July 2022 by RSK Biocensus in accordance with the Bird Survey Guidelines for Assessing Ecological Impacts (BSG) (Bird Survey and Assessment Steering Group, 2022). These comprised a series of six survey visits, during which a suitably experienced RSK Biocensus ornithologist walked a pre-determined transect route throughout the Site, recording all bird species encountered (either visually or through their vocalisations) onto GIS Field Maps software using standard BTO species codes and behaviour notation.

The transect route included all ditches and field margins within the Site, with all habitats within the Site approached to within 100m. Birds observed within 50 m of the Site were also recorded, including birds using the nearby Smeeth Lode watercourse. The transect route was interspersed with stops, during which the ornithologist scanned for birds using optical equipment. The direction in which the transect route was walked by the ornithologist was alternated between survey visits so that different areas of the Site were surveyed at different times of day.

In accordance with the BSG, five survey visits were undertaken at dawn, whilst one visit was undertaken at dusk to increase the likelihood of recording species that are more active at dusk (e.g. owls). Surveys were undertaken in suitable weather conditions, avoiding extreme temperatures, heavy rain, snow or fog during which bird activity may be atypical and/or surveying may be impractical. The dates, timings and weather conditions for the six survey visits are indicated in Table 2.2 below.

<b>Table 2.2: Summary of Bird Surveys</b>				
<b>Survey Visit</b>	<b>Date</b>	<b>Timing</b>	<b>Temperature (oC)</b>	<b>Weather conditions</b>
1	29/03/2022	16:10 – 19:45	13-15	Largely overcast (50-100% cloud cover), very light breeze (BF1), dry
2	20/04/2022	05:20 – 09:40	7-12	Partial cloud (20-40% cloud cover), light breeze (BF2), light rain from 07:00
3	10/05/2022	04:50 – 08:30	15-16	Largely overcast (70-80% cloud cover), light to moderate breeze (BF1-3), dry
4	26/05/2022	04:25 – 07:40	10-15	Initially clear before becoming more overcast (10-60% cloud cover), light breeze (BF2), dry
5	15/06/2022	04:05 – 07:40	12-17	Largely clear (30-40% cloud cover), light breeze (BF2), dry
6	05/07/2022	04:45 – 08:15	10-15	Initially clear before becoming more overcast (20-70% cloud cover), light breeze (BF2), dry

## 2.5 Importance Criteria

The importance of ecological features (i.e. designated sites, habitats and species), identified within the ZOI has been assessed using a scale that classifies ecological features within a defined geographic context in accordance with CIEEM guidelines (2019). The following frame of reference has been used for the Site:

- International and European Importance;
- National Importance (England);
- Regional Importance;
- County (Norfolk);
- Local Importance;
- Site-level<sup>10</sup> Importance (limited to the Site boundary or ZOI); and
- Negligible Importance.

Various characteristics contribute to the importance of ecological features. These include recognised and published criteria (e.g. Wray *et al.* 2010<sup>11</sup>) where the ecological features are assessed in relation to their size, diversity, naturalness, rarity, fragility, typicalness, connectivity with surroundings, intrinsic value, recorded history and potential importance.

A wide range of sources can be used to assign importance to ecological features, including legislation and policy. In the case of designated sites, their importance reflects the geographic context of the designation. For example, sites designated as SACs are recognised as being of importance at an International level. Ecological features not included in legislation and policy may also be assigned importance, due to, for example, local rarity or decline, or provision of a functional role for other ecological features. Professional judgement is used to assign such importance.

## 2.6 Method of Assessment

The ecological impact assessment has been undertaken by means of existing best practice tools and techniques as recommended by CIEEM. As such, potential impacts and effects on ecological features (as defined by baseline conditions) have been assessed taking into consideration mitigation measures integral to the Proposed Development; consideration has been given to the need for additional mitigation to reduce or off-set potential significant effects, and finally all residual effects have been assessed as either significant or not significant at the relevant geographic level. As part of this, consideration was given to the avoidance, mitigation, restoration, compensation and enhancement measures (the 'mitigation hierarchy') integral to the Proposed Development.

## 2.7 Significance

The potential impacts and likely effects on ecological features were considered in relation to the Proposed Development at the Site. The assessment was made by reference to the pre-development baseline conditions at the Site. The impacts and effects have been characterised according to the following variables:

- Magnitude and extent - quantitative size of an impact (e.g. area of habitat/number of individuals);
- Timing – when the impact may occur;

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<sup>10</sup> Note that Site-level is not defined in CIEEM, 2019. It is used here to define ecological features which contribute to the biodiversity importance of the Site, but not at a level which can be considered locally important or higher. It is important in the context of biodiversity net gain.

<sup>11</sup> Wray S, Wells D, Long E, Mitchell-Jones T., 2010. Valuing Bats in Ecological Impact Assessment, CIEEM In-Practice. 23-25

- Duration and reversibility - timescale of effect (days/weeks/months/years) until recovery. Permanent impacts are described as such, and likelihood of recovery is detailed where appropriate;
- Frequency - frequency of effect (if appropriate; described as low to high and quantified where possible);
- Complexity - whether the effect would directly or indirectly affect the feature; and
- Negative/ positive - if the effect would be beneficial or detrimental to the feature.

The assessment only describes those characteristics relevant to the ecological effect and determining the significance. For example, timing of when a habitat is destroyed may not be relevant in relation to the assessment of the effect on the habitat. However, it may be relevant to assessing the impact to the species that occur within the habitat (e.g. roosting bats).

In accordance with CIEEM guidance, each impact has been assessed as having a significant effect or not having a significant effect upon each ecological feature qualified with reference to the appropriate geographic scale. The importance level of the ecological feature concerned may be a determinant of the geographical level at which the effect is significant. For example, a significant effect to a SSSI, is likely to be significant at a national level. However, it may be the case that the effect could be considered significant at a lower or higher geographical level than that at which the feature is important, depending on the magnitude of the effect. A significant effect is an effect that either enhances or undermines the conservation objectives of an ecological feature. Conservation objectives may be specific (e.g. for a designated Site), or broad (e.g. national conservation policy).

## 2.8 Limitations

It should be noted that availability and quality of the data obtained during desk studies is reliant on third party information. This varies from region to region and for different species groups. Furthermore the comprehensiveness of data often depends on the level of coverage, the expertise and experience of the recorder and the submission of records to the local recorder. Accordingly, the conclusions in this report are valid only to the extent that the information provided to Ramboll was accurate, complete and available to Ramboll within the reporting schedule.

The extended UKHab habitat survey provides a snapshot of ecological conditions and does not record plants or animals that may be present on-Site at different times of the year. The survey was undertaken during the optimum April to September Phase 1 habitat survey period when plants are generally visible.

Ramboll is satisfied that this report represents a robust appraisal of the Site. If any action or development has not taken place on this land within 12 months of the date of this report, the findings of this survey should be reviewed by a suitably qualified ecologist and may need to be updated in line with CIEEM's 'Advice Note on the Lifespan of Ecological Reports and Surveys' (2019)<sup>12</sup>.

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<sup>12</sup> Chartered Institute of Ecology and Environmental Management (CIEEM), 2019. Advice Note on the Lifespan of Ecological Reports and Surveys. CIEEM, Winchester. Available online: <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf> [Accessed 04/09/2019]

## 3. BASELINE CONDITIONS

### 3.1 Desk Study

#### 3.1.1 Landscape Context

The Site is located at central grid reference TF 50375 10396 to the east of Wisbech, in a mostly agricultural/horticultural area.

Arable fields surround much of the Site, however there are also two small unmanaged traditional orchards adjacent to the Site, one to the northwest and one to the south. Traditional orchards are listed on the Priority Habitat Inventory (England)<sup>13</sup>. There are also some small areas of grazed pasture. The Site is surrounded by a series of drainage ditches that connect to the wider drain network, these offer valuable riparian corridors. The watercourse 'Smeeth Lode' lies to the east of the Site, separated by an access track. Smeeth Lode is a large drain that drains the low lying fenland area from Emneth to Terrington St Clements. The existing habitat plan is provided in Figure 3.

#### 3.1.2 Designated Sites

##### *Statutory Sites*

There are no statutory designated Sites within the Site boundary or within 2 km of the Site. The closest SSSI is Islington Heronry SSSI, 8.1 km from the Site boundary. Islington Heronry SSSI comprises a small, isolated oak woodland designated for its significant breeding grey heron *Ardea cinerea* population<sup>14</sup>.

The Site falls within the Impact Risk Zone for Islington Heronry SSSI. SSSI Impact Risk Zones are defined zones around each SSSI which reflect the sensitivities of the features for which it is notified and indicate the types of development that could potentially have adverse impacts. In the case of Islington Heronry SSSI, this is limited to "Infrastructure - Airports, helipads and other aviation proposals".

There are no SACs designated for bats within 10 km of the Site. The closest SAC to the Site is Ouse Washes SAC, located 10.7 km from the Site boundary and not designated for bats<sup>15</sup>.

##### *Non-Statutory Sites*

There are no non-statutory Sites located within the Site boundary or within a 2 km radius of the Site.

There are no parcels of ancient and semi-natural woodland located within 2 km of the Site. There is one ancient, veteran or notable tree within 2 km of the Site boundary. The nearest such tree is a notable beech *Fagus sylvatica* located 1.7 km to the west of the Site.

### 3.2 Habitats

Habitats and Protected Species on Site are illustrated in Figure 3 below and summarised in the subsequent sections.

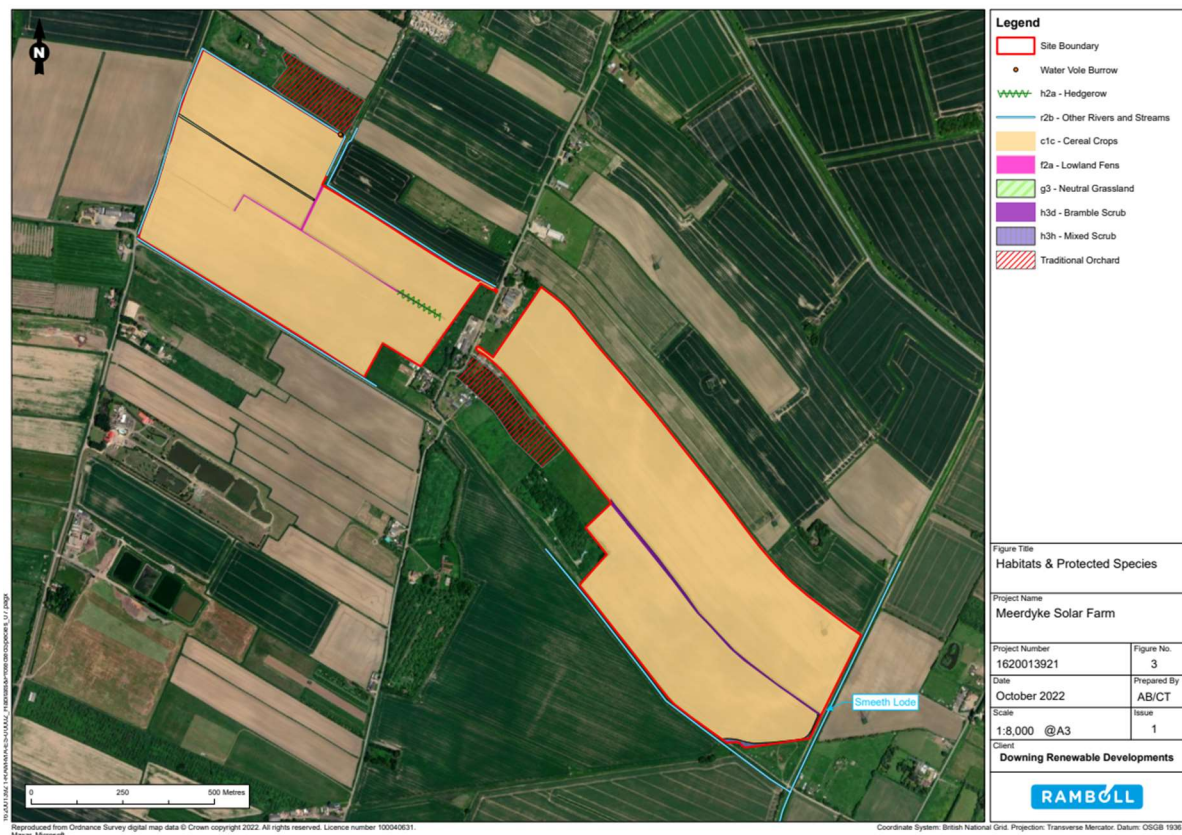
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<sup>13</sup> Natural England (2022) Priority Habitat England (Central). Available at: <https://naturalengland-defra.opendata.arcgis.com/datasets/priority-habitat-inventory-central-england/explore?location=51.924053%2C-0.734661%2C8.09> (Accessed: 28/04/2022)

<sup>14</sup> Natural England (1984) Islington Heronry SSSI. Available at: <https://designatedsites.naturalengland.org.uk/PDFsForWeb/Citation/1000618.pdf> (Accessed: 28/04/22).

<sup>15</sup> JNCC (2015) Natura 2000 Standard Data Form – Ouse Washes. Available at: <https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0013011.pdf> (Accessed: 28/04/22).





**Figure 3: UK Habitat Survey Map (reproduced at full size in Appendix 1)**

### 3.2.1 General Site Description

The Site is split into two separate areas totalling 87.53 ha. These two areas are separated by Harps Hall Road and a small number of residential properties. The Site consists almost entirely of agricultural land, that has recently been prepared and seeded, with associated drainage ditches and one small section of hedgerow.

### 3.2.2 Arable and Horticulture – Cereal Crops

The majority of the Site has been subject to ground preparation and planting in the recent past, with no crops/vegetation currently showing. The condition of this habitat is considered to be poor.

### 3.2.3 Scrub - Bramble Scrub

There is a small area of dense bramble *Rubus fruticosus* scrub in the east of the Site in poor condition. The bramble runs the length of a dry ditch and is interspersed with occasional hawthorn *Crataegus monogyna*. The understorey vegetation consists of nettle *Urtica dioica*, spear thistle *Cirsium vulgare*, broad-leaved dock *Rumex obtusifolius*, and Common hogweed *Heracleum sphondylium*.

### 3.2.4 Other neutral grassland G3c

There is a narrow strip of poor condition neutral grassland in the west of the site that represents a boundary between fields, it is approximately 1 m at its widest. The area is dominated by a mix of sweet vernal grass *Anthoxanthum odoratum*, red fescue *Festuca rubra*, perennial rye grass *Lolium perenne*. With occasional nettle *Urtica dioica* and white dead nettle *Lamium album*.

### 3.2.5 Lowland Fens

A small area of moderate condition lowland fen is present in the western extent of the Site. This habitat follows drains that were dry at time of survey. The area was dominated with common reed *Phragmites australis* with frequent common hogweed *Heracleum sphondylium*, nettle *Urtica dioica* and white dead nettle *Lamium album* along the edge of the arable crops.

### 3.2.6 Hedgerow (Priority habitat) – Native hedgerow associated with bank or ditch

A short section of hedgerow runs along a mostly dry ditch in the East Section of the Western Array. The hedgerow is of good condition, is unmanaged and is approximately 6m in height by 3m in width. The hedgerow consists solely of hawthorn.

### 3.2.7 Other rivers and streams

The Site is bordered on most sides by drainage channels (ditches). These all flow out to connect to Smeeth Lode on the southeast boundary of the Site. Common reed dominates the emergent vegetation.

### 3.2.8 Invasive Species

No schedule 9 invasive species were noted on Site during the extended phase 1 habitat survey. Buddlejia, however is a non-native invasive species.

## 3.3 Species

### 3.3.1 Invertebrates

NBIS returned no records of invertebrates within 2 km of the Site boundary.

The Site provides a very limited amount and range of suitable habitats which may be utilised by invertebrates, such as the scrub, hedgerow and lowland fen. These habitats are widespread in the surrounding area with habitats of higher value also located nearby. It is considered unlikely that the Site would support notable invertebrate assemblages.

### 3.3.2 Amphibians

NBIS returned 12 records of great crested newt (GCN) *Triturus cristatus* within 2km of the Site boundary, all of which were dated 2006 and found at the same Site approximately 1.5 km north of the Site at the closest point. NBIS returned no records of other amphibian species within 2 km of the Site.

According to MAGIC, no European Protected Species (EPS) licenses have been obtained for GCN in a 2 km radius of the Site.

GCNs make use of breeding ponds during the breeding season (March to June), and at other times of year may be present in suitable terrestrial habitats up to 500 m from breeding ponds. A visual search using aerial imagery found no ponds on the Site, however seven ponds were identified within 500m of the Site boundary, the closest of which is 233 m east of the Site, however this is separated from the Site by Smeeth Lode, which represents a barrier to movement. The six remaining ponds within 500m of the Site boundary form a course fishing complex that is also separated from the Site boundary by a flowing drain.

There is limited terrestrial habitat available on Site, restricted to the lowland fen and bramble scrub habitats, which are isolated in an agricultural environment, and which are not associated with potential refugia/hibernacula.

Given the lack of suitable terrestrial habitat on Site, the nature of the water bodies within 500 m of Site and the barriers to dispersal, it is therefore considered unlikely that GCN or other amphibian species will be present on Site.

### 3.3.3 Reptiles

NBIS returned no records of reptiles within 2 km of the Site boundary.

There is a limited amount of habitat present on Site that offers potential for use by reptiles, this is restricted to the scrub and the marginal/inundation vegetation, which is highly isolated in an agricultural environment. This habitat is not associated with any potential refugia/hibernacula features and it is therefore considered unlikely that reptiles will be present on Site.

### 3.3.4 Birds

NBIS returned several records of birds within 2 km of the Site boundary including green sandpiper *Tringa ochropus*, turtle dove *Streptopelia turtur*, fieldfare *Turdus pilaris*, song thrush *Turdus philomelos*, spotted flycatcher *Muscicapa striata* and house sparrow *Passer domesticus*.

The scrub, hedgerows and ditches could provide both foraging and nesting habitat for a range of common farmland, wetland and garden birds, albeit in low numbers. All wild birds are protected from being killed, injured or captured, while their nests and eggs are protected from being damaged, destroyed or taken under the Wildlife and Countryside Act (WCA) 1981 (as amended).

The Site is in the impact risk zone for Islington Heronry, a 1.3 ha Site consisting of a stand of mature oaks *Quercus sp.* surrounded by fenland, that holds the largest colony of breeding grey heron *Ardea cinerea*, with about 80 nests occupied each year, with the surrounding dykes providing ideal feeding conditions for the birds. The ditches present on the Site, and the adjacent Smeeths Lode, present suitable foraging habitat for grey heron, however these are unlikely to be impacted by the Proposed Development and are a common feature through the wider landscape. There is no suitable grey heron nesting habitat on Site.

A total of 61 bird species were recorded during the field surveys of the Site between March and July 2022 inclusive, with 21 bird species breeding status being confirmed, 10 identified as probable and a further 7 as possible. The peak counts and breeding statuses of these species are summarised in A Breeding Birds Survey Report, included in Appendix 3.

In summary, the survey found that of the 38 species recorded breeding or potentially breeding on Site included the following:

- no WCA Schedule 1 species;
- no EC Birds Directive Annex 1 species;
- nine Natural Environment and Rural Communities (NERC) S41 Species of Principal Importance;
- seven Birds of Conservation Concern (BoCC) Red list species;
- nine BoCC Amber list species; and
- four SAP bird species for Norfolk.

### 3.3.5 Badger

Badgers are present within the study area. Full details of badger field signs are provided in Appendix 4: Confidential Ecological Report. Badgers are protected under the Badger Protection Act 1992 due to species persecution by humans. As such, as these results detail the location of setts, results are to remain confidential and not to be made available to the public. Four setts have been identified on Site, therefore, mitigation to prevent disturbance would be required.

### 3.3.6 Bats

According to MAGIC, no EPS licenses have been obtained for bats in a 2 km radius of the Site.

There are no SACs where bats are mentioned in the citation within a 10 km radius of the Site, as detailed in section 3.1.2. NBIS returned numerous records for bats within a 5 km radius of the Site. Additionally, NBIS returned several cross-boundary bat records from Cambridgeshire, as the Site lies within 5km of the Norwich – Cambridgeshire border. In total, NBIS returned 51 records for common pipistrelle *Pipistrellus pipistrellus*, 35 for soprano pipistrelle *Pipistrellus pygmaeus*, 29 for brown long-eared bats *Plecotus auritus*, six for Daubenton's bat *Myotis daubentonii*, 2 for Natterer's bat *Myotis nattereri*, two for serotine *Eptesicus serotinus*, seven for noctule *Nyctalus noctula* and 21 for unidentified bat species. The closest record was a brown long-eared bat recorded 230 m east of the Site boundary. Additionally, NBIS returned seven records of Natural England bat roosts within 5 km of the Site.

There are no structures present on Site. Those trees that are present on Site consist of the hawthorn hedgerow and do not provide any roost habitat suitable for bats. There is very little in the way of foraging or commuting habitat present on Site. However, the Site is bordered in places by traditional orchards and other habitats that offer valuable foraging potential.

All species of bat are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of The Conservation of Habitats and Species Regulations 2017 (as amended), making all species of bat EPS. The legislation also protects the resting places of bats including roost Sites and it is an offence to intentionally disturb bats occupying places used for shelter or protection.

### 3.3.7 Hedgehog

NBIS returned no records for hedgehog *Erinaceus europaeus* from within a 2 km radius of the Site.

There is limited foraging habitats available for hedgehog on Site, and only one small area of potential hibernating habitat.

Hedgehogs are protected by British law under Schedule 6 of the Wildlife and Countryside Act 1981, making it illegal to kill or capture them using certain methods. They are also protected in Britain under the Wild Mammals Protection Act (1996), prohibiting cruelty and mistreatment.

They're listed as a Species of Principle Importance in England under the Natural Environment and Rural Communities (NERC) Act 2006 Section 41.

### 3.3.8 Water Vole

NBIS returned no records of water vole *Arvicola amphibius* from within a 2 km radius of the Site.

The ditches surrounding the Site are well vegetated and of a good profile and substrate for water vole and are judged to hold water year-round. Those ditches within the Site boundary were dry at the time of survey, as was the ditch on the northern boundary in the east of the Site. The ditches within the Site boundary are therefore considered to be unsuitable to support water vole.

Those ditches on the boundary of the Site however are deemed to be suitable for water vole. In addition, two potential water vole burrows were observed on the north western extent of the Site, indicating the species is present on Site.

Water vole are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 and is listed as principal importance under Section 41 of the NERC Act 2006. Water vole are protected from capture, killing, disturbance or injury (purposefully or through negligence), damage and destruction to breeding or resting places, obstructing access to resting or sheltering places, and possession, selling, control or transport of live or dead water vole, or parts of them.

### 3.3.9 Otter

NBIS returned no records of otter *Lutra lutra* from within a 2 km radius of the Site.

There is no potential terrestrial or riparian habitat for otter within the Site. Smeeth Lode, approximately 10 m from the eastern edge of the Site, offers some potential for use by otters, however this would most likely be used as a commuting corridor as there are no potential holt/couch features present.

Otters are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of The Conservation of Habitats and Species Regulations 2017 (as amended), making them EPS. Otters are protected from capture, killing, disturbance or injury (purposefully or through negligence), damage and destruction to breeding or resting places, obstructing access to resting or sheltering places, and possession, selling, control or transport of live or dead otters, or parts of otters.

### 3.4 Ecological Importance

Table 3.1 presents the ecological importance of habitats and species present on the Site, in accordance with CIEEM guidance. Species assessed as being unlikely to be present on the Site are not considered further in this assessment.

<b>Table 3.1: Ecological Importance of Features Present on the Site and in the vicinity</b>		
<b>Feature</b>	<b>Ecological Importance</b>	<b>Rationale</b>
Arable and Horticultural – Cereal Crops	Site Level	The cereal crops have a limited contributions the biodiversity value of the Site.
Other neutral grassland	Site Level	The small strip of grassland has a limited contribution to the biodiversity value of the Site.
Scrub – Bramble scrub	Site Level	The habitat provides foraging habitat for a range of species. The bramble has potential to be used by nesting birds.
Hedgerow (Priority habitat)	Local Level	The hawthorn hedgerow present is a small and isolated section surrounded by arable crops. As such it offers limited use for protected species on Site, with the exception of potential nesting habitat.
Invertebrates	Negligible	The habitats on-Site are common in the surrounding areas, of limited use to invertebrates and, as such, are unlikely to support notable invertebrates. Invertebrates are not considered further.
GCN	Negligible	There are no water bodies present on Site and only very small areas of terrestrial habitat present. The Site is also bounded on most sides by flowing ditches, presenting partial barriers to movement. As such GCN are deemed as unlikely to present on Site and are not considered further.
Reptiles	Negligible	There is only a small area of habitat present on Site that would be of potential use to foraging reptiles comprising scrub and the marginal/inundation vegetation Further details are outlined under section 4.

<b>Table 3.1: Ecological Importance of Features Present on the Site and in the vicinity</b>		
Birds	Site level	Small areas of habitat capable of supporting a small population of birds for both foraging and nesting are present.
Bats	Negligible	There is limited potential for bats to be present on Site, there is however good habitat present adjacent to the Site. As such precautionary measures will be required and are outlined in section 4.
Badger	Local Level	Information on badgers can be found in Appendix 4: Confidential Ecological Report.
Water Vole	Site Level	The ditches bounding the Site offer potential for use by water vole. In addition two potential water vole burrows were found in the north west of the Site.
Otters	Negligible	The Site is not suitable to support otter, however there is potential for them to be using Smeeth Lode adjacent to the eastern end of the Site, as such precautionary measures, outlined in section 4 are required.
Hedgehog	Site Level	Limited suitable habitat is available on Site for foraging hedgehogs, although suitable features and habitat for hibernating are very limited on Site.



## 4. ASSESSMENT OF POTENTIAL IMPACTS, MITIGATION MEASURES AND RESIDUAL EFFECTS

This section describes potential impacts that could arise from the Proposed Development on the Site and outlines mitigation measures for inclusion into redevelopment proposals to avoid significant impacts on ecological features and maximise biodiversity enhancement.

The final design has not yet been agreed upon, however the latest iteration of the landscape plan for The Proposed Development has been used to inform this section, as illustrated on Figures 2a: Proposed Site Layout (East Array) and 2b: Proposed Site Layout (West Array). The Proposed Development will achieve a 10% Biodiversity Net Gain (BNG).

### 4.1 Potential Impacts and Likely Effects

#### 4.1.1 Designated Sites

There are no designated Sites within 2 km of the Site, the closest SSSI is Islington Heronry, 8.1 km from the Site boundary. Due to the lack of ecological connectivity to the designated Site; impacts arising from development of the Site are considered unlikely. Mitigation for the designated Site is therefore considered unnecessary, and as such these are not considered further.

#### 4.1.2 Non-Statutory Sites

There are no non-statutory Sites located within the Site boundary or within a 2 km radius of the Site.

Due to the lack of ecological connectivity between the Site and any non-statutory Sites in the wider area; impacts arising from development of the Site are considered unlikely. Mitigation for non-statutory Sites is therefore considered unnecessary, and as such these are not considered further.

#### 4.1.3 Habitats

Redevelopment of the Site will lead to the loss of the majority of Cereal Crops habitat within the red line boundary, there will also be the loss of the small area of neutral grassland. All other habitats, including; lowland fens, bramble scrub, hedgerows and watercourses will be retained. Cereal Crops are assessed as being of Negligible importance to wildlife, and the small area of poor condition grassland is also considered to be of negligible importance and it is therefore considered that, in the absence of mitigation, the removal of the above habitats would likely result in the following effects at the demolition and construction stage and completed development stage:

- Construction Stage: No Significant effect at the Site Level; and
- Completed Development: No Significant effect at the Site Level.

#### 4.1.4 Species

##### *Breeding Birds*

Loss of habitat on the Site would potentially affect foraging and ground nesting birds, for which the Site is of Site level importance. In the absence of mitigation, Site clearance during the construction stage could destroy active nests and lead to the killing or injury of birds. With no replacement habitat, local birds would have to forage and nest elsewhere although this would not be expected to affect the conservation status of any species. Therefore, the loss of these habitats would likely result in the following effects at the construction stage and completed development stage:

- Construction Stage: Negative effect at the Site Level; and
- Completed Development: No significant effect at the Site Level.

#### *Bats*

The loss of habitat would have limited impacts on foraging bats. No buildings are present in the development area and no trees were identified as having a low or greater potential for roosting bats. The Site is therefore assessed as being of Negligible importance for bats, and in the absence of mitigation, the development of the Site would likely result in the following effects at the construction stage and completed development stage:

- Construction Stage: No Significant effect at the Site Level; and
- Completed Development: No Significant effect at the Site Level.

#### *Badger*

Badgers are present within the study area. Full details of badger field signs are provided in Appendix 4: Confidential Ecological Report. Four setts have been identified on Site, therefore, mitigation to prevent disturbance would be required.

#### *Otter*

No habitat with potential to be used by otters is to be lost to the development. The Site is assessed as being of Negligible importance for otters, however there is potential for them to be present on adjacent habitat on the banks of Smeeth Lode. Therefore, in the absence of mitigation, the development of the Site has the potential to result in the following effects at the construction stage and completed development stage:

- Construction Stage: Potential negative effects at Site level due to disturbance; and
- Completed Development: No significant effects at the Site level.

#### *Reptiles*

There are only limited areas of vegetation on Site suitable for use by foraging reptiles, and none of this will be lost to the development. The Site is therefore assessed as being of Negligible importance for reptiles, and in the absence of mitigation, the development of the Site would likely result in the following effects at the construction stage and completed development stage:

- Construction Stage: No Significant effect at the Site Level; and
- Completed Development: No Significant effect at the Site Level.

#### *Water Vole*

The ditches bounding the Site offer suitable habitat for use by water vole and two potential water vole burrows were found on a northern boundary drain. As such water vole are assumed to be present on all watercourse on Site. Due to the assumed presence, the Site layout has been designed to provide a suitable buffer from all watercourses to avoid impacts to water vole.

- Construction Stage: No Significant effect at the Site Level; and
- Completed Development: No Significant effect at the Site Level.

## **4.2 Mitigation and Enhancement Measures**

### **4.2.1 Construction Environmental Management Plan (CEMP)**

The Construction Contractor will be required to prepare and implement a Construction Environmental Management Plan (CEMP). The objectives of the CEMP will be to:

- Identify environmental and ecological obligations and requirements appropriate to development;

- Provide a framework to comply with the identified environmental and ecological obligations and requirements through appropriate mitigation and monitoring measures;
- (Based on the identified mitigation and monitoring measures), provide the basis for setting objectives and targets for the development; and,
- Demonstrate a professional approach to environmental management.

In demonstrating a professional approach to environmental management, the CEMP will set out: general measures; environmental communications and training requirements; environmental monitoring and audit requirements; and, emergency response / incident reporting requirements.

The CEMP would include the following measures in respect of ecology:

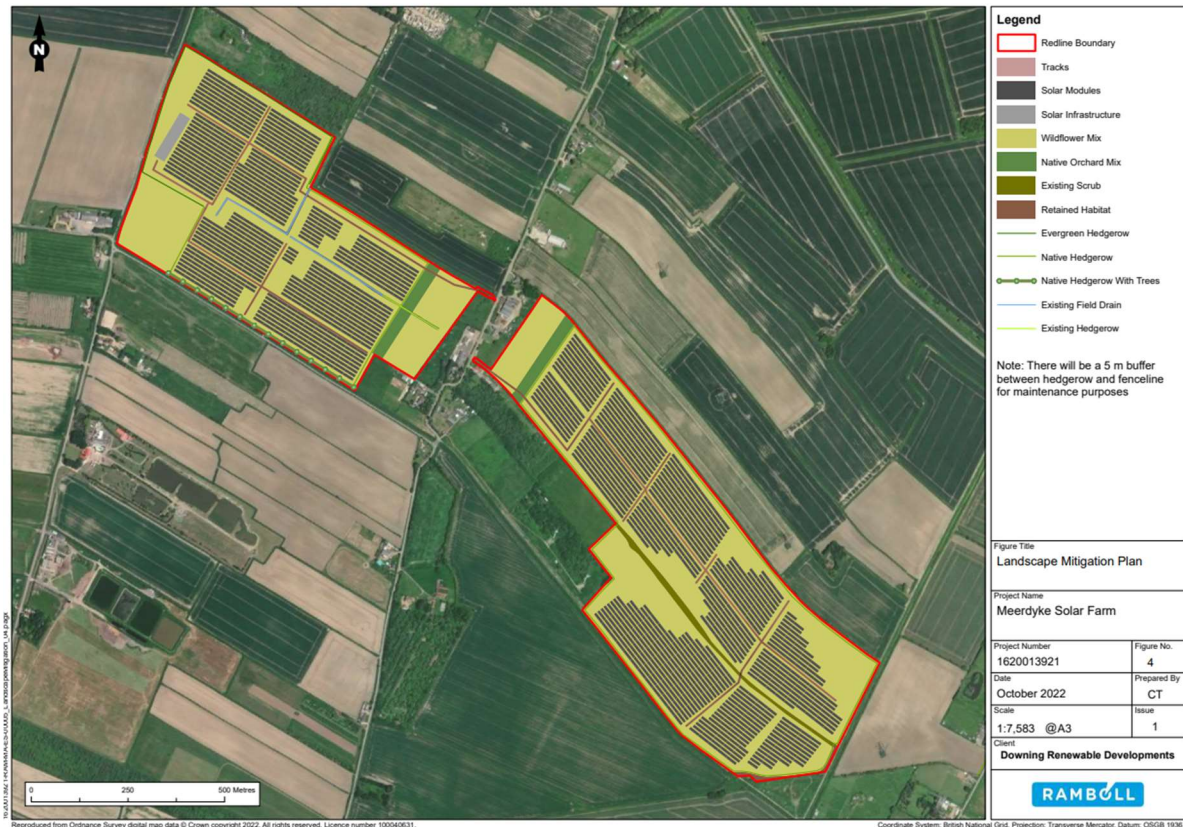
- Specifications for the appropriate timing of works. For example, vegetation clearance works would be undertaken between September and February, outside of the bird nesting period;
- Pollution prevention measures to prevent work causing run-off, pollution or hydrological changes to habitats;
- Measures to ensure exposed excavations would be secured (with appropriate fencing), or provided with mammal ladders and capping of pipework and services, at night time to prevent animals becoming trapped; and
- Measures to reduce construction impacts on bats and birds, such as appropriate timing of works and minimising night time lighting of the Sites.

In addition (based on the identified mitigation and monitoring measures), the CEMP will also include a number of aspect-specific management plans including:

- Bats;
- Badgers;
- Birds;
- Otter;
- Water Voles;
- Protection of retained vegetation; and
- Unexpected species finds.

#### 4.2.2 Habitats

A landscaping plan (see Figure 4) has been produced to provide a framework to allow suitable habitats to be incorporated into the overall design where appropriate. These new habitats will include wildflower mix, native orchard mix, hedgerows and trees. This will allow Biodiversity Net Gain (BNG) to be delivered on Site.



**Figure 4: Landscape Mitigation Plan (reproduced at full size in Appendix 1)**

A Habitat Management Plan (HMP) will be produced for the Site. This document will detail management activities necessary to cover the first 10 years of Site operation and will contain, among other detail; information on planting regimens, mowing schedules and what to do should habitats fail. It is envisaged that the HMP will be secured by means of an appropriately worded planning condition and will be produced at a later date, concurrently with the BNG assessment.

Appropriate root protection zones would be included around retained trees, groups of trees and hedgerows around the Site, in accordance with BS 5837 Trees in relation to design, demolition and construction – Recommendations<sup>16</sup>.

If invasive species are identified during the planting process, the plants will be discarded and disposed of appropriately. Plants imported from outside the UK would be avoided to prevent introducing invasive species.

#### 4.2.3 Species

##### *Breeding Birds*

All wild nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended). As such, the removal of trees and suitable vegetation will be undertaken between September and

<sup>16</sup> BSI, 2012. Trees in relation to design, demolition and construction. Recommendations.

February, outside of the bird nesting season. If this is not possible, vegetation will be checked for the presence of nesting birds by an experienced ecologist prior to removal. If nests are identified, work would need to be delayed until nestlings have fledged. Vegetation clearance will be completed in line with the CEMP produced for Site.

Provision of landscape planting within the proposed development will provide alternative habitat for use by foraging and nesting birds. Furthermore, a variety of bird nest box types will be provided at suitable locations on the Site, attached to Site infrastructure, as mitigation for loss of habitat and additional enhancement. The exact type, number (expected to be a minimum of five) and location of bird boxes will be agreed following consultation with an ecologist prior to the build stage.

### *Bats*

The loss of habitat would have limited impacts on foraging bats.

Provision of landscape planting and green infrastructure with native vegetation and evening flowering species, as well as bat boxes within the finalised design, would provide an enhancement opportunity for bats. The additional linear habitat features incorporated into the landscape mitigation plan will enhance the connectivity for bats across the Site by providing additional flightlines. The exact type, number and location of bat boxes will be agreed following consultation with an ecologist prior to the build stage. This requirement could be delivered off Site.

A lighting scheme should be developed for the Site, the use of lighting onto areas of adjacent habitats should be avoided as far as possible. Where the use of lighting cannot be avoided the following guidance should be incorporated as far as possible to minimise impacts on bats:

- All luminaires should lack UV elements when manufactured;
- Metal halide, fluorescent sources should not be used;
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability;
- A warm white spectrum (ideally <2700 Kelvin) should be adopted to reduce blue light component;
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats;
- Only luminaires with an upward light ratio of 0% and with good optical control should be used; and
- Luminaires should always be mounted on the horizontal, i.e. no upward tilt.

### *Otters*

The loss of habitat on Site would have negligible impacts of otters, however the works have potential to cause disturbance to otters on Smeeth Lode.

Works on Site will be conducted under a PWMS to avoid disturbance to otter on Smeeth Lode. This is to include the following mitigation measures:

- Smeeth Lode will be assessed for otter presence prior to commencement of works on Site;
- Tool box talk on otters to be delivered to all Site staff;
- A 30 m buffer will be established around any otter couch or holt;
- Should a natal otter holt be located, a 150 m buffer will be established whilst young are present to avoid disturbance.

### *Water Voles*

The loss of habitat would have negligible impact on water voles. However, works on Site will be conducted under a PWMS to avoid disturbance to water voles. This is to include the following mitigation measures:

- A toolbox talk on water vole shall be given prior to commencement of works to make contractors aware of the potential for these species being on Site;
- A 5 m buffer will be established around all ditches, no works are to be permitted in these areas;
- Vehicles and plant are also to remain outside of these buffer zones, unless otherwise directed by the on-Site ECoW; and
- Should any works be required to encroach into the buffer zone, for installation of drainage etc, then the banks must be fully investigated by a suitably experienced ecologist prior to works. Should evidence of water vole activity be found, then works will either have to be relocated, or can potentially proceed using a displacement strategy under an ecologist who is registered to use the class licence CL31.

## **4.3 Residual Effects**

### 4.3.1 Designated Sites

Following the implementation of the CEMP, the Proposed Development is likely to result in the following residual effects at the construction stage and completed development stage:

- Construction Stage: **No Significant Effects**; and
- Completed Development Stage: **No Significant Effects**.

### 4.3.2 Habitats

Following the implementation of a suitably designed landscaping scheme; the Proposed Development is likely to result in the following residual effects at the construction stage and completed development stage:

- Construction Stage: **No Significant Effects**; and
- Completed Development Stage: **No Significant Effects / Impacts** at a Site level, with the potential for **Positive Effects / Impacts** related to the implementation of the landscaping plan.

### 4.3.3 Species

#### *Breeding Birds*

Following the removal of vegetation at appropriate times of the year so as to avoid the bird breeding season, the implementation of a suitably designed landscaping scheme, as well the introduction of bird boxes; the Proposed Development is likely to result in the following residual effects at the construction stage and completed development stage:

- Construction Stage: **No Significant Effects / Impacts**; and,
- Completed development: **No Significant Effects / Impacts** at a Site level, with the potential for **Positive Effects / Impacts** related to the implementation of the landscaping plan, provided habitat features for birds are appropriately managed.

#### *Bats*

Following the implementation of a suitably designed landscaping scheme; the Proposed Development is likely to result in the following residual effects at the construction stage and completed development stage:



- Construction Stage: **No Significant Effects**; and

Completed Development Stage: **No Significant Effects / Impacts** at a Site level, with the potential for **Positive Effects / Impacts** related to the implementation of the landscaping plan, provided habitat features for bats are appropriately managed.

*Badgers*

Full details of badger field signs are provided in Appendix 4: Confidential Ecological Report.

Following the implementation of a suitably designed landscaping scheme; the Proposed Development is likely to result in the following residual effects at the construction stage and completed development stage:

- Construction Stage: **No Significant Effects**; and
- Completed Development Stage: **No Significant Effects / Impacts at a Site level**, with the potential for **Positive Effects / Impacts** related to the implementation of the landscaping plan.

*Otter*

Following the PWMS embedded in the CEMP; the Proposed Development is likely to result in the following residual effects at the construction stage and completed development stage:

- Construction Stage: **No Significant Effects / Impacts**; and
- Completed Development Stage: **No Significant Effects / Impacts**

*Water Vole*

Following the PWMS embedded within the CEMP, and the implementation of a suitably designed landscaping scheme; the Proposed Development is likely to result in the following residual effects at the construction stage and completed development stage:

- Construction Stage: **No Significant Effects / Impacts**; and
- Completed Development Stage: **No Significant Effects / Impacts**

**4.4 Summary**

Table 4.1 contains a summary of the potential effects pre-mitigation, and likely residual effect post-mitigation. As can be seen, provided mitigation and enhancements are incorporated, the scheme will likely lead to long-term positive effects for habitat, breeding birds, bats and reptiles.

**Table 4.1: Summary of potential effects and likely residual effects**

	Ecological Importance / Value	Potential Effect	Residual Effect
<b>STATUTORY DESIGNATED SITES</b>			
Internationally Important	-	No Significant Effects / Impacts	<b>No Significant Effects / Impacts</b>
Non statutory Designated	-	No Significant Effects / Impacts	<b>No Significant Effects / Impacts</b>
<b>HABITATS</b>			

	Ecological Importance / Value	Potential Effect	Residual Effect
Application Site Habitats	Site	Construction: No Significant Effects / Impacts Site Level	Construction: <b>No Significant Effects / Impacts</b>
		Completed Development / Operation: No Significant Effects / Impacts Site Level	Completed Development / Operation: <b>No Significant Effects / Impacts</b> , with the potential for <b>Positive Effects / Impacts</b> .
<b>SPECIES</b>			
Bats	Site	Construction: No Significant Effects / Impacts Site Level	Construction: <b>No Significant Effects / Impacts</b> Site Level
		Completed Development / Operation: No Significant Effects / Impacts Site Level	Completed Development / Operation: <b>No Significant Effects / Impacts</b> Site Level, with the potential for <b>Positive Effects / Impacts</b> .
Badgers	Local	Construction: Negative Effects / Impacts local Level	Construction: <b>No Significant Effects / Impacts</b> Local Level
		Completed Development / Operation: No Significant Effects / Impacts local Level	Completed Development / Operation: <b>No Significant Effects / Impacts</b> Local Level, with the potential for <b>Positive Effects / Impacts</b> .
Birds	Site	Construction: Negative Effects / Impacts Site Level	Construction: <b>No Significant Effects / Impacts</b> Local Level
		Completed Development / Operation: No Significant Effects / Impacts Site Level	Completed Development / Operation: <b>No Significant Effects / Impacts</b> Local Level, with the potential for <b>Positive Effects / Impacts</b> .
Otter	Site	Construction: Negative Effects / Impacts Site Level	Construction: <b>No Significant Effects / Impacts</b> Site Level

	Ecological Importance / Value	Potential Effect	Residual Effect
		Completed Development / Operation:  No Significant Effects / Impacts Site Level	Completed Development / Operation:  <b>No Significant Effects / Impacts Site Level</b>
Water vole	Site	Construction:  No Significant Effects / Impacts Site Level	Construction:  <b>No Significant Effects / Impacts Site Level</b>
		Completed Development / Operation:  No Significant Effects / Impacts Site Level	Completed Development / Operation:  <b>No Significant Effects / Impacts Site Level</b>

## 5. CONCLUSIONS

The extended UK habitat and breeding bird surveys confirmed that the Site is of ecological importance at up to local level. By undertaking the work in accordance with the commitments and recommendations made in this report, the Proposed Development is likely to be in conformity with relevant planning policy and legislation relating to ecology. Following the implementation of the mitigation and enhancements listed here, negative impacts on biodiversity will be minor and temporary, limited to the construction phase, and in the long term the Proposed Development will be of benefit to biodiversity.

Table 5.1 summarises the mitigation requirements for the Proposed Development, along with the enhancements that will be delivered.

<b>Table 5.1: Summary of Mitigation and Enhancement</b>	
<b>Ecological Feature</b>	<b>Mitigation and Enhancement</b>
Habitats	Landscape and planting to be implemented as outlined in landscape mitigation plan. HMP and CEMP to be produced.
Birds	Site clearance to be conducted outside of bird nesting season, PWMS within CEMP to be followed if works cannot be timed accordingly. Provision of landscape planting and bird boxes within Site boundary.
Badger	PWMS embedded within CEMP to avoid impact to badgers.
Bats	Provision of landscape planting including hedgerows and orchards, bat boxes to be installed, potentially off-Site.
Otter	PWMS to be embedded within CEMP to avoid disturbance to otters during development of Site.
Water Vole	PWMS to be embedded within CEMP to avoid disturbance to water vole during development of Site.

## **APPENDIX 1**

### **FIGURES**

## **APPENDIX 2**

### **RELEVANT LEGISLATION AND POLICY**

## **APPENDIX 3**

### **BREEDING BIRD SURVEY**



## **APPENDIX 4**

### **CONFIDENTIAL ECOLOGICAL REPORT**

