



# ARCUS

**PRELIMINARY ECOLOGICAL APPRAISAL  
COMMON FARM, LAUGHTON COMMON**

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**BANKS**Renewables





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## **1 SUMMARY**

This Preliminary Ecological Appraisal (PEA) determines the potential ecological impacts of a solar development at Common Farm, Laughton Common and sets out recommendations for additional surveys that are required to inform the assessment and mitigation to address any effects that can be identified at this stage.

Due to the presence of a Local Wildlife Site within the Site boundary, consultation with the Local Planning Authority (LPA) is required prior to commencement of any construction activities. This will include informing the LPA of the extent of the proposed Development to ensure that the best results for biodiversity will be achieved. Further protected species surveys can be undertaken at any point without directly liaising with the LPA.

Further survey work is required to inform the assessment of ecological impacts to breeding birds and great crested newts. The results of these surveys and the associated assessment of impacts and mitigation will be reported separately to this PEA.

## 2 INTRODUCTION AND BACKGROUND

Arcus Consultancy Services Limited (Arcus) were instructed by Banks Renewables to undertake a Preliminary Ecological Appraisal (PEA) of land to the west of Laughton Common, Dinnington, Sheffield (henceforth referred to as the 'Site'), centred on National Grid Reference SK 50283 86572.

This report has been prepared to inform the initial design options for a proposed solar farm (henceforth referred to as the 'Development').

This report details ecological baseline conditions and potential ecological impacts from the Development, taking into account relevant planning policy and legislation. Further surveys and mitigation have been described, where applicable, in order to provide additional information for assessing impacts, and to inform recommendations to avoid or reduce potential ecological impacts.

### 2.1 Planning Policy and Legislation

All relevant legislation and policy discussed in the report are detailed in Appendix A.

## 3 METHODS

### 3.1 Desk Study

Natural England's Multi Agency Geographic Information for the Countryside<sup>1</sup> (MAGIC) website was consulted to obtain information about local or national statutory designated sites such as Local Nature Reserves (LNR) and Sites of Special Scientific Interest (SSSI) within 2 km of the Site. A search for European statutory designated sites such as Special Areas of Conservation (SAC), Special Protection Areas (SPA) or Ramsar sites within 5 km of the Site was also undertaken. MAGIC was also consulted for information about important habitats, such as ancient woodland and priority habitats, as well as the presence of European Protected Species (EPS) mitigation licences.

Rotherham Biological Records Centre (RBRC) was consulted for local records of features of ecological interest within 2 km of the Site, which included non-statutory designated Local Wildlife Sites (LWS) and notable and protected species.

A review of historic aerial satellite imagery<sup>2</sup> was undertaken for the entirety of the Site to gain an understanding of past land-use.

### 3.2 Extended Phase 1 Habitat Survey

An Extended Phase 1 Habitat Survey was conducted on 14<sup>th</sup> December 2020 by a suitably experienced ecologist. The survey included all land within the Site (shown on Figure 1, Appendix B). The aim of the survey was to classify and map habitats according to standard methods<sup>3</sup> and to assess their potential to support notable and protected species, including mammals, birds, amphibians and reptiles. The survey was carried out following the Guidelines for Preliminary Ecological Appraisal<sup>4</sup>. Target Notes (TN) were recorded of features of particular ecological interest.

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<sup>1</sup> Multi Agency Geographic Information for Countryside (MAGIC) [Online] Available at: <https://magic.defra.gov.uk/home.htm> [Accessed November 2020]

<sup>2</sup> Google LLC (2020) *Google Earth* [Online] Available at: <https://earth.google.com/web/> [Accessed November 2020]

<sup>3</sup> JNCC (2010) *Handbook for Phase 1 habitat survey: a technique for environmental audit*. Nature Conservancy Council.

<sup>4</sup> CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2<sup>nd</sup> Edition*. Chartered Institute of Ecology and Environmental Management, Winchester.



### 3.3 Bat Roost Assessment

During the Extended Phase 1 Habitat Survey, a preliminary assessment of the potential of on-site features to support bat roosts and/or provide suitable commuting or foraging habitat was conducted. The bat assessment work and recommendations followed guidelines produced by the Bat Conservation Trust (BCT)<sup>5</sup>. This initial bat assessment informs whether or not further surveys are required to assess the potential effects of the Development on bats. Features subject to assessment included the adjacent habitats, the grassland and individual trees. The individual trees were classified according to their 'Roost Suitability'. Should evidence of bats be recorded or the features assessed to provide suitability for bats, then further surveys may be required.

### 3.4 Great Crested Newt Surveys

#### 3.4.1 Habitat Suitability Index (HSI) Assessment

During the Extended Phase 1 Habitat Survey, a Habitat Suitability Index (HSI) assessment<sup>6</sup> was carried out on waterbodies (where accessible) within the Site. Further ponds within 500 m buffer were surveyed on 12<sup>th</sup> January 2021. The HSI assessment considers a range of features that affect the suitability of waterbodies to support great crested newt (*Triturus cristatus*) (GCN); e.g., size of waterbody, extent of shading, abundance of aquatic plants, presence of fish and quality of surrounding habitat. The assessment results in a score that helps to determine the suitability of waterbodies to support GCN and the need for further, more detailed surveys.

### 3.5 Badger Survey

As part of the Extended Phase 1 Habitat Survey, a thorough inspection of the Site and surrounding habitat (where accessible) was carried out. Particular attention was paid to dense areas of vegetation to check for evidence of badger (*Meles meles*) activity, including:

- Presence of holes with evidence of badger, such as footprints, discarded hair, etc.;
- Presence of dung pits and latrines;
- Presence of well-used runs with subsidiary evidence of badger activity; and
- Presence of other indications of badger activity, such as signs of foraging and footprints.

### 3.6 Ornithological Walkover

A walkover assessment of the Site and adjacent habitats (where accessible) was carried out at the same time as the Extended Phase 1 Habitat Survey. The aim of this assessment was to determine the potential of the Site and surrounding area to support breeding or wintering birds of conservation concern (for example birds listed in Schedule 1 of the Wildlife and Countryside Act 1981<sup>11</sup> (as amended) and Annex I of the EC Birds Directive).

### 3.7 Limitations and Assumptions

The survey was undertaken in suitable weather (dry, no rain or strong winds) by a suitably experienced ecologist who is a Graduate member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

The Extended Phase 1 Habitat Survey was undertaken at a sub-optimal period for botanical growth (optimal survey period March – September, inclusive). However, sufficient data was obtained to enable botanical identification from dead stems and leaf growth, such that

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<sup>5</sup> Collins, J (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3<sup>rd</sup> ed.). The Bat Conservation Trust, London.

<sup>6</sup> Oldham, RS., et al. (2000) *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10 (4), 143-155.

habitats could be categorised during the walkover survey. The timing of the assessment was therefore not considered to be a significant limitation to the findings of this assessment.

Not all waterbodies within 500 m of the Site could be accessed for the initial HSI assessment. No access was granted to survey Ponds 4, 6, 7, 8, 9 and 13. This is not considered a significant limitation for this assessment because those ponds within the Site and closest to the Site were surveyed, with the exception of Pond 4. Furthermore, the desk study returned historic records of GCN (three records from 2000), which have helped to inform the recommendations of this report.

## 4 BASELINE RESULTS

### 4.1 Desk Study

#### 4.1.1 Designated Sites

There is a single national statutory designated site, Anston Stones Wood Local Nature Reserve (LNR), which is within 2 km of the Site, and no European or international designated sites within 5 km of the Site. There are seven non-statutory designated LWS within 2 km of the Site. Further details on the designated sites are provided in Table 4.1.

**Table 4.1: Designated sites and their proximity to the Site.**

Site	Status	Minimum Distance and Direction (km) from the Site	Description/Reason for Designation
<b>Statutory designated sites</b>			
Anston Stones Wood	LNR	1.9 km south-east	A limestone ancient woodland which supports ash, wynch elm in the lower valley and native tree species of lime, yew, field maple and rowan. The upper valley supports oak, ash-lime and birch woodland. The site includes an area of ungrazed species-rich limestone grassland dominated by upright brome and tor-grass.
<b>Non-statutory designated sites</b>			
Brampton Common	LWS	Within the Site boundary	Open pasture, farmland and rough grassland separated by well-vegetated ditches and streams. Brampton Common qualifies as a LWS under the following criteria: supports breeding population of skylark and supports species-rich hedgerows.
Thurcroft Mineral Line	LWS	0.01 km north-east	The trail runs along a disused railway line to Thurcroft Colliery from Steadfolds Lane, it then continues south and is included within Dinnington Marsh LWS. Includes ancient, species-rich hedgerows, neutral grassland and calcareous grassland.
Dinnington Marsh	LWS	0.02 km north-east	An area of open grassland, scrub, developing woodland and fishing pond. Eel Mires Dikes crosses through the site. Dinnington Marsh is known to support a breeding population of grasshopper warbler.

Site	Status	Minimum Distance and Direction (km) from the Site	Description/Reason for Designation
Dinnington Colliery Tip	LWS	1.15 km south-east	A recently qualified LWS which comprises of neutral grassland, calcareous grassland, standing water and broadleaved woodland.
Axle Lane	LWS	1.30 km south	An area of arable land which is situated between the villages of Kiveton Park, Todwick and South Anston. Designated as a Local wildlife site as it supports over 0.25% of the UK wintering population of golden plover.
Todwick Common	LWS	1.40 km south-west	A large area of arable land between the village of Todwick and the M1 motorway. The LWS comprises of small woodlands plantations and species-rich hedgerows. It is known to support wintering population of golden plover, breeding populations of skylark and yellowhammer, populations of brown hare, species-rich ancient hedgerows and cancerous grassland.
Dinnington POS	LWS	1.50 km east	Reason for site designation unknown.

#### 4.1.2 Protected Species

Species records dated from 2010 onwards and that are relevant to the habitats present and the proposed Development are summarised in Table 4.2, with avian records summarised in Table 4.3. The species are protected under UK legislation<sup>11,12,16</sup> and/or are listed under the NERC Act 2006<sup>13</sup> as species of principal importance.

There are a single European Protected Species (EPS) mitigation licence application within 2 km of the Site for bats. This licence was granted in 2009 for the destruction of a resting place of common pipistrelle, *Pipistrellus Pipistrellus*, located approximately 1.2 km east of the Site boundary.

**Table 4.2: Protected and Priority Species within 2 km of the Site**

Taxonomic group	Species	Number of records	Date of most recent record	Distance and direction of most recent record from the Site
<b>Bats</b>	Common Pipistrelle	1	2010	1 km east
	Unidentified bat	2	2017	1.9 km north-east
<b>Mammals</b>	Brown Hare	11	2011	0.75 km west
<b>Amphibians</b>	Smooth Newt	5	2018	0.7 km east
	Common toad	6	2018	0.7 km east
	Common Frog	4	2018	0.7 km east

**Table 4.3: Protected and Priority Bird Species within 2 km of the Site**

<b>Taxonomic group</b>	<b>Species</b>	<b>Number of records</b>	<b>Date of most recent record</b>	<b>Distance and direction of most recent record from the Site</b>
<b>Birds</b>	Red Kite	14	2020	0.4 km north-east
	Greenshank	5	2019	0.5 km north-east
	Barn Owl	62	2020	0.9 km south
	Fieldfare	28	2020	0.9 km south-west
	Grey Partridge	52	2018	0.9 km south-west
	Quail	5	2011	0.9 km south-west
	Redwing	41	2020	0.9 km south-west
	Brambling	13	2019	1 km south-west
	Grasshopper Warbler	44	2020	1 km south-west
	Greylag Goose	23	2018	1 km south-west
	Kingfisher	24	2019	1 km south-west
	Lapwing	176	2020	1 km south-west
	Lesser Redpoll	52	2020	1 km south-west
	Little Ringed Plover	33	2019	1 km south-west
	Osprey	3	2020	1 km south-west
	Peregrine	7	2020	1 km south-west
	Skylark	80	2020	1 km south-west
	Yellow Wagtail	8	2017	1 km south-west
	Yellowhammer	34	2017	1 km south-west
	Curlew	14	2017	1.2 km south-east
Whimbrel	1	2012	1.2 km south-east	
Cuckoo	7	2020	1.3 km east	
Common Scoter	1	2020	1.5 km south-west	

#### **4.1.3 Priority Habitats**

There are no priority habitats within the Site boundary. Adjacent to the Site along the northern boundary lies a small area of deciduous woodland which is classified as a priority habitat. Further areas of deciduous woodland can be found within 2 km of the Site, as well as areas of good quality semi-improved grassland and low calcareous grassland.

#### **4.1.4 Site History**

Satellite imagery shows the Site to have been arable/pasture land with woodland habitats adjacent to the north-west, all of these habitats appear to have been the same since 1999 and have not changed over recent years. The habitats on Site do not appear to have changed since this time, with what appeared to be occasional planting of young trees and gapping up of hedgerows in recent years.

#### **4.1.5 Site Description**

The Site is situated to the south-west of Laughton Common, approximately 14 km south-east of Rotherham, Sheffield. Access to the Site is from The North Anston Trading Estate,

along Booker's Lane. The Site mostly comprises of arable fields, which were separated by a series of ditches and hedgerows. Common Farm is situated within the centre of the Site and is excluded from the survey. In the wider landscape lies further areas of arable and pasture lands with drainage ditches and small plantation woodlands. Anston Brook lies approximately 220 m south-west of the Site and Cramfit Brook lies approximately 606 m south. The villages of Laughton Common and Dinnington are situated to the east of the Site. The M1 (A1) motorway lies approximately 1.8 km west of the Site.

## **4.2 Phase 1 Habitats**

Scientific names are excluded from plant species names in the following sections and only the common names are used. A full list of plant species, including scientific names, is provided in Appendix C.

### **4.2.1 Amenity grassland**

Within the centre of the Site lies an area of amenity grassland which surrounds the farm buildings. This is outside of the proposed Development area.

### **4.2.2 Arable Fields**

The Site was mostly comprised of arable fields, some were ploughed down to bare earth and others comprised of short crops. Most fields were bordered by species-poor hedgerows with mature trees and drainage ditches were present throughout the Site, most of which contained water.

### **4.2.3 Bare Ground**

Several dirt access tracks were present throughout the Site, which comprised of bare ground and are shown on Figure 1, Appendix B.

### **4.2.4 Bracken – continuous**

A small area of continuous bracken was present to the north of the Site, adjacent to a broadleaved plantation.

### **4.2.5 Buildings**

A farmhouse and several farm buildings are situated within the centre of the Site, although this area will not be impacted upon for the proposed Development works.

### **4.2.6 Defunct hedge- species-poor**

Species-poor bramble and hawthorn hedgerow was present along the field margins with a variety of wet and dry ditches in the understoreys. Other species identified within the hedgerows included dog's rose with spear thistle, meadowsweet, dove's-foot cranesbill, fern, moss sp. and tufted hairgrass found in the understorey.

### **4.2.7 Dry ditch**

Some ditches which bordered the arable fields were dry and had appeared to have been dry for an extended period of time due to the dense terrestrial vegetation growing within the ditches and the recent high volume of rainfall prior to the Phase 1 Habitat Survey being carried out.

### **4.2.8 Hedge with trees – species-poor**

There were several species-poor hedgerows with trees surrounding the agricultural fields. Hawthorn hedgerows with occasional dog rose. Trees within the hedgerow comprised of

ash, sycamore, oak and occasional dogwood. Common nettle, and ground ivy were found in the understorey.

#### **4.2.9 Intact hedge – species-poor**

Some of the hawthorn hedgerows around the field margins were intact and well-managed. In the understorey were a variety of ground flora which included: cleavers, white-dead-nettle, dove-foot cranesbill, dock sp., ribwort plantain and white clover.

#### **4.2.10 Running water**

There are several ditches which contained a moderate flow of water at the time of the walkover survey. Ditches along the eastern boundary contained water cress, soft rush and reedmace and was heavily turbid. No aquatic invertebrates were recorded. Ditches present along the south-western boundary were situated in open fields with steep banksides, which had been recently cut.

#### **4.2.11 Scattered Trees**

The Site mostly comprised of scattered broadleaved trees along the field margins. Species included ash, silver birch, sycamore, willow and oak. Scattered coniferous trees were recorded along the field margins to the west of the farm buildings. The scattered trees across the Site were of varying age and size, those which were mature had potential bat roosting features which are described in Section 4.3.1.1.

#### **4.2.12 Semi-improved neutral grassland**

Semi-improved neutral grassland was present within the field along the eastern boundary of the Site. The sward height varied throughout the site, with some areas cut very short and others approximately 30 cm in height. Further areas of semi-improved neutral grassland were found along the field and ditch margins throughout the Site. Species in the sward generally included: Yorkshire fog, vetch sp., cow's parsley, dandelion, white clover, ribwort plantain, black medic, tansy ragwort, common hogweed, cock's-foot, cleavers, common nettle, yarrow, bitter dock, bristly ox-tongue, buttercup sp., creeping buttercup and creeping bent grass.

#### **4.2.13 Scrub – dense**

Areas of dense scrub comprising of bramble and dogwood were found to the northern boundary of the Site, surrounding pond 1 (Figure 1, Appendix B).

#### **4.2.14 Scrub – scattered**

Gorse scrub was occasionally found scattered along the field margins.

#### **4.2.15 Standing Water**

There is a single pond (P1) within the Site boundary, as shown on Figure 1, Appendix B which was in moderate condition. Vegetation surrounding the pond consisted of bramble and hard rush. There some aquatic vegetation present and the water was clear. No waterfowl or signs of aquatic invertebrates were recorded. A further pond (Pond 2) is situated within the centre of the Site, although excluded from the proposed Development. The banksides were surrounded by mature willow trees, hard rush and pampas grass. There was little aquatic vegetation present in the two ponds at the time of the walkover.

#### **4.2.16 Other Tall herb and fern – ruderal**

Small areas of tall ruderal were found along the south-western boundary of the Site. Tall ruderal species mostly comprised of teasel, common nettles and occasional bramble.

## 4.3 Species

### 4.3.1 Bats

#### 4.3.1.1 Trees

There are several mature trees on Site which were assessed as having moderate and low potential to support roosting bats, as shown on Figure 1, Appendix B. All other trees were assessed as having negligible potential to support roosting bats due to their lack of features, age and size.

Within the Site, there are several hedgerows that have the potential to provide suitable foraging and commuting habitat for bats, which links up to other trees that are potentially suitable for roosting bats in the wider landscape.

Table 4.4 below provides further details of each tree, its location, roost potential, and Potential Roost Features (PRFs) such as rot holes, split limbs, and lifted bark.

**Table 4.4 Descriptions of Trees with Potential Roosting Features**

Tree No	Species and Location	Bat Roost Potential	Potential Roost Features
1	Willow (SK 50455 86668)	Low	Dense covering of ivy.
2	Unidentified tree (SK 50588 86620)	Moderate	Missing limbs, knot hole, horizontal crack in bark Barn owl box present on the north-western elevation.
3	Unidentified tree (SK 50603 86659)	Low	Missing limbs.
4	Oak (SK 50615 86693)	Moderate	Missing limbs, knot hole and spilt bark.
5	Oak (SK 50621 86714)	Low	Spilt bark.
6	Oak (SK 50458 86983)	Moderate	Barn owl box present
7	Oak (SK 50425 86947)	Low	Spilt bark.
8	Oak (SK 50292 86792)	Low	Missing limbs.
9	Oak (SK 49759 86491)	Low	Missing limbs.
10	Oak (SK 49764 86501)	Low	Ivy cover.
11	Oak (SK 50252 86455)	Low	Missing limbs.
12	Oak (SK 50174 86503)	Low	Spilt bark.
13	Unidentified tree (SK 50148 86518)	Moderate	Large knot hole, considered likely that water can get inside the trunk.
14	Ash (SK 50090 86553)	Low	Ivy cover.
15	Unidentified tree (SK 50376 86389)	Moderate	Barn owl box present on the north-eastern elevation.
16	Sliver birch (SK 50437 86353)	Low	Small knot hole.
17	Ash (SK 50579 86271)	Low	Spilt bark.
18	Unidentified tree (SK 50150 86009)	Low	Spilt bark.

#### 4.3.1.2 Habitats

Although the Site was mostly comprised of open arable fields, the mosaic of other habitats, particularly the hedgerow with trees which are present throughout the Site have the potential to support foraging and commuting bats. These features were connected to suitable habitats in the wider landscape by hedgerows and areas of mature woodland. The

Site itself does not experience any light disturbance and is therefore suitably dark for foraging and commuting bats. On this basis and following the BCT guidelines<sup>5</sup>, the Site was classed as having a 'low-moderate' suitability for foraging, commuting and roosting bats.

### 4.3.2 Amphibians

Habitats within the Site offered good foraging and sheltering opportunities for GCN and other amphibians. The woodland was damp in places and there were various log piles and brash piles present offering suitable hibernacula opportunities. In addition, the onsite ponds with water present had good quality vegetation, which was deemed suitable for amphibians.

The desk study returned 15 records for amphibians within 2 km of the Site, five records of smooth newt, six records of common toad and four records for common frog, all within 0.7 km east of the site in 2018. The most recent record for GCN was from 2000, found approximately 0.9 km south east.

There is one pond along the northern boundary of the Site, which was surrounded by bramble, hard rush and scattered horse chestnut trees (Figure 1, Appendix B).

There are 12 ponds within 500 m of the Site boundary, four of which were scoped out for needing further assessment due to them being in use as fishing ponds and considered to be unsuitable to support GCN (P5, P10, P11 and P12, Figure 1, Appendix B). No access was granted to P4, P6, P7, P8, P9 and P13 within 500 m of the Site boundary.

A GCN habitat suitability index (HSI) test<sup>7</sup> was carried out on P1, P2 and P3, which all contained standing water and were accessible. This test assessed the habitats' features for GCN suitability, such as location, area and surrounding terrestrial habitat. Full results of the HSI assessment are located in Appendix E, with a summary of the results in Table 4.5

**Table 4.5 Pond descriptions and HSI results**

Pond No.	Grid Reference	HSI Score	Description
1	SK 49414 87148	0.69 (average)	Located to the north of the Site, within the Site boundary.
2	SK 50437 86663	0.65 (average)	Located outside of the Development area.
3	SK 50392 87220	0.36 (poor)	Approximately 250 m north from the Site boundary.
4	SK 50721 86330	No access.	Approximately 40 m east from Site boundary, within the industrial estate to the east.
5	SK 50860 86521	N/A – scoped out as it's a fishing pond.	Approximately 120 m east from the Site boundary, within the industrial estate.
6	SK 51122 86331	No access.	Approximately 435 m east from Site boundary, within the industrial estate.

<sup>7</sup> Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10 (4), 143-155.



7	SK 50929 86960	No access.	Approximately 325 m north-east from the Site boundary.
8	SK 50325 87432	No access.	Approximately 435 m north from the Site boundary.
9	SK 49206 87491	No access.	Approximately 455 m north-west from the Site boundary.
10	SK 49528 86277	N/A – scoped out as it's a fishing pond.	Approximately 90 m west from the Site boundary.
11	SK 49546 86173	N/A – scoped out as it's a fishing pond.	Approximately 170 m west from the Site boundary.
12	SK 49742 86111	N/A – scoped out as it's a fishing pond.	Approximately 75 m west from the Site boundary.
13	SK 50821 85508	No access.	Approximately 490 m south-west from the Site boundary.

#### 4.3.3 Reptiles

No reptiles or evidence of reptiles was recorded, although habitats with the potential to support foraging and sheltering reptiles were present on Site. The ditches provided good habitat for foraging reptiles, whilst the stone, log and brash piles to the north of the Site offered opportunities for sheltering or hibernating reptiles (Target Notes 4 and 5, Figure 1, Appendix B). The majority of the Site comprised of large arable fields, which are of low value to reptiles, however the field margins comprised of tall ruderal and mosaic of grassland habitats which may support commuting and foraging reptile. The desk study returned no recent records for reptiles within 2 km of the Site boundary.

#### 4.3.4 Badger

No badger setts were recorded on-site or within 30 m of the Site, where accessible. No other evidence of badger was recorded on-site such as footprints, snuffle holes or latrines. The habitats on-site such as: hedgerows, tall ruderal and grassland mosaics were considered suitable to support foraging and commuting badger. The desk study returned no recent records for badger within 2 km of the Site.

#### 4.3.5 Birds

The hedgerow with trees, tall ruderal, arable and grassland field margins habitat within the Site provided good foraging and nesting habitats for birds. Birds recorded during the walkover survey include: blackbird (*Turdus merula*), mallard (*Anas platyrhynchos*), magpie (*Pica pica*) and grey partridge (*Perdix perdix*).

The desk study returned 827 records of 23 species, many of which are species of conservation concern. Many species are unlikely to be associated with the habitats within the Site; however, birds listed as priority species in England under the NERC Act 2006<sup>8</sup>, such as skylark and yellowhammer may breed within the Site.

<sup>8</sup> Natural Environment and Rural Communities (NERC) Act 2006

#### **4.3.6 Otter**

No evidence of otters was recorded within the on-site waterbodies. The ditches were considered to be unsuitable to support foraging, resting or commuting otter due to the poor water quality, water depth (which was very shallow) and absence of aquatic invertebrates or fish species. The desk study returned no records for otter within 2 km of the Site.

#### **4.3.7 Water Vole**

No evidence of water vole was found within the on-site ditches or within waterbodies surrounding the Site. There was limited marginal and aquatic vegetation present within the on-site ditches, offering poor opportunities for foraging or sheltering water vole. Some of the ditches showed signs of eutrophication associated with fertiliser run off. The desk study returned no records for water vole within 2 km of the Site.

#### **4.3.8 Invertebrates**

The area of semi-improved grassland along the eastern boundary and tall ruderal habitats within the Site likely support a range of commonly occurring invertebrate species. The relatively undisturbed character of some habitats may support a more diverse assemblage of invertebrates than might be recorded in the surrounding agricultural landscape.

#### **4.3.9 Other Protected/ Notable Species**

A brown hare (*Lepus europaeus*) was recorded in the south of the Site during the Phase 1 survey (TN 6 on Figure 1, Appendix B). Brown hare is a priority species under the Natural Environment and Rural Communities Act (NERC) 2006<sup>8</sup>

Several roe deer (*Capreolus capreolus*) footprints were identified to the north of the Site, adjacent to the woodland block. This species is not a species of conservation concern.

## **5 DISCUSSION, FURTHER SURVEY REQUIREMENTS AND MITIGATION**

### **5.1 Impact of Development**

The Site has suitable habitats for protected species and these habitats have the potential to be directly and indirectly impacted by the Development. Where necessary, additional ecology surveys are recommended to provide further information to help assess the potential ecological effects of the Development and to inform mitigation.

In order to increase the Development's biodiversity value, and to adhere to Government guidance set out in the National Planning Policy Framework 2019 (NPPF)<sup>18</sup>, a range of enhancement measures have been proposed.

### **5.2 Designated Sites**

Brampton Common LWS falls within the northern part of the Site boundary (covering approximately 1.2ha, total Site area is approximately 121.1ha). It is qualified as a LWS under the following criteria: supports species-rich hedgerows and a breeding population of skylark. The final design layout is not yet confirmed; however, it is recommended that the design includes measures to avoid construction with the LWS.

#### **5.2.1 Mitigation and Enhancements**

Due to the presence of the LWS within the Site Boundary, consultation is required with the Local Planning Authority (LPA) prior to commencement of any construction activities and as part of any planning application. This will include informing the LPA of the extent of the proposed Development to ensure that the best results for biodiversity will be achieved. Further protected species surveys can be undertaken at any point without directly liaising with the LPA.

### 5.3 Habitats

Although the final layout design is not yet confirmed, it is considered likely the proposed Development will result in the permanent loss of arable habitat, small amount of semi-improved neutral grassland and bare ground. It is expected that the hedgerow habitats, trees and ditches will be retained on the Site, and it is not envisaged that there will be any impact to this habitat from the Development. Further recommendations for mitigation and enhancement of habitats are detailed in Section 5.3.1.

#### 5.3.1 Mitigation and Enhancements

The final design of the Development is not yet confirmed; however, a range of mitigation and enhancements measures are recommended to inform the design:

- Any construction work to maintain a minimum of 5 m separation from surrounding hedgerows and no works other than gapping up will be undertaken within the hedgerows root protection zone;
- Retain a buffer of a minimum of 15 m or extent of the broadleaved woodland (woodland located to the north-west of the Site) canopy (whichever is greater) from Site works. The buffer will reduce impacts on tree canopies and roots, along with the associated ground habitats and animal species that it supports; and
- If security lighting is required, then the use of Infra-red cameras is recommended as an alternative. Security lighting will also need to be faced away from sensitive habitats; and
- Habitat enhancement and creation within and outside of the Site, which would be provided in a Landscape and Biodiversity Management Plan (LBMP) to benefit wildflowers and wildlife.

### 5.4 Species

#### 5.4.1 Bats

The Site has habitats and features with the potential to support roosting, commuting and foraging bats. It is recommended that any bat roosting features on-site and habitats used by commuting or foraging bats are retained within the final Development design. However, should this not be possible, further surveys are required (as detailed below) to assess the impacts to roosting bats.

##### 5.4.1.1 Additional Survey Requirements

###### *Trees*

It is recommended that the proposed Development avoids any trees with bat roost potential. Where this is not possible, bat activity surveys will be required on any trees that have been assessed on-site as having moderate or higher potential to support roosting bats.

###### *Habitats*

The Site has been classed as having a 'low-moderate' suitability for foraging and commuting bats. Where impacts to habitats of value to bats cannot be avoided (such as the linear features of hedgerows with trees) in the Development design, the scope of surveys for this level of suitability, and as recommended by the BCT<sup>5</sup>, include:

- One walked transect per month (April-October) in suitable weather conditions. The results of the transect surveys will determine the requirement to increase survey effort if it is found that bat activity is higher than anticipated by habitat assessment alone; and

- Two automated bat detectors to be deployed for five consecutive nights per month (April-October) in appropriate weather conditions for bats.

The methods and results of the survey, as well as an assessment of impacts and associated mitigation, will be provided in a separate report to be submitted with the planning application.

### **5.4.2 Amphibians**

There is a single pond along the northern boundary of the Site, which was assessed as having 'average' potential to support GCN. A further pond is situated within the centre (outside of the proposed Development area) of the Site which was also assessed as having 'average' potential to support GCN. The proposed Development has the potential to adversely affect terrestrial habitats and to harm or disturb GCN during its construction.

#### *5.4.2.1 Additional Survey Requirements*

A GCN presence/absence survey will be undertaken between March and June of all suitable and accessible ponds within 500 m of the Development and will follow standard good practice<sup>9</sup>. The methods and results of the survey, as well as an assessment of impacts and associated mitigation, will be provided in an EcIA report to be submitted with the planning application.

### **5.4.3 Reptiles**

There were lengths of semi-improved grassland, scrub, tall ruderal, hedgerows and rubble piles on the Site that have the potential to support basking, foraging and sheltering reptiles. As the exact location and final design of the Development is currently unknown at this stage, it is recommended that avoidance of habitat of value to reptiles is incorporated in to the final design. However, should this not be possible, and relatively small areas of habitat of value to reptiles are likely to be impacted by the Development, then it is recommended that any clearance works on the Site are carried out using Reasonable Avoidance Measures (RAMs) following the precautionary approach detailed in Section 5.4.2.1.

#### *5.4.3.1 Mitigation Requirements*

In accordance with a precautionary approach, RAMs will be carried out during any site clearance works, in conjunction with mitigation measures for reptiles and other protected species on site, and in accordance with the following outline methodology:

- All works will be directly supervised by a suitably qualified ecologist;
- Clearance works will only be carried out when all species of herptile (reptile and amphibian) are active (above 9c and dry). Although activity is weather and temperature dependent, reptiles are usually latest to emerge and are fully active from April to October, inclusive;
- A hand search of the works area will be carried out, with any natural or artificial refugia (e.g. logs and refuse) inspected for sheltering reptiles that would then be removed from the Site into nearby suitable habitat;
- After the ecologist is satisfied with the preparatory works, they will supervise a destructive search of the area. This will involve the removal of all remaining ground vegetation leaving only bare earth. An excavator with a toothed bucket will be used for this purpose, with the turf/topsoil being placed carefully to one side. Particular care will be required during this exercise, which will be closely monitored by the ecologist; and

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<sup>9</sup> English Nature (2001) *Great crested newt mitigation guidelines*. English Nature.

- Any reptiles caught during this exercise will be removed from Site. In the unlikely event that high numbers of herptiles are present then all works will stop and the Council's ecologist and Natural England consulted to agree appropriate action.

#### **5.4.4 Badger**

No evidence of badger was recorded during the walkover survey. In the absence of mitigation, there is potential that the Development will cause harm or disturbance to commuting and foraging badgers (and other terrestrial mammals) during the construction phase of the Development. No known setts will be impacted.

The long-term, operational effects of the Development on badgers are likely to be positive, because terrestrial habitat quality and availability (for foraging) will be increased with the cessation of arable farming on-site, and the likely provision of additional habitat connectivity to off-site areas such as the broadleaved woodland which is adjacent to the north-west of the Site.

##### **5.4.4.1 Mitigation Requirements**

In order to prevent harm to badgers using the Site, the following controls should be implemented during the works, where applicable:

- Cover excavations overnight to prevent animals falling into them. Inspect excavations daily for the presence of animals before recommencing work on them;
- Any deep excavations that are to be left open overnight should include a means of escape for any animals that may fall in;
- Where possible, works should be limited to the hours from dawn to one hour before sunset;
- The creation of large stock piles of earth should be avoided as these may be attractive for badgers and other animals;
- Store building materials above ground on pallets; and
- Should any new mammal burrows be identified, works in the area will need to stop and a suitably experienced ecologist contacted for advice.

#### **5.4.5 Birds**

The Site has the potential to support a range of breeding birds, including species of conservation concern. Without mitigation, and depending on the time of year that works are carried out, it is possible that the construction of the Development will negatively impact breeding birds.

##### **5.4.5.1 Additional Survey Requirements**

A Breeding Bird Survey will be undertaken between April and July following good practice methods<sup>10</sup>. The methods and results of the survey, as well as an assessment of impacts and associated mitigation, will be provided in a report to be submitted with the planning application. A desk-based assessment for wintering bird species is considered sufficient to provide an assessment of the potential bird interests at the Site during the non-breeding season (approximately September–March).

#### **5.4.6 Otter and Water vole**

It is considered unlikely that either otter or water vole would pose a constraint to the Development due to the unsuitable habitat present on-site. However, as a precautionary approach, the mitigation measures previously provided in Section 5.4.3.1 must be followed.

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<sup>10</sup> Gilbert G., Gibbons D.W., & Evans J. (1998) *Bird Monitoring Methods: a manual of techniques for UK species*. RSPB.

#### **5.4.7 Invertebrates**

Although the final Development design is not yet confirmed, it is considered unlikely to significantly encroach upon, nor impact the connectivity of, habitats of high value to invertebrates, and therefore no further surveys or specific mitigation is recommended.

#### **5.4.8 Other Protected/ Notable Species**

Habitats on site provide suitable terrestrial habitats for brown hare. Although no specific surveys for brown hare are recommended, measure detailed in Section 5.4.3.1 will provide actions to safeguard this species.

## **6 CONCLUSIONS**

The Development has the potential to negatively impact a range of sensitive habitats and species. Further survey work, as described Section 5, is required to inform the assessment of ecological impacts to some of these habitats and species. For those habitats and species not requiring further survey work, good practice mitigation will be sufficient to safeguard them during the construction and operation of the Development and, in some cases, enhancements may provide positive effects that would not otherwise be available in the absence of the Development.

## **APPENDIX A – PLANNING POLICY AND LEGISLATION**

### **The Wildlife & Countryside Act 1981**

The Wildlife and Countryside Act 1981<sup>11</sup>, as amended by the Countryside and Rights of Way Act (CROW) 2000<sup>12</sup> and the Natural Environment and Rural Communities Act (NERC) 2006<sup>13</sup>, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive)<sup>14</sup>, making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
  - Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection; and
- Pick or uproot any wild plant listed under Schedule 8 of the Act. Schedule 9, Part II of the Act also lists many species for which it is an offence to plant, or otherwise cause to grow, in the wild. Any material containing Japanese knotweed is also identified as controlled waste under the Environment Protection Act 1990 and must be disposed of properly at licenced landfill according to the Environmental Protection Act (Duty of Care) Regulations 1991.

### **Habitat Regulations 2017**

The Conservation of Habitats and Species Regulations 2017<sup>15</sup> (the 'Habitat Regulations') are the principal means by which Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (the 'Habitats Directive') is transposed into law in England and Wales. The objective of the Habitats Directive is to protect biodiversity through the conservation of natural habitats and species of wild fauna and flora. The Directive lays down rules for the protection, management and exploitation of such habitats and species and makes it an offence to deliberately capture, kill or disturb wild animals protected under the Habitat Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

### **Natural Environment & Rural Communities (NERC) Act 2006**

The NERC Act 2006<sup>13</sup> places a duty on local planning authorities to have due regard for biodiversity and nature conservation during the course of their operations, and thus ensures that biodiversity is a key consideration in the planning process.

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<sup>11</sup> Legislation.gov.uk *Wildlife and Countryside Act 1981 (as amended)* [online] Available at: <http://www.legislation.gov.uk/ukpga/1981/69> [Accessed January 2021]

<sup>12</sup> Legislation.gov.uk *The Countryside and Rights of Way Act 2000* [online] Available at: <http://www.legislation.gov.uk/ukpga/2000/37/contents> [Accessed January 2021]

<sup>13</sup> Legislation.gov.uk *Natural Environment and Rural Communities Act 2006* [online] Available at: <https://www.legislation.gov.uk/ukpga/2006/16/contents> [Accessed January 2021]

<sup>14</sup> EUR Lex: Access to European Law *Birds Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds* [online] Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32009L0147> [January 2021]

<sup>15</sup> Legislation.gov.uk *The Conservation of Habitats and Species Regulations 2017* [online] Available at: <https://www.legislation.gov.uk/uksi/2017/1012/contents/made> [Accessed on September 2020]

### **Protection of Badgers Act 1992**

Badgers receive strict protection under the Protection of Badgers Act 1992<sup>16</sup>, which prohibits the taking, injuring, selling, possessing or killing of badgers and makes it an offence to ill-treat any badger, damage, destroy, disturb or cause a dog to enter a badger sett. The 1992 Act defines a badger sett as "*any structure or place, which displays signs indicating current use by a badger*".

### **The Hedgerow Regulations 1997**

The Hedgerow Regulations 1997<sup>17</sup> (as amended by the Hedgerow [Amendment] [England] Regulations 2002; hereafter collectively called the Hedgerow Regulations) were made under Section 97 of the Environment Act in 1995 providing the necessary legislation for the protection of certain hedgerows. The overall aim of the Hedgerow Regulations is to secure the retention of important countryside hedgerows, principally ancient and species-rich hedges. The Hedgerow Regulations also introduced new arrangements for planning authorities in England and Wales to protect important hedgerows in the countryside by controlling their removal through a system of notification.

### **National Planning Policy Framework 2019**

The National Planning Policy Framework (NPPF) 2019<sup>18</sup> sets out the Government's requirement for the planning system in England and in doing so establishes framework within which local planning authorities can develop their own planning policies. The NPPF explicitly addresses the conservation and enhancement of the natural environment, including biodiversity, through paragraphs 174–177.

### **Biodiversity Action Plans**

The UK Biodiversity Action Plan (UKBAP) was developed to fulfil the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. The UK Post-2010 Biodiversity Framework' now (as of July 2012) succeeds the UKBAP, although the UKBAP priority species and habitats are retained through the NERC Act. Regional and local BAPs have also been organised to develop plans for species/habitats of nature conservation importance at regional and local levels.

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<sup>16</sup> Legislation.gov.uk *Protection of Badgers Act 1992* [Online] Available at: <https://www.legislation.gov.uk/ukpga/1992/51/contents> [Accessed January 2021]

<sup>17</sup> Legislation.gov.uk *The Hedgerow Regulations 1997* [Online] Available at: <http://www.legislation.gov.uk/uksi/1997/1160/contents/made> [Accessed January 2021]

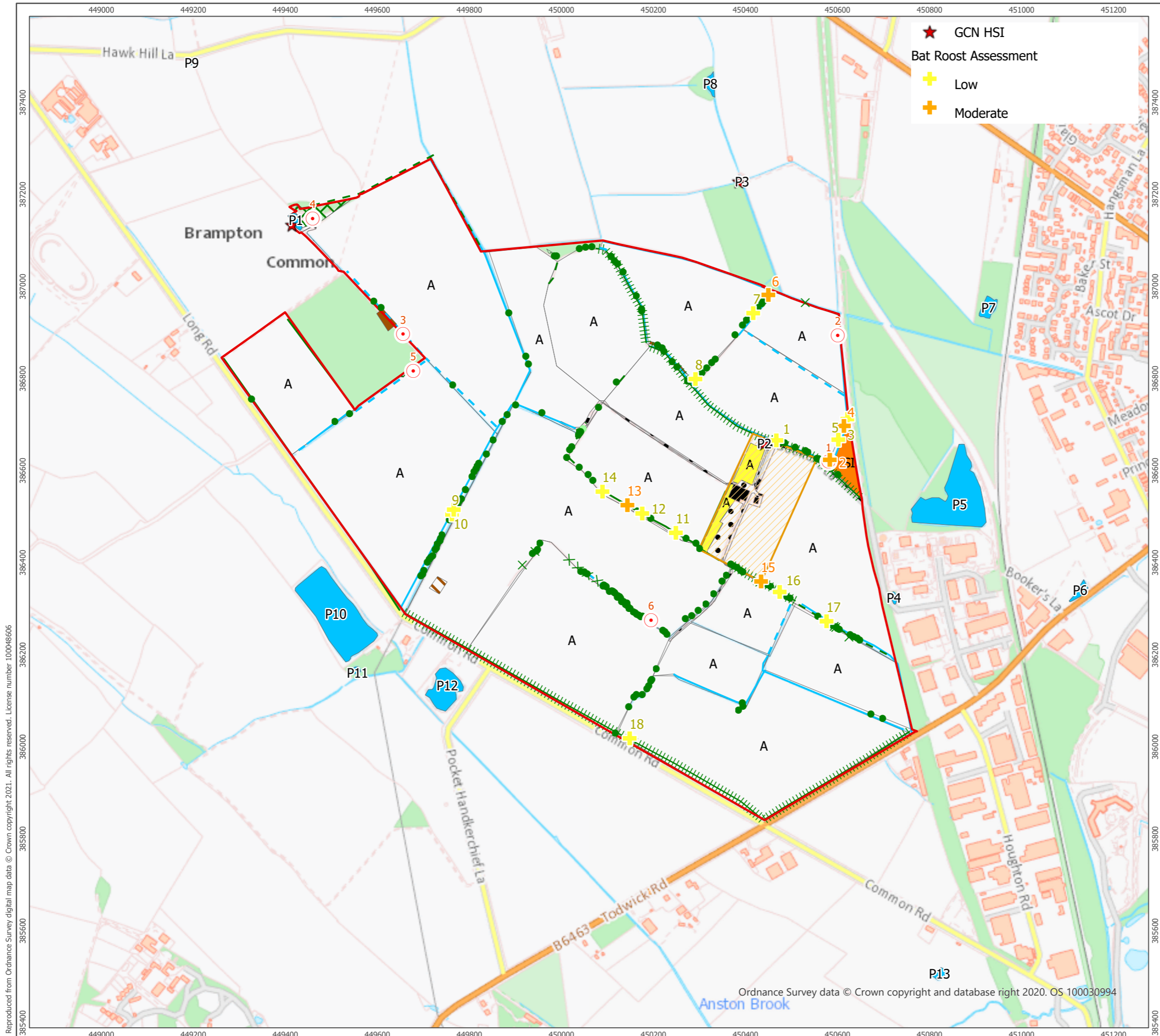
<sup>18</sup> Gov.UK *National Policy Planning Framework 2019* [Online] Available from: <https://www.gov.uk/government/publications/national-planning-policy-framework-2> [Accessed January 2021]



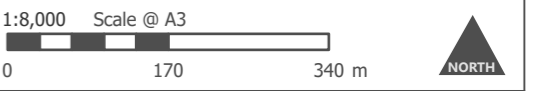
## **APPENDIX B – FIGURES and TARGET NOTES**

### ***Target Notes***

<b>Target Note</b>	<b>Description</b>
1	Log pile
2	Very turbid ditch
3	Roe deer footprints
4	Large rubble pile
5	Log pile
6	Brown hare seen running through arable field



- Site Boundary
- Land Excluded from Option Area
- Scrub - dense/continuous
- Scrub - scattered
- Other tall herb and fern - ruderal
- SI Neutral grassland - semi-improved
- Bracken - continuous
- Standing water
- A Cultivated/disturbed land - arable
- A Cultivated/disturbed land - amenity grassland
- Buildings
- Bare ground
- Scrub - scattered
- Running water
- Defunct hedge - species-poor
- Intact hedge - species-poor
- Hedge with trees - species-poor
- Dry ditch
- Coniferous parkland/scattered trees
- Broadleaved parkland/scattered trees
- ⊙ Target Note
- x Scrub - scattered



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Checked By: SC	Date: 21/01/2021

**Phase 1 Habitat Plan**  
Figure 1

**Common Farm, Laughton Common**  
**Preliminary Ecological Appraisal**

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**APPENDIX C – PLANT SPECIES LIST**
***List of plant species recorded***

<b>Common name</b>	<b>Latin name</b>
Ash	<i>Fraxinus excelsior</i>
Bitter dock	<i>Rumex obtusifolius</i>
Black medic	<i>Medicago lupulina</i>
Bracken	<i>Pteridium aquilinum</i>
Bramble	<i>Rubus saxatilis</i>
Bristly ox-tongue	<i>Helminthotheca echioides</i>
Common hogweed	<i>Heracleum sphondylium</i>
Common nettle	<i>Urtica dioica</i>
Cleavers	<i>Galium aparine</i>
Cock's-foot	<i>Dactylis glomerata</i>
Cows parsley	<i>Anthriscus sylvestris</i>
Creeping bent	<i>Agrostis stolonifera</i>
Creeping buttercup	<i>Ranunculus repens</i>
Dandelion	<i>Taraxacum</i> agg.
Dog's rose	<i>Rosa canina</i>
Dogwood	<i>Cornus sanguinea</i>
Dove's-foot cranesbill	<i>Geranium molle</i>
Fern	<i>Tracheophyta</i>
Gorse	<i>Ulex</i> sp.
Groundsel	<i>Senecio vulgaris</i>
Ground ivy	<i>Glechoma hederacea</i>
Hawthorn	<i>Crataegus monogyna</i> .
Meadowsweet	<i>Filipendula ulmaria</i>
Moss sp.	<i>Bryophyta</i>
Oak	<i>Quercus robur</i>
Pampas grass	<i>Cortaderia selloana</i>
Reed mace	<i>Typha</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Spear thistle	<i>Cirsium vulgare</i>

Sliver birch	<i>Betula pendula</i>
Soft rush	<i>Juncus effusus</i>
Sycamore	<i>Acer pseudoplatanus</i>
Tansy ragwort	<i>Jacobaea vulgaris</i>
Teasel	<i>Dipsacus fullonum</i>
Tufted hair grass	<i>Deschampsia cespitosa</i>
Vetch sp.	<i>Vicia</i> sp.
Watercress	<i>Nasturtium officinale</i>
White clover	<i>Trifolium repens</i>
Willow	<i>Salix</i> sp.
Yarrow	<i>Achillea millefolium</i>
Yorkshire fog	<i>Holcus lanatus</i>

**APPENDIX D - PHOTOGRAPHS**

***Photographs taken during the Extended Phase 1 Habitat Survey***

 <p>14 Dec 2020 at 09:25:54 +53.373654, -1.240785 310° NW Sheffield England S25 United Kingdom</p>	 <p>14 Dec 2020 at 13:34:28 +53.371986, -1.244379 105° E Sheffield England S25 United Kingdom</p>
<p>Photograph 1: Bookers Lane, access road leading on to the site.</p>	<p>Photograph 2: Species-poor hedgerows with trees.</p>
 <p>14 Dec 2020 at 14:10:54 +53.369785, -1.242578 118° SE Sheffield England S25 United Kingdom</p>	 <p>14 Dec 2020 at 09:39:43 +53.374426, -1.240856 271° W Sheffield England S25 United Kingdom</p>
<p>Photograph 3: Ditches present on Site.</p>	<p>Photograph 4: Overview of arable fields.</p>
 <p>14 Dec 2020 at 13:45:04 +53.371213, -1.243287 103° E Sheffield England S25 United Kingdom</p>	 <p>12 Jan 2021 at 12:18:07 +53.378798, -1.258610 36° NE Rotherham England S66 United Kingdom</p>
<p>Photograph 5: Intact hedgerows with trees.</p>	<p>Photograph 6: Pond 1 located along the northern boundary of Site.</p>
 <p>14 Dec 2020 at 13:39:19 +53.371678, -1.243291 319° NW Sheffield England S25 United Kingdom</p>	 <p>14 Dec 2020 at 11:32:18 +53.378858, -1.258002 328° NW Rotherham England S66 United Kingdom</p>

Photograph 7: Barn owl box on tree to the along the field margin.

Photograph 8: Large brick/rubble pile to the north of the Site (Target Note 4).