

Preliminary Ecological Appraisal (PEA)

For

Benningham Grange Barn,

Occold,

Eye,

IP23 7PJ

For

Debbie & Lee Kilburn

November 2023



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The authors and surveyors used to undertake the work are appropriately qualified for the tasks undertaken. The work undertaken while preparing this report has been carried out with due care, skill, and diligence.

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1. Executive Summary

1.1 *Overview*

DCS Ecology Ltd was commissioned by Debbie & Lee Kilburn to carry out a Preliminary Ecological Appraisal (PEA), for an application for the development of a domestic pool and garden room, with an associated plant room, at Benningham Grange Farm, Occold, Eye, IP23 7PJ (central grid reference TM 16900 70183, hereby referred to as the Site).

The site is 0.1 ha (998 square metres) of hardstanding access, including concrete and pea shingle, and amenity grassland. The site is situated approximately 1.2km to the east of the village of Occold, and 4.3km to the south-east of the town of Eye.

The preliminary ecological appraisal was carried out on the 14th of November 2023 by Duncan Sweeting and Elizabeth Thurston of DCS Ecology Ltd, to assess the ecological value of the Site.

1.2 *Results*

The desk study found two country wildlife sites:

- Bats
- Birds
- Amphibians
- Reptiles – including grass snakes
- Hedgehogs
- Other mammals- brown hares, water voles, otters, and harvest mice
- A few protected plants and invertebrates of note

The habitats recorded onsite included primarily short-mown amenity grassland, a concrete access road to the residence, and a pea shingle driveway. With two buildings located on site, a converted barn, and a car port. Adjacent habitats included arable fields, further amenity grassland, and hedgerows interspersed with mature trees.

Four ponds were identified within 250m of the site boundary. Two of which were assessed for great-crested newt suitability. No ponds were within the site boundary.

The habitats listed above, and features recorded within and adjacent to the site provide potential habitat for breeding birds, bats, great crested newts, and small mammals. The site was within 250m of further suitable habitat for terrestrial great crested newts.

2. Background to Commission

2.1 Overview

DCS Ecology Ltd was commissioned by Debbie & Lee Kilburn to carry out a Preliminary Ecological Appraisal (PEA), for an application for the development of a domestic pool and garden room, with an associated plant room, at Benningham Grange Farm, Occold, Eye, IP23 7PJ (central grid reference TM 16900 70183, hereby referred to as the Site).

2.2 *Aims of Study*

This report provides an ecological appraisal and roost assessment of the Site following the completion of a desk study and site visit. The aim of this study was to:

- Provide a description of existing habitat types;
- To determine the existence and location of any ecologically valuable areas;
- To identify the potential (or actual) presence of protected and/or notable species;
- To provide the legislative and/or policy protection afforded to any habitats present, or any species assessed as likely to be associated with the site; and
- To recommend any further ecological surveys considered necessary to inform mitigation requirements for the application within the Site.

2.3 *Site Description*

The site is 0.1ha (998 square metres) of hardstanding access, including concrete and pea shingle, and amenity grassland. The site is situated approximately 1.2km to the east of the village of Occold, and 4.3km to the south-east of the town of Eye. Within the site boundary there were few habitats of ecological importance. With the main habitats being short-mown amenity grassland, and hardstanding. Directly adjacent habitats consisted of a large amount of amenity grassland, as well as arable land. Some mature trees with potential roosting features were identified along the boundary of the land, outside of the site boundary.

There were four ponds within 250m of the site, which had the potential to support breeding amphibians (including great-crested newts). Habitat suitability assessments (HSI) were conducted on two of the ponds whilst on site, and descriptions of the ponds can be found in section 5. Terrestrial habitat within the site boundary was lacking, and likely wouldn't support foraging amphibians.

Beyond the site, the wider countryside consisted predominately of arable fields. These were sparsely bordered by hedgerows with mature trees and provide sub-optimal commuting and foraging habitat for bat species. Adjacent land to the site contains areas of foraging habitat and the ponds, mature trees, and hedges adjacent to the site would be beneficial for foraging bats.

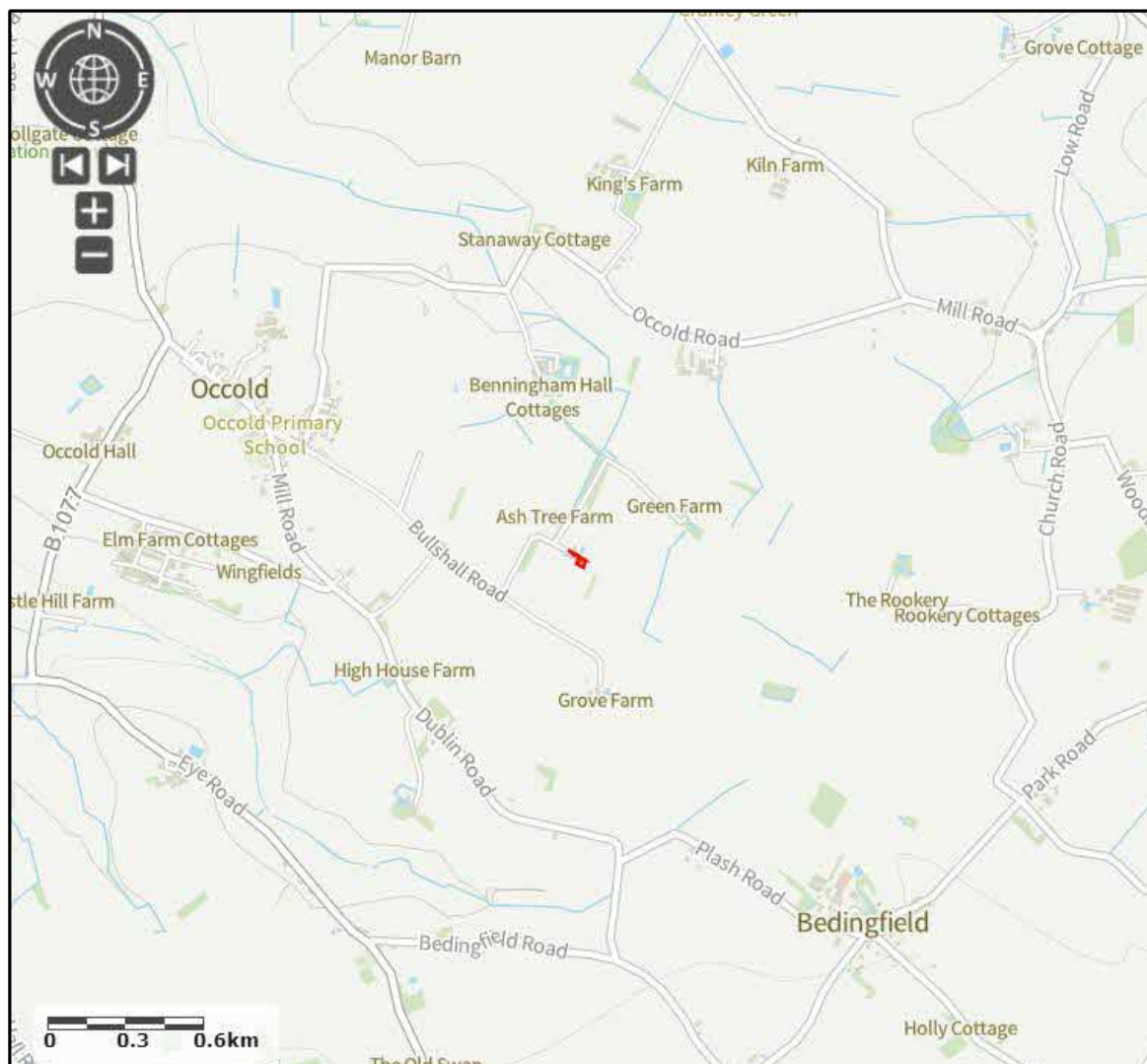


Figure 1. Site location (outlined in red). (1:25000) Based upon Ordnance Survey (c) Crown Copyright under licence A C0000853931.

2.3 Relevant Legislation

Protected species, as referred to within this report, are taken to be those protected under European Legislation (Conservation of Habitats and Species Regulations 2010, as amended) and UK legislation (Wildlife and Countryside Act 1981; Protection of Badgers Act 1992); and those of principle importance in England as listed in Section 41 of the NERC Act (2006).

The National Planning Policy Framework (NPPF) September 2023 places responsibility on Local Planning Authorities (LPAs) to aim to conserve and enhance biodiversity in and around developments. Section 40 of the NERC Act requires every public body to “have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”. Biodiversity, as covered by the Section 40 duty, is not confined to habitats and species of principal importance but refers to all species and habitats. However, the expectation is that public bodies would refer to the Section 41 list (of species and habitats) through compliance with the Section 40 duty.

Appendix VI details legislation which protects species and groups relevant to the site (bats, reptiles, birds, and great crested newts).

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3. Methods

3.1 *Desk Study*

Data obtained from the Suffolk (SBIS) was used to conduct a cross-county standard data search¹, for any information regarding statutory and non-statutory sites, ancient-veteran-notable trees, and records of protected and priority species within a 2km radius of the Site. The data was received on the 24th of November 2023.

A 7km radius search for European Designated Sites, including Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar's was undertaken using MAGIC (<http://www.natureonthemap.naturalengland.org.uk/>). Past and current EPS licences and GCN pond survey results within a 7km radius were searched for using MAGIC on the 1st of December 2023.

3.2 *Field Survey*

A Preliminary Ecological Appraisal was carried out by Duncan Sweeting LCG (Natural England Great Crested Newt Class Survey Licence WML-CL08; Natural England Bat Class Survey Licence WML-CL18, Natural England Barn Owl Survey Licence WML-CLS29) and Elizabeth Thurston (undergraduate, Natural England Barn Owl Survey Licence WML-CLS29) on the 14th of November 2023 in accordance with standard best practice methodology for Phase 1 Habitat Surveys set out by the JNCC (2010). Weather conditions during the survey were clear (0% cloud cover), very light breeze (Beaufort scale 1) and a temperature of 11°C, with good visibility. The Site was traversed slowly by the surveyor, mapping habitats, and making notes on dominant flora and fauna within the site. The survey was extended to identify the presence of invasive species and included an assessment of the potential for the habitats in and around the site to support protected species.

3.3 *Survey Limitations*

No survey limitations were noted.

¹ *The standard data search identifies designated sites including:- Ramsar; Special Areas of Conservation; Special Protection Areas; Sites of Special Scientific Interest; National Nature Reserves; Local Nature Reserves; County & Regionally Important Geological Sites; Ancient Woodland; and protected and priority species identified by the:- Wildlife & Countryside Act 1981 Schedules 1, 5 & 8; Conservation of Habitats & Species Regulations 2010 Schedules 2 & 3; Protection of Badgers Act 1992; Bonn Convention Appendix 1 & 2; Bern Convention Annex 1 & 2; Habitats Directive Annex 2, 4 & 5; NERC Act 2006 Section 41; UKBAP (both local and national); IUCN Red List species; Red & Amber Bird List; Nationally Scarce / Rare; Locally Scarce / Rare; and Veteran trees.*
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4. Results

The following section details the results of the desk study and field survey. Consideration has been given to species likely to be found in the habitats recorded on site and potential impacts to designated sites within the local area. Several protected species have been 'scoped out' of the report, as the Site was not considered suitable to support them. Species scoped out were water voles, otters, and dormice.

Maps illustrating the following data are included in Appendix IV.

4.1 *Data Search*

The data search showed records of protected species in the area, which could potentially occur on the Site. These are detailed within the relevant sections below (section 5).

4.2 *Designated Sites Data*

The data search produced the following results:

In regard to Local/National European site, there are two County Wildlife Sites Citations within 2km of the Site.

Within 10km of site there was one LNR and five SSSIs. There were no biosphere reserves, SAC, SPAs, AONB, NNR, or Ramsar sites, identified within 10km of the site.

These are:

County Wildlife Sites :

VALLEY FARM MEADOW – This grassland county wildlife supports a wide range of flowering plants, including a number of indicators of agriculturally unimproved meadows (Priority habitat) including bird's-foot-trefoil, pepper saxifrage, cowslip, meadow vetchling and of particular note a population of green-winged orchids. This species, which is a strong indicator of ancient unimproved grassland, is declining in Suffolk and is Near Threatened nationally.

RNR 203 – Boulder clay flora. This site is also a Roadside Nature Reserve.

Local nature reserves:

THE PENNINGS, EYE - The Pennings Nature Reserve is along the River Dove. Most of the site is managed as a 'hay meadow' and in the summer months there are abundant flowers and insects to be seen. A small pond has been recently restored. Kingfishers, [REDACTED] and water vole have been spotted along the River Dove.

Sites of special scientific interest:

MICKFIELD MEADOW – consists of a small meadow managed on traditional lines which supports a species-rich unimproved neutral grassland flora of a type formerly widespread in Suffolk before the advent of modern farming methods. There is a good variety of grasses and herbs, including Fritillaries *Fritillaria meleagris*

MAJOR FARM, BRAISEWORTH - Major Farm Meadow is damp and species-rich, one of the few remaining unimproved hay meadows in Suffolk. The meadow is shallow-sloping, on boulder clay of low soil fertility, and characterised by an abundance of molehills.

FOX FRITILLARY MEADOW, FRAMSDEN - This site consists of a small unimproved species-rich meadow situated in a valley bottom on heavy alluvial soils. The meadow supports the largest and best-known population of Snakes-head Fritillary *Fritillaria meleagris* in East Anglia, a plant which is rare and which has a limited national distribution.

GYPSY CAMP MEADOWS - Gypsy Camp Meadows, representing one of the few remaining wet meadow sites in Suffolk, consists of a large and a smaller species rich wet meadow, situated on poorly drained Suffolk boulder-clay. The site supports several community types, ranging from base-rich marsh with Sharp-flowered Rush *Juncus acutiflorus*, Marsh Marigold *Caltha palustris* and Carnation Sedge *Carex panicea*, with Lesser Pond Sedge *C. acutiformis* and Marsh Arrow-grass *Triglochin palustris* to a wetter alluvial meadow type with Floating Sweet-grass *Glyceria fluitans*, Reed Canary-grass *Phalaris arundinacea* and Hairy Sedge *C. hirta*. A system of drainage ditches runs through the site and adds further diversity to the plant communities present.

HOXNE BRICK PIT - Hoxne Brick Pit is a world-famous geological site. Research dates back to the 18th Century, when John Frere recognised that flint implements from here had been fashioned by early man. Detailed description of the sediments has demonstrated that interglacial lacustrine deposits here occupy a basin in the chalky till and are in turn overlain by fluvial deposits penetrated by ice-wedge casts. The lacustrine deposits, the type deposits of the Hoxnian Interglacial, have been shown by pollen analysis to cover the 'Anglian' late glacial – early Hoxnian (Holl) interval. The upper series of largely fluvial deposits contain abundant vertebrate material attributable to late Hoxnian and Wolstonian Stages. Finds include fishes, voles, Norway lemming, extinct beaver, horse, several deer and a macaque. Sparse finds have also been made in the organic lake deposits of Hoxnian, Zone Holl, age. Hoxne is undoubtedly one of the most important Pleistocene sites in Britain.

4.3 MAGIC Map Data

Table 1: MAGIC map system EPS licence applications within a 7km radius (see map in Appendix IV)

EPS licence number	Species on the licence	Damage/ destruction of breeding site	Damage/ destruction of a resting place	Grid Reference	Nearest Location
2016-24657-EPS-MIT	GCN	N	N	TM17106540	Aspall
EPSM2013-6802	CPIP, BLE	N	Y	TM15317664	Oakley
2016-24657-EPS-MIT-1	GCN	N	Y	TM17106540	Aspall
2017-31950-EPS-MIT	CPIP	N	Y	TM16107684	Oakley
2016-24657-EPS-MIT-2	GCN	N	Y	TM17106540	Aspall
2018-34097-EPS-MIT	CPIP, SPIP, BLE	N	Y	TM19507328	Horham
2016-24657-EPS-MIT-3	GCN	N	Y	TM17106540	Aspall
2019-39772-EPS-MIT	GCN	N	Y	TM17196520	Aspall
2019-43068-EPS-BDX	SPIP	Y	Y	TM14387402	Eye
2020-45636-EPS-MIT	CPIP, SPIP, BLE	N	Y	TM17377631	Hoxne
2015-18425-EPS-MIT	SPIP	N	Y	TM21396803	Bedfield
EPSM2013-5975	GCN	N	Y	TM17106536	Aspall
EPSM2011-2999	CPIP, SPIP, BLE	N	Y	TM14606809	Thorndon

The MAGIC data search returned 13 records of past and current EPS licences 6 were for great crested newts, and 7 were for bats within a 7km radius. Including common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), and brown long-eared (*Plecotus auritus*). The nearest record to site was a great crested newt pond survey between 2017 and 2019 that found GCN to be absent. This was 0.7km to the east of site. There were 13 GCN class licence returns at 6 locations. There were 10 GCN pond surveys between 2017 and 2019 found in a 7km radius, only one of these had GCN present.

Table 2: SBIS Ancient, notable. and veteran trees within a 2 km radius of the Site.

Species	Distance from site (km)
Pedunculate Oak (<i>Quercus robur</i>) DARK GREEN	1km
Pedunculate Oak (<i>Quercus robur</i>)	1.1km
Pedunculate Oak (<i>Quercus robur</i>)	1.2km
Pedunculate Oak (<i>Quercus robur</i>)	1.9km
Pedunculate Oak (<i>Quercus robur</i>)	1.5km

Pedunculate Oak (<i>Quercus robur</i>)	1.85km
Beech (<i>Fagus sylvatica</i>) YELLOW	1.7km
Yew (<i>Taxus baccata</i>) PINK	1.4km
Ash (<i>Fraxinus excelsior</i>) BLUE	0.1km
Ash (<i>Fraxinus excelsior</i>)	0.7km

Ancient trees, due to decay and biological damage from age, typically have more natural features (such as welds, trunk cavities, hollows, rot holes, bark crevices, cracks, fissures, and woodpecker holes) that could provide highly preferable roosting opportunities for bats. There were ten records of ancient or notable trees, seven of which were more than 1km away from the site.

4.4 Field Survey Results

The site consisted of short-mown amenity grassland, hardstanding in the form of pea shingle and concrete, and two buildings. One of which being a converted barn, now a residential dwelling. And the other is a car port adjacent to the converted barn.

Directly adjacent to site there was another residential dwelling with related hardstanding. The site didn't contain any substantial areas of vegetation, due to the management of the amenity grassland. Although, there were various potted ornamental flower species that were located surrounding the residential building (for a full species list see appendix III). The surrounding area had arable fields to the east and south, scattered trees to the north and more amenity grassland to the west.

More details and target notes can be found in appendix I and II.

The greatest diversity of plant species was found in adjacent habitat. As small areas of scrub and hedgerows could be found to the south and east of the site of proposed development. A map showing the habitat types on Site can be seen in Appendix IV.

5. Protected and Priority Species Within the Site

Flora

The desk study highlighted several species of rare plants have been previously recorded within 2km of the site, such as Stinking Chamomile (*Anthemis cotula*), Chicory (*Cichorium intybus*), Dwarf Spurge (*Euphorbia exigua*), and Sulphur Clover (*Trifolium ochroleucon*). Which are all listed as 'Vulnerable' on the England Red List. Multiple orchid species were highlighted within the search including Pyramidal Orchid (*Anacamptis pyramidalis*), Green-winged Orchid (*Anacamptis morio*), Common-spotted Orchid (*Dactylorhiza fuchsii*), and Bee Orchid (*Ophrys apifera*).

No uncommon, rare, or protected plant species were recorded during the survey.

Bats

The site was checked for signs of bats which included, urine stains, droppings, cracks and crevices with smooth rubbing or stain marks, feeding signs or living or dead animals. Any potential roost features were noted and are discussed below.

There were no mature trees identified on site, however there were two buildings that may provide potential roosting locations. Both buildings were inspected and the potential for bats to be using them was considered low, as the roofing and roof spaces were well-sealed. Both buildings consisted of peg-tile roofs, with good condition timber cladding, and red-brick bases. The car port loft cavity was sealed with netting, and there was no loft cavity in the converted barn. No signs of bats or birds was found in either the converted barn or car port.

The SBIS data search returned 42 records of bats within 2km of the Site including common pipistrelle, soprano pipistrelle, brown long-eared bat, western barbastelle, serotine, Daubenton's bat, natterer's bat, and noctule.

Fungi

No records of fungi were listed in the data search, and no rare fungi were found on site.

Great Crested Newts

There were few habitats on site with low potential to support amphibians, including great crested newts (GCN) (*Triturus cristatus*), during their terrestrial phase. There were four ponds within 250m of the site boundary, which could provide suitable habitat to support breeding GCN. The majority of site was amenity grassland or pea shingle however, with negligible habitat for GCN.

There were four ponds present within a 250m radius of site:

Pond 1 – Located approx. 50m to the north of site and 310m². A HSI was conducted (results in table below). The waterbody was surrounded by trees and tall scrub creating shading over majority of the pond.

Pond 2 – Located approx. 80 m to the north-west of site and 85 m². No access was available for the survey.

Pond 3 – Located approx. 40 m to the west of site and 670 m². A HSI was conducted (results in table below).

Pond 4 – Located approx. 200 m to the west of site and 55 m². No access was available for the survey.

Table 3: GCN HSI Calculator. Based on ARGUK advice note 5 - Great Crested Newt Habitat Suitability Index

GCN HSI Calculator				
	Pond Name	Example	Pond 1	Pond 3
	Grid Ref	SK123456	TM16907023	TM16847021
SI No	SI Description	SI Value	SI Value	SI Value
1	Geographic location	1.00	1	1
2	Pond area	0.50	0.6	1
3	Pond permanence	0.90	0.9	0.9
4	Water quality	1.00	1	0.67
5	Shade	1.00	0.6	1
6	Water fowl effect	1.00	1	1
7	Fish presence	1.00	0.67	1
8	Pond Density	0.65	1	1
9	Terrestrial habitat	1.00	0.33	0.33
10	Macrophyte cover	0.90	0.6	0.4
HSI Score		0.88	0.73	0.78
Pond suitability (see below)		Excellent	Good	Good

Table 4: The categorisation of the HSI score, is as follows:

HSI Score	Pond Suitability
< 0.50	Poor
0.50 - 0.59	Below average
0.60 - 0.69	Average
0.70 - 0.79	Good
> 0.80	Excellent

GCN Habitat Suitability Index (HSIs) was conducted for two of the four ponds in the area. Pond 1 came back with a score of 0.73 and had a pond suitability of 'Good'. Pond 3 came back with a score of 0.78 and also had a pond suitability of 'Good'.

There were no records of GCN returned in the SBIS data search. The site provided negligible habitat for GCN during terrestrial phases, as there were poor foraging and sheltering opportunities located on site due to majority of the construction area being amenity grassland or pea shingle. While the ponds within 250m of the site could provide suitable breeding opportunities and habitat, the lack of terrestrial habitat make them unlikely to be present onsite.

Hedgehogs

The Site was considered unsuitable for hedgehogs, as it did not have foraging or hibernation opportunities, such as shrubs, hedgerows, or woodland. Much of the site consisted of maintained, low-cut amenity grassland, with little to no vegetation otherwise. Adjacent habitats including hedgerows and arable land may provide some opportunities for hedgehogs, however this habitat is still sub-optimal. The data search returned 26 records of hedgehogs within 2km of the Site.

Reptiles

The habitat onsite was largely unsuitable for foraging reptiles, with primarily short amenity grassland and hardstanding habitat.

There was no evidence of reptiles on the site, no droppings, sloughs, or reptiles were found.

There were two records of reptiles within the 2km SBIS data search, both records were of grass snakes. With the closest record being 420m to the north of site.

Birds

The potential for nesting birds to be using the site was low, as there was minimal scrub, and no mature trees located within the site boundaries. Adjacent habitat had the potential to support several nesting birds. With multiple mature trees to the south-east, as well as along a section of hardstanding access to the west of the residential building. For a list of species seen during the survey see appendix III.

For a list of bird species of conservation concern returned in the SBIS data search, please see Appendix V

Invertebrates

Vegetation to support invertebrates was restricted to potted ornamental plants surrounding the converted barn, as well as a small section of scrub to the south, that had habitat with the potential to support small assemblages of common invertebrates. Rare/protected terrestrial invertebrates on site was negligible. No rare invertebrates or habitats likely to support rare invertebrates were found onsite, and further invertebrate surveys are not considered necessary.

The desk study highlighted one invertebrate that has been previously recorded within 2km of the Site, which was a record of a Stag Beetle (*Lucanus cervus*) from 2017. Stag beetles are a section 41 and UK BAP species.

Other Protected Species

In regard to other protected species, there was one record of Water Vole (*Arvicola amphibius*), nine records of Brown Hare (*Lepus europaeus*), two records of Eurasian Otter (*Lutra lutra*), and one record of Harvest Mouse (*Micromys minutus*) returned within the data search. Habitats onsite are unsuitable or sub-optimal for most of these species, although the habitats on site and in adjacent areas could be suitable for brown hares.

6. Potential Impacts and Obligatory Recommendations

6.1 *Statutory Designated Areas*

The impact of proposed activities on Sites of Special Scientific Interest (SSSIs) are assessed using Impact Risk Zones (IRZs), which establish buffer zones around each site which reflect the particular sensitivities of designated sites and indicate the types of development proposal which could potentially have adverse impacts. If the developed is assessed as having a “likely significant effect” any European statutory designated area, then the project will require a HRA (Habitat Risk Assessment) to be undertaken as stated in The Conservation of Habitats and Species Regulations 2010 (as amended).

The Site falls within the Impact Risk Zone (IRZ) of multiple SSSI, however as the proposal is a small-scale development and it will not include the creation of over 50 building units, the risk of impact to designated sites is negligible and therefore is unlikely to require a HRA or other pre-development consultation with Natural England regarding likely impacts on designated areas.

6.2 *Flora and Habitats*

The proposed development includes the development and implementation of a recreational pool. The damage to existing habitats will be low and there are minimal existing niches to be lost with the construction area, as the construction area is primarily short-mown amenity grassland. Areas of vegetation that will be removed is limited to a section of amenity grassland. This removal would not have a significant impact to local populations. And no rare or protected plants were seen onsite during the survey.

The Site does not contain biodiversity priority habitats and was unsuitable for supporting rare species highlighted within the data search. **Therefore, further botanical survey is not considered necessary.**

6.3 *Protected Species*

No further survey is necessary; however, as adjacent habitats provide suitable foraging habitat for smaller mammals, and hedgehogs have been recorded in the local area, construction works should have implemented several precautionary measures, including the following:

- Safe storage of materials that may harm animals; and
- If external lighting is to be used, lights should be set on short timers to avoid disturbing nocturnal animals using the Site and immediate surrounding area.
- Excavations to be covered to prevent the entrapment of small mammals and hedgehogs that could be using the site.

Bats

Structures onsite assessed for roost suitability included both of the buildings, including a converted barn and car port.

On site there was minimal foraging and roosting habitats for bats in the form of amenity grassland. In adjacent habitats there are more potential roosting and foraging opportunities, as mature trees with potential roosting features were identified. And the four ponds within 250m of the site boundary provide more foraging opportunities. However, adjacent habitats didn't include habitats such as deciduous woodland or lowland wetlands.

Both buildings identified on site were inspected and the potential for bats to be using them was considered low. Both buildings consisted of peg-tile roofs, with good condition timber cladding, and red-brick bases. The car port loft cavity was sealed with netting, and there was no loft cavity in the converted barn. No signs of bats or birds was found in either the converted barn or car port.

While habitats onsite had no potential for foraging bats, adjacent hedgerows and mature trees could support roosting and foraging bats. Therefore, sensitive lighting is recommended throughout the development and should follow guidance provided by the Bat Conservation Trust (Bats and Artificial Lighting at Night, 2023), to ensure foraging and commuting bats using adjacent habitats are not negatively impacted. Lighting measures should also be applied to temporary security lighting used during the construction phase. This could include low pressure sodium lamps, with hoods, cowls or shields, to prevent light spillage. More detailed advice can be provided from a suitably experienced bat ecologist.

No further bat surveys are considered necessary, as the buildings are not being impacted by the proposed works, and habitat that is to be removed is of low ecological importance and will not affect local bat populations.

Birds

A number of species with the potential to nest within adjacent habitats were highlighted within the desk study (see Appendices III and V). These included BoCC red listed and section 41 species.

As the proposal does not include the clearance of any vegetation or demolition/stripping of buildings that may support nesting birds, no further bird surveys are considered necessary.

Great Crested Newts

There were no SBIS records of GCN within 2km, and 6 EPS licences for great crested newts, 13 GCN class licence returns at 6 locations. There were 10 GCN pond surveys between 2017 and 2019 found in a 7km radius, of these only one had GCN present.

The site had very low potential for GCN in their terrestrial phase due to the site lacking vegetation cover. The ponds in adjacent habitat had the potential to support breeding GCN, however they are unlikely to be using the amenity grassland on site for foraging or commuting. **Therefore, no further GCN surveys are considered necessary.**

However, as they could potentially be on site temporarily due to proximity of ponds, **a Risk Avoidance Method Statement (RAMS) should be implemented and followed, to prevent harm to individuals.**

Hedgehogs

Further surveys are not considered necessary, however, as there are nearby records of this species, and small areas of habitats adjacent to the site that were suitable, any potential nesting habitat (discarded building materials) should be removed outside the hibernation period (which is November to March) or under supervision of an ecologist. In addition, the construction should follow recommendations set out for badgers, to minimise the risk of harm to foraging hedgehogs.

Any fencing that may be added should allow the movement of hedgehogs throughout the Site post development.

Reptiles

The project will not include the loss of suitable reptile habitat – sheltering and hibernation opportunities. It was considered unlikely that reptiles would use these habitats onsite for sheltering or hibernation, **and so no further survey is required.**

Invertebrates

The Site contained little habitat for small assemblages of common invertebrates and was not considered suitable for supporting the rare/protected species highlighted within the desk study. **Therefore, further invertebrate surveys are not considered necessary.**

Other Protected Species

No further survey is required, as the habitat types and overall size of each habitat would be unlikely to significantly impacted any other protected species.

7. Enhancement recommendations

The Natural Environment and Rural Communities Act 2006 (NERC), Section 40, established that all public bodies have a duty to conserve, restore, or otherwise enhance a population of a particular species or habitat:

Section 40 (A1)²

“For the purposes of this section “the general biodiversity objective” is the conservation and enhancement of biodiversity in England through the exercise of functions in relation to England.”

Section 40 (1)

“A public authority which has any functions exercisable in relation to England must from time to time consider what action the authority can properly take, consistently with the proper exercise of its functions, to further the general biodiversity objective.”

Section 40 (3)

“The action which may be taken by the authority to further the general biodiversity objective includes, in particular, action taken for the purpose of—

(a) conserving, restoring or otherwise enhancing a population of a particular species, and

(b) conserving, restoring or otherwise enhancing a particular type of habitat.”

Therefore, enhancement opportunities are encouraged in order to change the overall net biodiversity impact of the development from minor-adverse neutral to neutral / minor positive.

Bats

A bat box, such as Eco Kent bat boxes and woodstone general purpose bat boxes (or similar) would increase roosting opportunities for bats within the Site, as bats could be using adjacent hedgerows to forage. Exact models and locations should be determined by a suitably experienced ecologist.

Birds

Bird boxes are highly advised, such as Robin FSC Nest Box or WoodStone Seville Box erected on boundary trees in appropriate locations would provide additional nesting opportunities for local bird populations. A Swift (*Apus apus*) or Swallow (*Hirundo rustica*) box placed on the boundary buildings to the south-east of the site could increase nesting opportunities. A barn owl box is also present on site, which if cleared out and made usable, could also provide further nesting opportunities for owls in the area.

² This includes recent amendments to the Act under the Environment Act 2021, which extended the definition of general biodiversity objective to include biodiversity enhancement as opposed to solely biodiversity conservation.

Precise locations of bird boxes should be decided by a suitably experienced ecologist at the time of erection to ensure an optimal situation and reduce the effect of changing environmental conditions at the Site in the meantime.

Hedgehogs and other small mammals

No evidence of small mammals including hedgehogs was found on site. Although some habitats onsite and adjacent habitats had the potential to support these species. The development will have a negligible impact on these habitats therefore no further enhancements are recommended for these species.

Amphibians

No signs of amphibians were found during the survey. However, habitat suitability assessments suggest that the four ponds within 250m of the site could support GCN and other amphibians. The large area of amenity grassland on site provides negligible habitat for these species. Therefore, the implementation of woodpiles within the areas of scrub/tall ruderal on adjacent owned land could benefit any amphibian species using/breeding in nearby ponds, by increasing the amount of quality terrestrial habitat available to them.

Other protected species

Rare and/or protected invertebrates, reptiles and mammals were considered unlikely to be present onsite, and no further enhancement is necessary.

8. Conclusions

The preliminary ecological appraisal found the Site to contain minimal habitats suitable for supporting protected species – namely birds. The survey revealed potential for bats and birds in mature trees and hedgerows found adjacent to the site. Habitats had negligible potential to support small mammals such as hedgehogs, and ponds adjacent to site had potential to support breeding great crested newts. However, habitat for GCN in their terrestrial phase was negligible within the construction area and low in directly adjacent habitats.

The following recommendations are made to minimise the risk of harm to individual animals:

Sensitive lighting measures for bats, and security lighting to be set on short timers to avoid disturbing nocturnal animals.

Covering of excavations and/or provision of exit ramps and safe storage of materials that may harm animals is recommended during works to prevent harm to mammals.

Recommendation for precautionary working methods in the form of Risk Avoidance Measures (RAMS) should be followed during works for **great crested newts**.

A toolbox talk should be given by a suitably trained and licenced ecologist to all workers on site prior to any works commencing.

It is highly unlikely that the proposed development would cause a significant long or short-term impact to the conservation status of possible protected species in the area or to the conservation sites in the surrounding area if these measures are followed, but sensitive planning may increase species because of the habitat enhancements.

Any short-term impacts to species populations or individuals would have been minimised through the incorporation of the above recommendation prior to, and during works.

Biodiversity Enhancement Strategy (B.E.S). (Post construction)

Enhancement features, such as bat boxes (such as Eco Kent bat boxes and bat tubes) and bird boxes, could be incorporated into the final designs and therefore provide additional breeding, and sheltering opportunities for a range of wildlife.

Enhancements to include:

Bird and Bat boxes. At least one bat box, one bird box suitable for Tit species and one swallow/swift cup to be mounted on boundary trees or buildings to the south-east. The positions of these boxes to be decided by a suitable trained ecologist prior to placement. See Appendix VIII: Enhancement and mitigation examples design for examples. The barn owl box adjacent to site is also advised to be cleaned out and trees managed to reinstate suitable access for barn owls.

Amphibians. It would be recommended as part of this enhancement to include the implementation of structures such a wood pile, within areas of scrub nearby to increase the amount of terrestrial habitat available. Particularly for amphibians using the four ponds to the north and west of the site.

The specifics of the clearance of the site with regard to amphibians are as follows:

Any debris and materials arising from the proposed construction should be stored in skips and/or on pallets to prevent creating refuge sites for reptiles or amphibians.

The RAMS (appendix 1 above) should be followed throughout the development process.

If a great crested newt is discovered at any stage of the development, work should cease immediately, and an ecologist should be contacted for further advice.

Small mammals including hedgehogs. Access to the pool by animals should be blocked to prevent animals drowning. Therefore, any fences erected directly around the pool do not have to allow for the movement of small mammals however, other fences on site should.

These fences should include a gap of 150mm long by 100mm high at some point in the base of each run of fencing to enable terrestrial vertebrates, including hedgehogs, to move through the plot and prevent entrapment.

The specifics of the clearance of the site with regard to small mammals are as follows:

Any debris and materials arising from the proposed construction should be stored in skips and/or on pallets to prevent creating refuge sites for small mammals.

Clearance of any debris or waste should be done sensitively with consideration to disturbance of hedgehogs.

Excavations required for the development should ensure that exit ramps are used, or excavations are covered when work is not being undertaken. To prevent the entrapment of small mammals.

Precautionary mitigation.

To promote best practice and avoid the risk of causing injury, harm, and disruption to small mammals, amphibians and reptiles during the construction process a toolbox talk should be given and made available to all contractors.

9. Validation

Table 5: Validity duration of the data.

Information Source	Date Undertaken	Valid Until	Comments
PEA	November 2023	November 2025 (2 years)	No further surveys will be required – as the development will not affect any areas of high ecological value. And protected species are considered unlikely to be using the site. However, RAMS will need to be adhered to throughout development to ensure amphibians are protected from possible harm during works.

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<https://www.gov.uk/government/publications/great-crested-newts-apply-for-a-mitigation-licence>

11. Appendices

Appendix I: Table 6 target notes

Photos	Target Notes
 <p data-bbox="459 770 480 801">1</p>	<p data-bbox="826 405 1086 436">Features of the site</p> <p data-bbox="826 510 1449 584">Target note 1 shows a small section of planted vegetation to the south of the residential building.</p>
 <p data-bbox="459 1211 480 1243">2</p>	<p data-bbox="826 913 1449 1010">Target note 2 shows a cavity in a boundary tree in adjacent habitat. Which may provide sheltering opportunities for birds, bats and small mammals.</p>
 <p data-bbox="459 1644 480 1675">3</p>	<p data-bbox="826 1368 1449 1464">Target note 3 shows a burrow found on the large section of amenity grassland to the south of the site boundary. Likely a Bank Vole or Field Vole.</p>

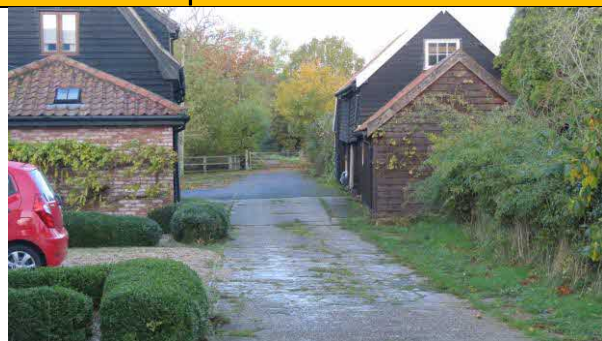


4

Target note 4 shows the condition of the loft space of the car port on site, sealed with netting.

Appendix II: Site Photos

Table 7: Site photos



Concrete access to the site to the west, as well as adjacent residential buildings.



Main construction area on site, showing the short-mown amenity grassland. On the south side of the residential building.



View of the southern and eastern side of the converted barn, now a residential abode. Various potted ornamental plants can be seen surrounding the building.



Southern side of the car port that is adjacent to the converted barn. Picture also shows more amenity grassland that borders the site.

Appendix III: Species Lists

Table 8: Plants

Species on/adjacent to site	
Latin name	Common name/s
<i>Quercus robur</i>	English oak
<i>Glechoma hederacea</i>	Ground ivy
<i>Sambucus nigra</i>	Elder
<i>Urtica dioica</i>	Common nettle
<i>Rubus fruticosus</i>	Brambles
<i>Hedera helix</i>	Common ivy
<i>Fraxinus excelsior</i>	Ash
<i>Crataegus monogyna</i>	Hawthorn
<i>Acer campestre</i>	Field maple
<i>Plantago lanceolata</i>	Narrow plantain
<i>Taraxacum officinale</i>	Common dandelion
<i>Trifolium repens</i>	White clover
<i>Acnillea nobilis</i>	Noble yarrow
<i>Ranunculus spp</i>	Buttercup spp.
<i>Salix babylonica</i>	Weeping willow

Table 9: Birds

Species on/adjacent to site	
Latin name	Common name/s
<i>Columba palumbus</i>	Wood pigeon
<i>Picus viridis</i>	Green woodpecker
<i>Corvus corone</i>	Carrion crow
<i>Perdix perdix</i>	Grey partridge
<i>Anas platyrhynchos</i>	Mallard

Table 10: Mammals

Species adjacent to site	
Latin name	Common name/s
<i>Capreolus capreolus</i>	Roe deer
<i>Oryctolagus cuniculus</i>	Rabbit

Appendix IV: Figures

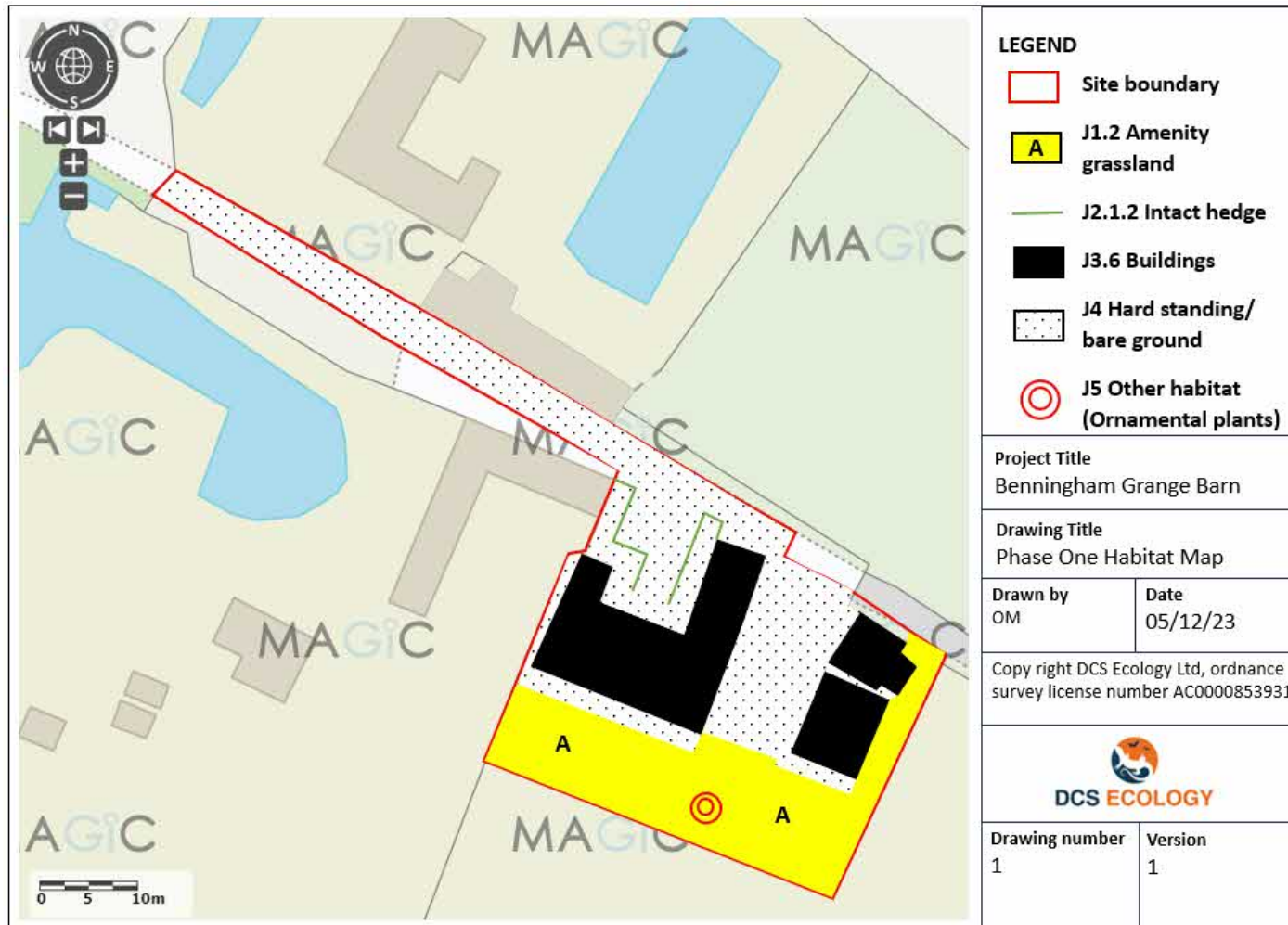


Figure 2: Phase 1 Habitat Map of Site (c) Crown Copyright under licence AC0000853931



Figure 3: Pond Great Crested Newt ponds within 250m. Based upon Ordnance Survey (c) Crown Copyright under licence A C0000853931

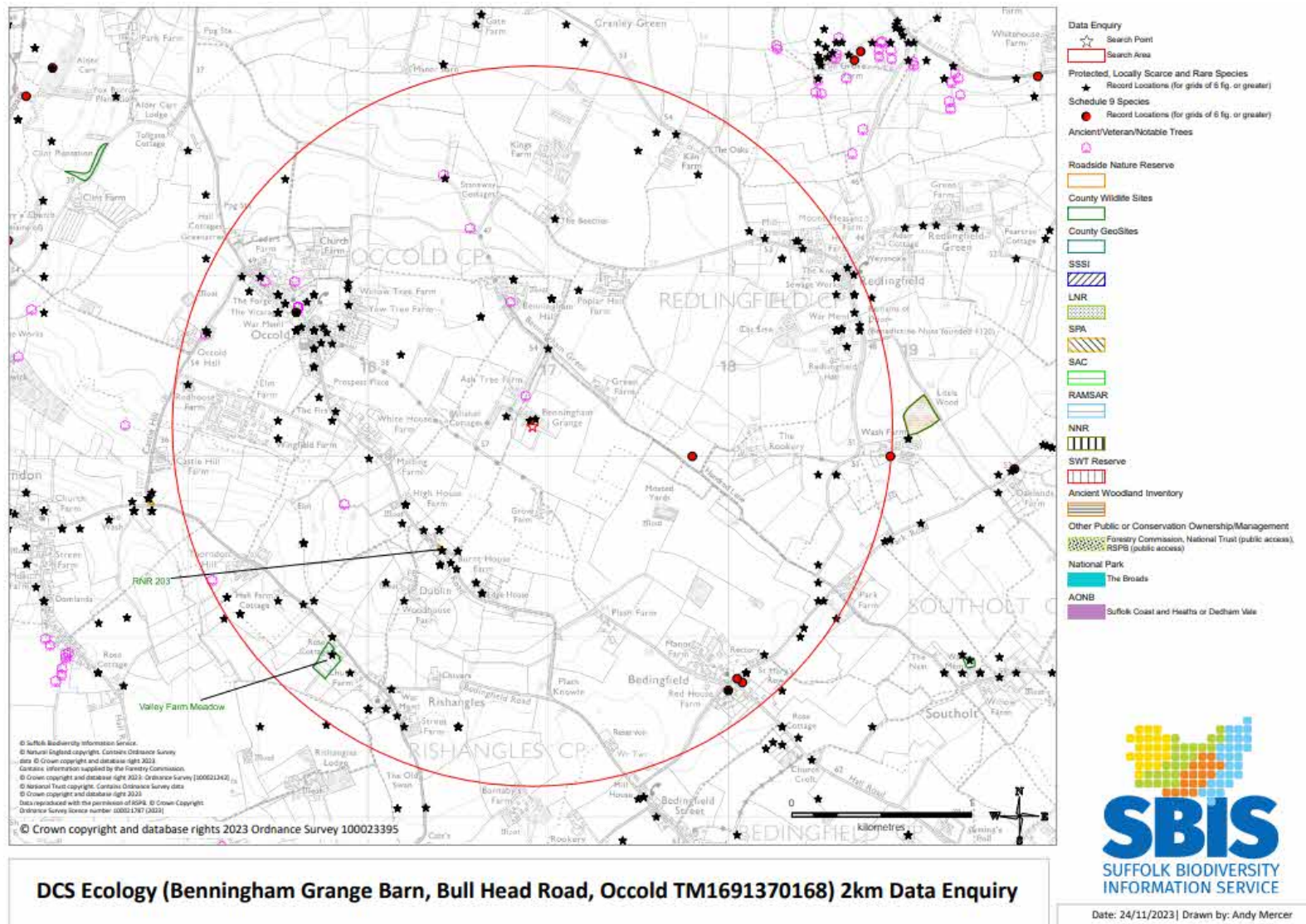


Figure 4: Protected species records, Statutory and Non-Statutory Designated Sites within 2km of the Site.

Benningham Grange Barn, Occold, Eye, IP23 7PJ

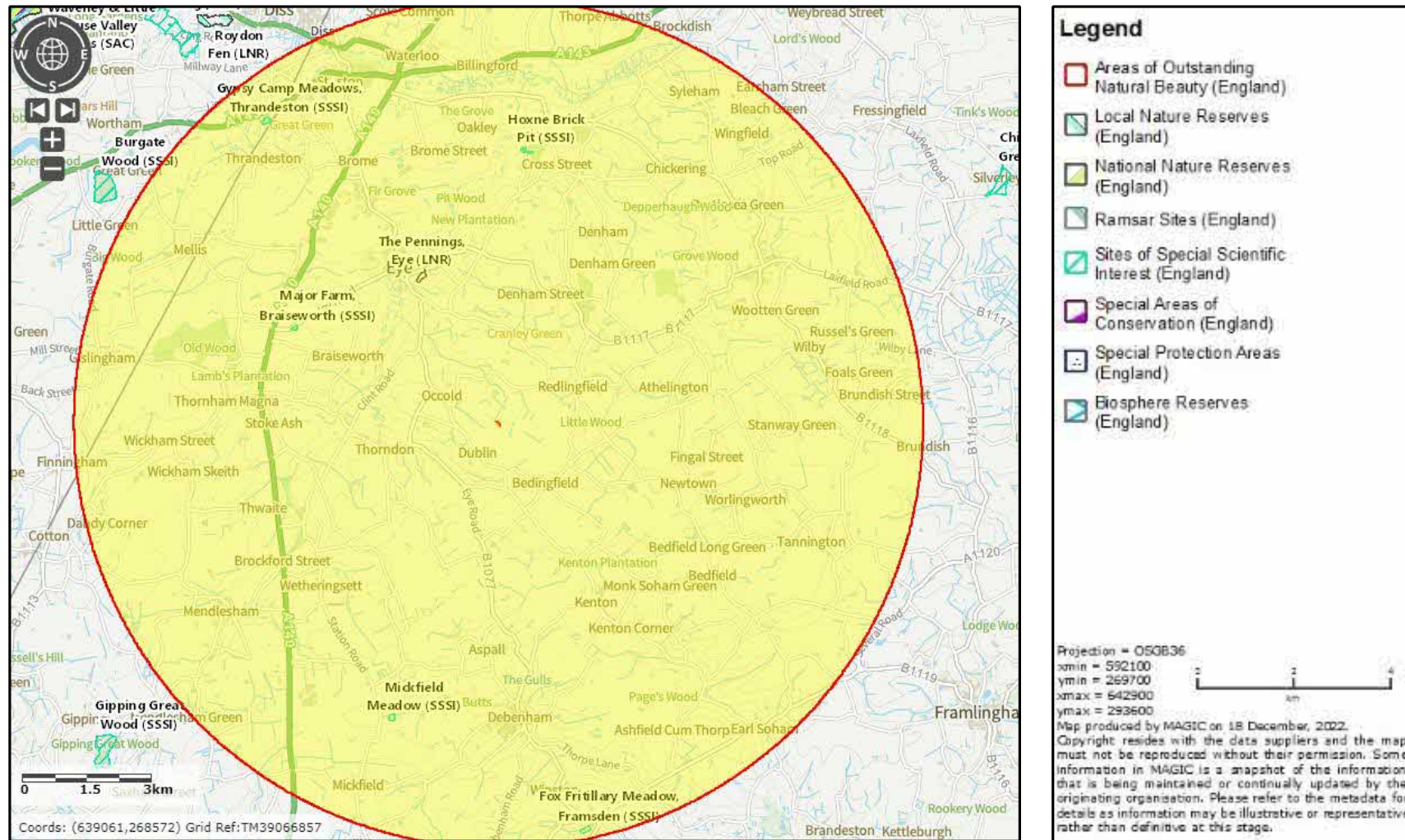


Figure 5: Statutory Conservation Sites within 10km of the Site. Based upon Ordnance Survey (c) Crown Copyright under licence A CD000853931

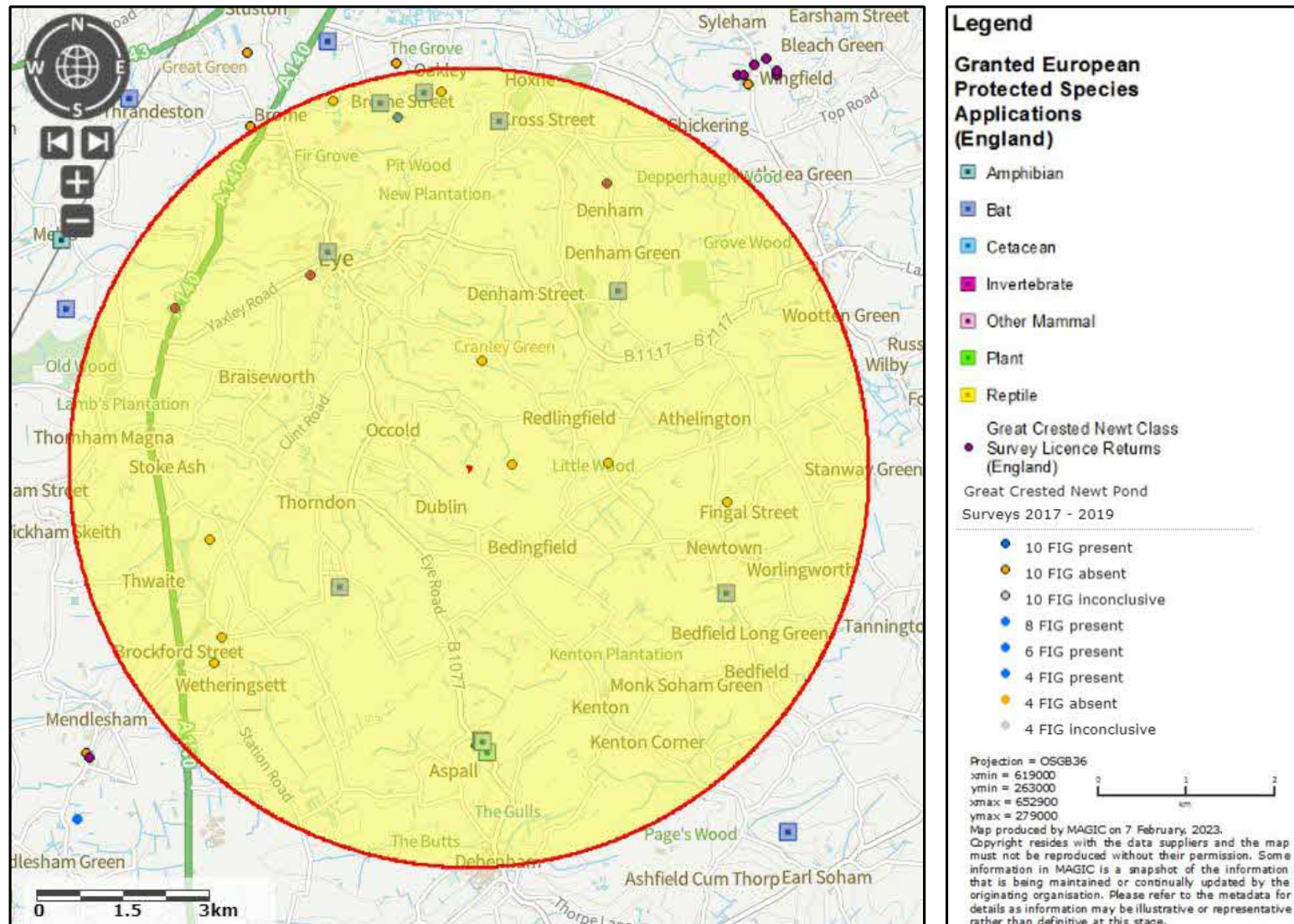


Figure 6: Protected species recorded on MAGIC within 7km of the Site. Based upon Ordnance Survey (c) Crown Copyright under licence A0000853931



Figure 7: Target notes map. Based upon Ordnance Survey (c) Crown Copyright under licence AC0000853931

Benningham Grange Barn, O cold, Eye, IP23 7PJ

Appendix V: Desk Study

Table 11: WCA Sch. 1, BoCC Red Listed and Priority (BAP) bird species records within 2km of the Site.

Species common name	Latin name	Status	Most Recent Record
Skylark	<i>Alauda arvensis</i>	BoCC Red, Sect.41, UKBAP	20 20
Swift	<i>Apus apus</i>	BoCC Red	201 9
Greenfinch	<i>Chloris chloris</i>	BoCC Red	20 15
Cuckoo	<i>Cuculus canorus</i>	BoCC Red, S41, UKBAP	20 08
House Martin	<i>Delichon urbicum</i>	BoCC Red	20 15
Yellow Hammer	<i>Emberiza citrinella</i>	BoCC Red, UKBAP; S41	20 15
Reed Bunting	<i>Emberiza schoeniclus</i>	UKBAP; S41	20 09
Herring Gull	<i>Larus argentatus</i>	BoCC Red, UKBAP	20 11
Linnet	<i>Linaria cannabina</i>	BoCC Red; UKBAP	20 15
Spotted flycatcher	<i>Muscicapa striata</i>	BoCC Red, UKBAP, S41	20 21
House Sparrow	<i>Passer domesticus</i>	BoCC Red, UKBAP, S41	20 16
Tree sparrow	<i>Passer montanus</i>	BoCC Red, S41, UKBAP	20 09
Grey Partridge	<i>Perdix perdix</i>	BoCC Red; S41, UKBAP	20 15
Dunnock	<i>Prunella modularis</i>	UKBAP	20 16
Woodcock	<i>Scolopax rusticola</i>	BoCC Red	20 09
Turtle dove	<i>Streptopelia turtur</i>	BoCC Red, UKBAP, S41	20 21
Starling	<i>Sternus vulgaris</i>	BoCC Red, UKBAP	20 16
Green Sandpiper	<i>Tringa ochropus</i>	WCA1i	20 11
Redwing	<i>Turdus iliacus</i>	WCA1i	20 15
Song thrush	<i>Turdus philomelos</i>	BoCC Red, UKBAP, S41	20 15

Fieldfare	<i>Turdus pilaris</i>	BoCC Red, WCA1i	2015
Mistle Thrush	<i>Turdus viscivorus</i>	BoCC Red	2010
Barn Owl	<i>Tyto alba</i>	WCA1i	2021
Lapwing	<i>Vanellus vanellus</i>	BoCC Red, UKBAP, S41	2010
Lesser Redpoll	<i>Acanthis cabaret</i>	S41, UKBAP	2015
Greylag Goose	<i>Anser anser</i>	WCA1ii	2011
Marsh Harrier	<i>Circus aeruginosus</i>	WCA1i	2008
Lesser -spotted Woodpecker	<i>Dryobates minor</i>	BoCC Red, UKBAP	2017
Hobby	<i>Falco subbuteo</i>	WCA1i	2008
Red Kite	<i>Milvus milvus</i>	WCA1i	2020
Bullfinch	<i>Pyrrhula pyrrhula</i>	UKBAP	2016
Ring Ouzel	<i>Turdus torquatus</i>	BoCC Red, S41, UKBAP	2016

Appendix VI: Relevant Protected Species Legislation

International and national legislation, and policy context.

EC Habitats Directive

In 1992 the then European Community adopted Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the Habitats Directive. The main aim of the Habitats Directive is to promote the maintenance of biodiversity by requiring member states to introduce protection for these habitats and species of European importance. The mechanism for protection is through the designation of Special Areas of Conservation (SACs), both for habitats and for certain species listed within Annex II. There are several species listed within Annex II of the Habitats Directive that are present within the UK; these include four lower plant species, nine higher plant species, six species of molluscs, six species of arthropods, eight species of fish, two species of amphibian, and nine species of mammal.

The Bern Convention

The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) came into force in 1982. The principal aims of the Convention are to ensure the conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix 3. To this end the Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1000 wild animal species.

Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention or CMS) was adopted in Bonn, Germany in 1979 and came into force in 1985. Contracting Parties work together to conserve migratory species and their habitats by providing strict protection for endangered migratory species (listed in Appendix 1 of the Convention), concluding multilateral agreements for the conservation and management of migratory species which require or would benefit from international cooperation (listed in Appendix 2 of the Convention), and by undertaking cooperative research activities.

Convention on Biological Diversity

The Convention on Biological Diversity (Biodiversity Convention or CBD) was adopted at the Earth Summit in Rio de Janeiro and entered into force in December 1993. It was the first treaty to provide a legal framework for biodiversity conservation. Contracting Parties are required to create and enforce national strategies and action plans to conserve, protect and enhance biological diversity.

Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) is the principal mechanism for the legislative protection of wildlife in Great Britain. However, it does not extend to Northern Ireland, the Channel Islands, or the Isle of Man. This legislation is how the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') and the European Union Directives on the Conservation of Wild Birds (79/409/EEC) and Natural Habitats and Wild Fauna and Flora (92/43/EEC) are implemented in Great Britain.

Conservation of Habitats and Species Regulations 2010 (as amended)

In the UK the Council Directive 92/43/EEC has been transposed into national laws by means of the Conservation (Natural Habitats, & c.) Regulations 1994 (as amended), and the Regulations (Northern Ireland) 1995 (as amended). The Regulations came into force on 30 October 1994 and have been amended several times. Subsequently the Conservation of Habitats and Species Regulations 2010 was created which consolidates all the various amendments made to the 1994 Regulations in respect of England and Wales and is commonly known as the 'the Habitats Regulations'. In Scotland the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the 1994 Regulations. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats

Directive in relation to Northern Ireland. The Regulations contain five Parts and four Schedules and provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

Table 12: Relevant Protected Species Legislation

Species	Legislation	Protection
Bats	<ul style="list-style-type: none"> ▪ Conservation of Habitats and S Regulations (2010) (as amended) ▪ Wildlife and Countryside Act (WCA) (1981), Schedule 5 (as amended) ▪ Wild Mammals Act (1996) 	<p>It is an offence to:</p> <ul style="list-style-type: none"> ▪ Intentionally kill, injure or take any bat, ▪ Intentionally or recklessly disturb a bat, ▪ Intentionally or recklessly damage, destroy or obstruct access to a bat roost
Great Crested Newts	<ul style="list-style-type: none"> ▪ Conservation of Habitats and S Regulations (2010) (as amended) ▪ Wildlife and Countryside Act (WCA) (1981), Schedule 5 (as amended) 	<p>It is an offence to:</p> <ul style="list-style-type: none"> ▪ Intentionally kill, injure, or take a great crested newt, ▪ Intentionally or recklessly disturb a GCN, ▪ Intentionally or recklessly damage, destroy or obstruct access to any place used by a GCN for shelter or protection
Widespread Reptiles	<ul style="list-style-type: none"> ▪ Wildlife and Countryside Act (WCA) (1981), Schedule 5 (as amended) 	<p>It is an offence to:</p> <ul style="list-style-type: none"> ▪ Intentionally kill or injure a reptile. ▪ Sell, offer, or expose for sale, have in possession or transport for the purpose of sale any live or dead reptile or any part of, or anything derived from, a reptile.
Birds	<ul style="list-style-type: none"> ▪ Wildlife and Countryside Act (WCA) (1981) (as amended) 	<p>It is an offence to:</p> <ul style="list-style-type: none"> ▪ Intentionally kill, injure, or take any wild bird, ▪ Intentionally take, damage, or destroy nests in use or being built, ▪ Intentionally take, damage, or destroy eggs. <p>Species listed on Schedule 1 of the WCA (1981) are afforded additional protection, making it an offence to intentionally or recklessly disturb such species at, on or near an active nest.</p>

Appendix VII : Abbreviations

Table 13: List of abbreviations	
BAP	Biodiversity Action Plan
BCT	Bat Conservation Trust
BoCC	Birds of Conservation Concern
CHSR	Conservation of Habitats and Species Regulations 2017
CIEEM	Chartered Institute of Ecology and Environmental Management
CROW	The Countryside Rights of Way Act 2000
CWS	County Wildlife Site
ECoW	Ecological clerk of works
eDNA	Environmental DNA
EIA	Ecological Impact Assessment
EPS	European Protected Species
GCN	Great crested newt
HPI	Habitat of Principal Importance
HSI	Habitat Suitability Index
HRA	Habitat Regulations Assessment
JN CC	Joint Nature Conservation Committee
LNR	Local Nature Reserve
LPAs	Local Planning Authorities
MAGIC	Multi-Agency Geographic Information for the Countryside
NERC	Natural Environment and Rural Communities Act
NBIS	Norfolk Biodiversity Information Service
NE	Natural England
NERC	Natural Environment and Rural Communities Act 2006
NNR	National Nature Reserve
NPPF	The National Planning Policy Framework
PEA	Preliminary Ecological Appraisal
PRA	Preliminary Roost Assessment
PRF	Potential (bat) Roosting Feature
RAMs	Reasonable Avoidance Measures
SAC	Special Area of Conservation
SBAP	Suffolk Biodiversity Action Plan
SBIS	Suffolk Biodiversity Information Service
SPA	Special Protection Area
SSSI	Special Site of Scientific Interest
TAF	Temporary amphibian fencing
WCA	Wildlife and Countryside Act 1981 (as amended)
UKBAP	United Kingdom's Biodiversity Action Plan

Table 14: Abbreviations of bat species		
Abbreviations	Common name	Latin name
BARB	Barbastelle (bat)	<i>Barbastella barbastellus</i>
BLE	Brown long-eared (bat)	<i>Plecotus auritus</i>
CPIP	Common Pipistrelle bat	<i>Pipistrellus pipistrellus</i>
DAUB	Daubenton's bat	<i>Myotis daubentonii</i>
LEI	Lesser noctule / Leisler's bat	<i>Nyctalus leisleri</i>
NATT	Natterer's bat	<i>Myotis nattereri</i>
NOC	Common noctule	<i>Nyctalus noctule</i>
NPIP	Nathusius's pipistrelle	<i>Pipistrellus nathusii</i>
SERO	Serotine (bat)	<i>Eptesicus serotinus</i>
SPIP	Soprano pipistrelle (bat)	<i>Pipistrellus pygmaeus</i>

Appendix VIII : Enhancement and mitigation example designs.

Table 15: Compensation and enhancement Examples.	
	
Photo 1: Woodstone Seville Box 28-32mm Hole.	Photo 2: Woodstone multichambered bat box
	
Photo 3: Eco-Kent bat box	Photo 4: Swallow/Swift cup.