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## Ecology Report

### PROPOSED CLASS Q BARN CONVERSIONS Oak Tree Farm, Kenton, Suffolk

February 2022



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# Executive Summary

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of 3 barns and adjacent land at Oak Tree Farm, Kenton, Suffolk. A Class Q application is to be submitted to Mid Suffolk Council for the conversion of two former agricultural barns to residential dwellings. A third barn will be demolished as it is in such a poor condition that it could not be converted.

The site currently comprises 3 barns (B1 to B3) which are largely surrounded by hard standing with some adjacent spoil heaps and ruderal vegetation.

A brown long-eared (*P. auritus*) feeding perch was found in barn B1. A small number of Myotis/long-eared (*Plecotus* sp) bat droppings were found in barn B2 indicating a possible day/night roost. Subsequent bat emergence surveys confirmed the presence of day roosting common pipistrelle (*Pipistrellus pipistrellus*) within barn B2. Evidence of small passerine bird nesting activity exists in the barns, though no evidence was found of roosting barn owl (*Tyto alba*) (WCA1i).

The development will result in the destruction of the bat roosts, whilst site management and building works have the potential to impact nesting birds, small mammals such as hedgehog (*Erinaceus europaeus*), as well as small numbers of widespread amphibians and potentially grass snake (*Natrix helvetica*).

Recommendations are made to avoid wildlife offences and ecological impacts. Where impacts cannot be avoided, measures are proposed to mitigate remaining effects including timing of works, good working practices and proceeding under a Natural England European Protected Species Mitigation licence, with necessary compensation detailed. Biodiversity enhancements are proposed.

# 1 Introduction

## 1.1 BRIEF

MHE Consulting Ltd were instructed to undertake an ecological survey and assessment of 3 former agricultural barns (B1 to B3) and adjacent land at Oak Tree Farm, Kenton, Suffolk (TM 19304 64660; Figure 1). The report will inform a Class Q application to Mid Suffolk Council for the conversion of two barns (B1 and B2) into 2 dwellings; the third barn B3 will be demolished. The proposed converted barns B1 and B2 are referred to as Barn A and Barn B respectively on the architect's proposed drawings.

The ecological survey and this report are necessary to:

- Identify the existing ecological value of the site;
- Identify the need for further (e.g., protected species) surveys;
- Assess any potential adverse impacts of the proposed development on ecological features of the site or nearby designated sites;
- Make recommendations for mitigation (if required); and
- Identify opportunities for biodiversity enhancements and, consistent with national and local planning policy, net gains.

This report will be used to develop the proposals as necessary, and to form the basis for the submission of biodiversity information with any planning application. It reflects the site at the time of the survey and should be reviewed and revised as appropriate.

## 1.2 SITE LOCATION AND DESCRIPTION

The proposed development site is located off Debenham Road, Kenton (Figures 1 and 2) and comprises 3 former agricultural barns (Photos 1 to 5). Areas of hard standing, scrub, and ruderal vegetation (Photos 1 to 6) exist on site. Photos are provided within Appendix A1.

## 2 Planning policy and legislation

### 2.1 INTRODUCTION

This chapter summarises the key legislation and policies relevant to assessing the biodiversity impacts of the scheme upon habitats and species.

### 2.2 PLANNING POLICY

Class Q developments are undertaken under the General Permitted Development Order (GDPO). One of the considerations of Class Q is “whether the location or siting of the building makes it otherwise impractical or undesirable for the building to change from agricultural use to a dwelling house”. “Undesirable” includes works that would be “harmful or objectionable”, including those resulting in impacts upon designated sites, protected species and UK Priority habitats and species (under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)).

### 2.3 LEGISLATION

#### 2.3.1 *Environment Act 2021*

The Environment Act received royal assent in November 2021. The Act will set clear statutory targets for the recovery of the natural world in four priority areas: air quality, biodiversity, water and waste, and includes an important new target to reverse the decline in species abundance by the end of 2030. Of particular relevance to development planning will the requirement for all new development to deliver a quantified (10%) Biodiversity Net Gain.

#### 2.3.2 *Natural Environment and Rural Communities (NERC) Act 2006*

Section 40 places a duty on every public body in exercising its functions, to have regard to the purpose of conserving biodiversity; this includes restoring or enhancing populations or habitats. A key purpose of this duty is to embed consideration of biodiversity as an integral part of policy and public-sector decision making. *Species and habitats of principal importance* in this respect are those published under Section 41 (“S. 41”) of the NERC Act 2006.

#### 2.3.3 *Wildlife and Countryside Act 1981 (as amended)*

Rare and scarce habitats and species are afforded varying levels of protection under the Wildlife and Countryside Act 1981 (as amended) (hereafter “WCA 1981”). Some species and groups are afforded full protection (e.g. Schedule 1 bird species, bats), whilst others receive partial protection (e.g. widespread reptiles). Section 3.1 provides further detail relevant to this scheme. Species afforded legal protection are referred to by their relevant schedule (“Sch.”) within the act, i.e. “Sch. 1” (birds), “Sch. 5” (other animals), or “Sch. 8” (plants).

Invasive plant species such as Japanese knotweed (*Reynoutria japonica*) and giant hogweed (*Heracleum mantegazzanum*) are listed on Schedule 9 of the WCA 1981. It is an offence to plant or otherwise cause these species to grow in the wild and this includes the development of sites such that the plant colonises land owned by a third party.

#### 2.3.4 *The Countryside and Rights of Way (CROW) Act 2000*

The CROW Act 2000 strengthened and updated elements of the WCA 1981, and gave a statutory basis to biodiversity conservation, requiring government departments to have regard for biodiversity in carrying out its functions and to take positive steps to

further the conservation of listed habitats and species. It strengthened the protection of SSSIs and threatened species. Many of its provisions have been incorporated as amendments into the WCA 1981 and some have been superseded by the NERC Act 2006.

### 2.3.5

#### *The Conservation of Habitats and Species Regulations 2017*

The Conservation of Habitat and Species Regulations 2017 (hereafter referred to as the Habitat Regulations 2017) consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), and elements of the EU Wild Birds Directive, into national law. The 2017 Regulations provide for the designation and protection of 'European sites' (SPAs, and SACs), the protection of 'European Protected Species' ("EPS"), and the adaptation of planning and other controls for the protection of European Sites.

They have been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019, which continue the same provision for European protected species, licensing requirements, and protected areas after Brexit.

Under the Regulations, competent authorities i.e. any Minister, government department, public body, or person holding public office, have a general duty, in the exercise of any of their functions, to have regard to the relevant EC Directives.

### 2.3.6

#### *Protection of Badgers Act 1992*

The Protection of Badgers Act 1992 (hereafter "PBA 1992") consolidates and improves upon the previous Badgers Act 1973, Badgers Act 1991, and Badgers (Further Protection) Act 1991. Under the PBA 1992 (except when holding a licence to do so) it is illegal for a person to wilfully; kill, injure, take, possess, sell, or otherwise cruelly treat a badger. It is also illegal to dig out, damage, destroy, or obstruct entry to setts (including by use of dog(s)). Further information on offences, exceptions, and penalties are listed on the PBA 1992 on [legislation.gov.uk](https://legislation.gov.uk).

# 3 Methodology

## 3.1 INTRODUCTION

This report has been produced with reference to relevant guidance, most notably:

- Guidelines for Ecological Report Writing (CIEEM, 2017);
- Biodiversity – Code of Practice for Planning and Development (BS 42020:2013<sup>1</sup>);
- Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018); and
- Biodiversity Net Gain: good practice principles for development (CIRIA, CIEEM and IEMA, 2016).

The following sections summarise the approaches used to review existing data, and to undertake appropriate field surveys to scope and inform an Ecological Impact Assessment (EclA) for the scheme. Where further surveys are considered necessary, this is identified in section 5.

## 3.2 DESK SURVEY

The following data sources were consulted to assess the potential for the application site to support protected or notable habitats/species:

- Aerial photos, Ordnance Survey maps, and the MAGIC website (<http://magic.defra.gov.uk/>): These were used to identify habitat types including priority habitats, suitability for particular species/groups, and the locality of nationally and internationally designated sites;
- Natural England (NE) open source protected species and habitat survey data; and
- Historical biological records: species and locally designated site records within 2km of the site were provided by the Suffolk Biodiversity Information Service (SBIS).

From this exercise, it was concluded that the following legally protected species/groups may be present on the sites and/or land immediately adjacent:

- Amphibians including great crested newt (*Triturus cristatus*)<sup>2</sup>;
- Mammals including bats<sup>2</sup>;
- Breeding birds<sup>3</sup> including Red and Amber status<sup>4</sup> species; and
- S. 41<sup>5</sup> list species such as hedgehog (*Erinaceus europaeus*).

In the context of the setting and nature of the developments, the 'zone of influence' of the scheme is considered restricted to habitats on the sites and species within 250m of the site boundaries.

## 3.3 FIELD SURVEY

An initial site walkover was undertaken on the 29 September 2020 to 1) record habitats present; and 2) assess the value of the habitats present for protected and notable species. A list of vascular plants and a description of the vegetation was made, including the location and extent of any Schedule 9 (WCA 1981) plants. Photos of the habitats present, and any field signs are provided in Appendix A1.

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<sup>1</sup> BSI Standards publication BS 42020:2013 Biodiversity – Code of practice for planning and development.

<sup>2</sup> GCN and all species of bats receive full protection under the WCA 1981 and Habitats Regulations 2017.

<sup>3</sup> All wild birds, their nests and eggs are protected under the WCA 1981 (as amended), level of protection varies per species.

<sup>4</sup> The conservation statuses of UK bird species are listed within the Birds of Conservation Concern 5 (Stanbury *et al.*, 2021).

<sup>5</sup> S. 41 of the NERC Act 2006 lists 'habitats and species which are of principal importance for the conservation of biodiversity in England'.

### 3.3.1 *Habitats and vascular plants*

The site was walked with all distinct vegetation and habitat types, and any features of interest identified using the Phase 1 Habitat Survey methodology (JNCC, 2010). Care was taken to record as many species as possible.

### 3.3.2 *Amphibians and reptiles*

#### a) Amphibians

Though no ponds were present immediately adjacent to the barns proposed for conversion, a large pond (P1) is located to south-west and a section of the long linear pond (P2) is located within the red line boundary for the proposed barn B.

The terrestrial habitat suitability of the site was assessed with respect to refugia and foraging habitat based on the known habitat preferences of GCN and widespread amphibians such as common frog (*Rana temporaria*), smooth newt (*Lissotriton vulgaris*), and common toad (*Bufo bufo*).

#### b) Reptiles

Habitats on and around the application site were assessed with respect to the known foraging and refuge habitat preferences of widespread reptile species.

### 3.3.3 *Bats*

#### a) Building inspection

The existing buildings were assessed with regards to suitability for supporting roosting bats with reference to the NE Bat Mitigation Guidelines (Mitchell-Jones, 2004) and the Bat Conservation Trust (BCT) "Bat Surveys: Good Practice Guidelines, 3rd edition" (Collins, 2016).

#### b) Tree roost potential

Existing trees which may require removal were visually checked to assess their suitability for use by roosting bats using the following criteria:

1. All potential roosting cavities (e.g. natural cavities, rot holes, woodpecker holes, splits, peeling bark) were inspected from the ground, using binoculars where necessary;
2. All potential niches would be assigned a category according to Bat Conservation Trust (BCT) protocols (Collins, 2016). These categories are listed below:
  - High Suitability: Trees with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat;
  - Moderate Suitability: Trees with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions, and surrounding habitat but unlikely to support a roost of high conservation;
  - Low Suitability: A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential. However, the tree(s) are of a size and age that elevated surveys may result in features being found; or features which may have limited potential to support bats; and
  - Negligible Suitability: Trees with negligible bat roost potential.
3. Where potential niches existed, niches below 5m high were physically inspected, using ladders where appropriate. Any cavities with the potential to support roosting bats were inspected with a SeeSnake endoscope and/or a small LED torch as necessary;

4. All potential roosting niches were checked for the presence of bats (alive or dead), faecal staining, fur and/or scratch marks around the entrance and droppings within the cavities or attached to the trunk/bough below the entrance.

c) Foraging and commuting habitat

Consideration was given to the value of any potential foraging and commuting habitats (i.e., hedgerows, trees, streams, ponds, composting areas) on the application site.

d) Bat activity surveys

Emergence survey of the barns were undertaken (20/07/21 and 18/08/21) as per the following methodology:

- The emergence survey commenced 15 minutes prior to and for up to 1.5 hours after sunset to cover the main emergence period and when some bats may return;
- Bat activity such as bats leaving or returning to roost within buildings on site was recorded. In addition, commuting bats and foraging bats were recorded;
- Numbers and species of bats were recorded to determine the significance of any roosts identified;
- Ecologists used full spectrum Wildlife Acoustic Echo Meter Pro and Elekon Batlogger M full spectrum detectors;
- A FLIR Scion thermal scope was used to monitor the south and west elevation of barn B2 during the first survey.

3.3.4 *Nesting birds*

The value of the site was assessed in relation to nesting birds. This was supplemented with field records of birds seen or heard within the site, or nests observed.

3.3.5 *Badger*

The application site and adjacent habitats were surveyed for evidence of badger activity including setts, day beds, latrines, diggings/snuffle holes, paths/runs, scratching posts, hair, and footprints. Any potential sett found was then assessed for evidence of recent use by badger and classified as per current guidance (Scottish Badgers, 2018).

3.3.6 *S.41 list habitats and species*

The site was surveyed to determine the presence of any S. 41 habitats such as native species-rich hedgerows. The site's suitability for S. 41 list species such as hedgehog was assessed based on their habitat preferences.

3.3.7 *Non-native invasive plant species*

The site was inspected for Schedule 9 species such as Japanese knotweed and giant hogweed.

**3.4 SURVEY CONSTRAINTS**

Botanical surveys are typically best done in the late spring to early summer period. It is considered likely that no notable plant species were overlooked given the limited footprint and lack of typical botanically interesting habitat on site.

**3.5 SURVEYORS**

The initial site survey was undertaken by Christian Whiting BSc (Hons) MSc MCIEEM who has over 20 years' experience working as an ecologist. He holds Natural England (NE) survey licences for bats (2015-14745-CLS-CLS - Bat Survey Level 2), barn owl (CL29) and great crested newts (Class A licence 2015-17633-CLS-CLS). He is a Registered Consultant (Registration RC089) on NE's Bat Low Impact Class Licence

and is an agent under the Environment Agency's and IDB water vole (*Arvicola amphibius*) organisational and class licences respectively. His main areas of expertise are bats, vascular plants, amphibians and reptiles, otter (*Lutra lutra*) and water vole.

Subsequent bat surveys were carried out by Christian Whiting (Level 2 NE licensed surveyor: 2015-14745-CLS-CLS), John Parden (Level 2 NE licensed surveyor: 2015-14697-CLS-CLS Level), Jill Wyllie and Rosie Jackson.

### 3.6

#### **ASSESSMENT**

Impacts and effects upon habitats and species are assessed with reference to the CIEEM Guidelines for Ecological Impact Assessment (2018) and are reported in Section 5, based on the baseline conditions reported in Section 4.

The assessment includes potential impacts upon habitats and species during the construction and operational phases of the scheme. It considers positive and negative impacts, their extent, magnitude and duration, frequency and timing and reversibility.

# 4 Results

## 4.1 INTRODUCTION

This chapter summarises the results of the desk and field surveys.

## 4.2 BASELINE ECOLOGICAL CONDITIONS - DESK STUDY

### 4.2.1

#### *Designated sites*

Any locally designated sites (e.g., Local Nature Reserves) within 2km, nationally designated sites within 5km and internationally designated sites within 13km of the application site are listed below in Table 4.1.

**Table 4.1 Relevant designated sites**

Site name	Site designation
Aspall Wood*	CWS
Debenham Meadow	CWS
John Read's Meadow	CWS
Page's Wood	CWS
Fox Fritillary Meadow, Framsdon	SSSI

\* Listed on the Ancient Woodland inventory for England.

#### Locally designated sites

No Local Nature Reserves (LNRs) are present within 2km of the site. Four County Wildlife Sites (CWS) within 2km are listed below.

Aspall Wood County Wildlife Site (CWS) is an isolated ancient woodland with medieval woodbanks along two boundaries. The woodland consists of ash (*Fraxinus excelsior*) and hazel (*Corylus avellana*) coppice with smaller areas of ash and hornbeam (*Carpinus betulus*) coppice and a small area of elm (*Ulmus sp.*). A few large ash, oak (*Quercus sp.*) and field maple (*Acer campestre*) trees are present. Ground flora is dominated by dog's mercury (*Mercurialis perennis*) with bramble (*Rubus fruticosus agg.*) and common nettle (*Urtica dioica*) though a wet area supports meadowsweet (*Filipendula ulmaria*).

Debenham Meadow CWS is a small ancient, unimproved and species rich meadow featuring green winged orchid (*Anacamptis morio*), yellow oat grass (*Trisetum flavescens*), and adder's tongue fern (*Ophioglossum reticulatum*) among other species.

John Read's Meadow CWS is a small mosaic of habitats on a brownfield site, with scrub, ponds, woodland and open grassland. The grassland is species rich with southern marsh orchid (*Dactylorhiza praetermissa*), water mint (*Mentha aquatica*), adder's tongue fern and other species. Structurally the habitat is diverse with a gradient of grassland into shrub into woodland with undulating land.

Page's Wood CWS is an ancient medieval woodland by age and character, though is not listed on the Ancient Woodland Inventory possibly due to its small size. The wood is bordered by a mixed species hedgerow and ditch with the woodland itself comprised of a coppice layer of ash and field maple coppice with standards of oak and ash. Hazel is dominant in the understorey, while ground flora is relatively diverse for the small size of the site. Dog's mercury is abundant with common twayblade (*Neottia ovata*), common spotted orchid (*Dactylorhiza fuchsii*), early purple orchid (*Orchis mascula*), and herb Paris (*Paris quadrifolia*) present.

**Given their distance from the site and the absence of existing footpath networks, no significant impacts are anticipated as a result of the proposed development.**

Nationally designated sites

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 rare plant with a limited national distribution. The grass sward contains a mixture of grasses including meadow foxtail (*Alopecurus pratensis*), red fescue (*Festuca rubra*), creeping bent (*Agrostis stolonifera*), Yorkshire fog (*Holcus lanatus*), crested dog's-tail (*Cynosurus cristatus*) and rough meadow-grass (*Poa trivialis*) with a good variety of herbs typical of alluvial meadows. These include meadowsweet (*Filipendula ulmaria*), cowslip (*Primula veris*), cuckooflower (*Cardamine pratensis*) and ragged robin (*Lychnis flos-cuculi*).

Internationally designated sites

None within 13km.

4.2.2

*Priority habitats*

Assessment of the Magic Map database returned a traditional orchard c.400m southwest, a lowland meadow 600m southwest, deciduous woodland 800m northwest and woodpasture and parkland 1000m northeast.

4.2.3

*Species*

No protected or notable species records exist from within the application site boundary. Species of relevance include are shown in Table 4.2.

**Table 4.2 Protected/notable species within 2km of the application site**

Latin Name	Common Name	Designation
<b>Amphibians and reptiles</b>		
<i>Triturus cristatus</i>	Great crested newt	Sch. 5; S. 41
<b>Bats</b>		
<i>Nyctalus noctula</i>	Noctule	Sch. 5; S. 41
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	Sch. 5
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	Sch. 5; S. 41
<b>Birds</b>		
<i>Alauda arvensis</i>	Skylark	Red Status; S. 41
<i>Alcedo atthis</i>	Kingfisher	Sch. 1, Amber Status
<i>Apus apus</i>	Swift	Red Status
<i>Delichon urbicum</i>	House martin	Red Status
<i>Emberiza citrinella</i>	Yellowhammer	Red Status; S. 41
<i>Linaria cannabina</i>	Linnet	Red Status
<i>Passer domesticus</i>	House sparrow	Red Status, S. 41
<i>Perdix perdix</i>	Grey partridge	Red Status; S. 41
<i>Streptopelia turtur</i>	Turtle dove	Red Status, S. 41
<i>Sturnus vulgaris</i>	Starling	Red Status, S. 41
<i>Turdus philomelos</i>	Song thrush	Amber Status
<i>Tyto alba</i>	Barn owl	Sch. 1
<b>Invertebrates</b>		
<i>Coenonympha pamphilus</i>	Small heath	S. 41
<i>Lucanus cervus</i>	Stag beetle	Sch. 5; S. 41

<b>Plants</b>		
<i>Scandix pecten-veneris</i>	Shepherd's needle	S. 41
<b>Other mammals</b>		
<i>Arvicola amphibius</i>	Water vole	Sch. 5; S. 41
<i>Erinaceus europaeus</i>	Hedgehog	S. 41
<i>Lepus europaeus</i>	Brown hare	S. 41
<i>Micromys minutus</i>	Harvest mouse	S. 41

#### 4.2.4 *NE open source GCN records*

Assessment of Natural England's GCN class licence return data and eDNA pond survey records show the closest positive record (licence return) to be located c. 2.2 km northwest of the application site (dated 2014), which is outside the normal dispersal range of the species.

### 4.3 **BASELINE ECOLOGICAL CONDITIONS – FIELD SURVEY**

#### 4.3.1 *Habitats and vascular plants*

Descriptions of the habitats (Appendix A1) and the characteristic plants species present are provided below.

##### a) Built environment

The existing barns (Photos 1 to 5) differ in structure. B1 is a single storey timber framed barn clad with corrugated tin walls and roof (Photo 1). Barn B2 is a single storey building of brick and breeze block construction and a pantile roof (Photos 2 and 3). Barn B3 is 2-storey barn, with a steel and timber frame and corrugated tin roof and walls (Photos 4). Barn B3 is in a state of severe disrepair and is missing many large sections of cladding. Extensive areas of hard standing exist between the barns (Photo 5).

##### b) Ruderal vegetation

Ruderal species have colonised the north of the site around B1 (Photo 1) including bramble (*Rubus fruticosus agg.*), nettle (*Urtica dioica*) and smooth sow thistle (*Sonchus oleraceus*). Some ruderal vegetation also exists along the south side of B2 (Photo 2).

#### 4.3.2 *Amphibians and reptiles*

##### a) Ponds

No ponds are present on site, though two ponds (P1 and P2) exist within the farm boundary. Both ponds were initially assessed in 2018 (in support of a separate proposed barn conversion) for their potential to support breeding GCN using an HSI test. Pond P1 was assessed as being below average, with pond P2 showing providing habitat of good suitability.

A further inspection of the pond P1 (Photo 6) found it to be devoid of life with some sewage fungus evident at the northern end indicating organic enrichment and the pond dried completely in 2019 following a second consecutive drought. In 2021, the pond was holding water again and was in similar condition to the initial site walkover.

Pond P2 holds water all year round with reduced levels in 2019 with duckweed cover (Photo 7) over much of its surface. Where open water existed and the turbidity of the pond indicated significant enrichment from organic pollution, waterfowl faeces and/or fish. Torching of the ponds following bat emergence surveys in 2019 and 2020 recorded no GCNs around the pond margins amongst emergent vegetation where you would normally find female GCNs laying eggs. This is not conclusive evidence of GCNs not being present, but the surveys were during the optimum survey window of mid-April to mid-May and based on surveying lots of ponds with high turbidity and poor to average

water quality (duckweed can affect oxygen levels), significant GCN populations are rarely recorded.

b) Terrestrial habitat

i) *Amphibians*

The site provides some little dispersal habitat for amphibians, with the only potential feature being the ruderal scrub to the north of the site. The surrounding arable land provides negligible terrestrial habitat, though tree planting around P2 provides some additional off-site refugia.

ii) *Reptiles*

Local biological records returned no records of reptile species within 2km. As for amphibians, the site offers limited dispersal and refuge habitat for reptiles. Given the wider arable landscape, the only species likely to be present within the area is grass snake (*Natrix helvetica*), which may occasionally pass through the site to reach the adjacent ponds.

When considering the above factors, the overall habitat suitability for reptiles was assessed as low, and perhaps limited to the occasional dispersing grass snake.

#### 4.3.3

##### *Bats*

a) Building inspection – Figure 3

B1 has corrugated tin walls and roof (Photo 1). A brown long-eared (*Plecotus auritus*) (BLE) feeding perch (Photo 8) was found in the northwest corner of the barn B1 (Figure 3). Barn B1 was assessed as providing negligible day roosting potential due to the lack of crevices but supports an occasional BLE feeding perch.

Barn B2 has sections of blockwork and brick walls with a pantile roof (Photos 2 and 3) with potential access points for bats including holes in the brick work, under the eaves, under the tiles and missing glass in the window frames. A scattering of recent BLE/Myotis droppings was found at the east end of the barn (Figure 3). It was assessed as providing moderate bat roosting potential for common day roosts. B3 has a steel frame and corrugated tin roof and walls and is open on most of its sides (Photo 4) and is therefore exposed to the elements and too illuminated to support any bat roosts.

No significant roosts such as a maternity roost are present within the barns, with no significant aggregations of droppings in the roof voids or below access points.

b) Tree Roost Assessment

No suitable tree roosts were identified.

c) Foraging/commuting habitat

The site offers little foraging potential, primarily composed of hard standing and some dense ruderal vegetation. The hedgerows and trees within the farm boundary afford some suitable commuting habitat for bats and are connected to other areas of suitable habitat in the wider landscape. Foraging potential was assessed as negligible and commuting habitat as low.

d) Bat activity surveys – Figure 3

i) *Dusk emergence survey (20/07/21)*

Based on the results of the building inspection, a bat emergence survey was progressed. The survey was undertaken during optimal weather conditions with 25% cloud cover; a light breeze (BS1-2) and temperatures of 22°C at the survey start,

dropping to 19°C at the end. Sunset was at 21:04. The survey commenced at 21:00 and ended at 22:35 when bat activity ceased.

The first registration was of a common pipistrelle (*Pipistrellus pipistrellus*), heard but not seen at 21:31. At 21:37, a common pipistrelle emerged from high on the southeast gable end of barn B2. Further foraging activity was entirely from common pipistrelle until a single soprano pipistrelle (*Pipistrellus pygmaeus*) was recorded at 21:56.

Inspections of all 3 barns found no bats at rest or flying in the barns.

ii) *Dusk emergence survey (18/08/21)*

The survey was undertaken during optimal weather conditions with 50% cloud cover; a mild breeze (BS2-3) and temperatures of 18°C at the survey start, dropping to 16°C at the end. Sunset was at 20:13. The survey commenced at 20:00 and ended at 21:45 when bat activity ceased.

The first registration was an emergence: a common pipistrelle emerging from under tiles on the north side of B2 at 20:28 (Figure 3). At 20:51, another common pipistrelle emerged from under the roof tiles (B2); this time further east than the first bat. During this time, common pipistrelle activity had included foraging within barn B3 to the north. The final record was of a common pipistrelle at 20:57.

Inspections of all 3 barns found no bats at rest or flying in the barns.

4.3.4 *Nesting birds*

Barn B2 contained four swallow (*Hirundo rustica*) nests, all at the east end of the interior. All 3 barns provide suitable nesting locations for passerines such as house sparrow (*Passer domesticus*) (Red List; S. 41) and starling (*Sturnus vulgaris*) (Red List). No evidence of barn owl use was recorded (pellets, faecal streaking etc.).

The lack of hedgerows and suboptimal nature of ruderal vegetation for nesting birds suggest that any nesting opportunities are confined to the barns.

4.3.5 *Badger*

No evidence of badger (e.g., snuffle holes, runs, latrines, setts) was observed.

4.3.6 *S. 41 habitats and species*

a) Habitats

No S. 41 habitats recorded.

b) Species

Areas of scrub around the barns B1 and B3 offer potential refuge habitat for hedgehog, which may also forage around the wider site.

4.3.7 *Non-native invasive plants*

No Sch. 9 species or other invasive plants recorded.

4.4 **GEOGRAPHIC CONTEXT**

The geographic context of a feature is a useful consideration within an assessment of impacts. For this report, the geographic frames of reference for the habitats and species present on site are provided in Table 4.3; values are based upon the criteria in Table A2.1 and expert best judgements.

**Table 4.3 Feature value based on geographic context**

<b>Feature</b>	<b>Value</b>
Ruderal vegetation	Local
Amphibians and reptiles	Local
Bats	Local
Nesting and foraging birds	Local
S. 41 habitats and species	Local

# 5 Assessment and recommendations

## 5.1 INTRODUCTION

The following section provides a summary description of the proposed development, with an assessment of associated impacts and likely significant effects upon biodiversity.

The assessment and recommendations are based on use of the mitigation hierarchy, which in the first instance aims to avoid impacts. Where impacts cannot be avoided, they should be minimised (through mitigation). Only where impacts cannot be avoided or minimised should there be compensation for biodiversity harm.

Ecological enhancements are suggested, and consideration is given to individual as well as overall net gains or losses of biodiversity.

## 5.2 DESCRIPTION OF PROPOSED DEVELOPMENT

Planning permission is being sought for the conversion of two former agricultural barns into 2 dwellings referred to as 'Barn A' and 'Barn B' on the proposed drawings. Some vegetation removal will be required to facilitate the works.

The assessment and recommendations below provide preliminary recommendations for mitigation and enhancements for the proposed development. They are based on the Location Plan (Drawing No: 508 – 01), Existing GA Plans (Drawing No: 508 – 03), Proposed Site and Block Plan (Drawing No: 508 – 08), Proposed GA Plans (Drawing No: 508 – 09,10), and Proposed Elevations and Section (Drawing No: 508 – 11,12), drawings by Beech Architects Ltd and information available at the time of writing and should be updated accordingly as the scheme is subsequently amended.

## 5.3 NEED FOR FURTHER SURVEYS

It is generally advised that subject to no significant change in site management regimes, and dependent on the species present, baseline survey results remain valid for approximately 12 – 18 months (CIEEM, 2019). Exceptions include where mobile species are/may be present, where site management practices cease or change, or where existing guidance indicates otherwise.

## 5.4 ASSESSMENT OF IMPACTS

The EclA assessment process (CIEEM, 2018) involves:

- Identifying and characterising impacts and their effects;
- Incorporating measures to avoid and mitigate negative impacts and effects;
- Assessing the significance of any residual effects after mitigation;
- Identifying appropriate compensation measures to offset significant residual effects; and
- Identifying opportunities for ecological enhancement.

The emphasis in EclA is on the assessment of 'significant effects' i.e. an effect that either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general. In broad terms significant effects encompass impacts on structure and function of defined sites, habitats or ecosystems and the conservation status of habitats and species including extent, abundance, and distribution.

The ecological features to be subject to detailed assessment in this report are those judged to be important and potentially affected by the project; protected species are included where the development will result in a potential breach of legislation.

## 5.5 HABITATS AND VASCULAR PLANTS

### *a) Potential impacts*

The works will be primarily restricted to the hard standing and ruderal vegetation immediately around the barns and so vegetation clearance will likely be limited to small areas immediately adjacent to the barns. Loss of these habitats constitutes a negative ecological effect.

Any accidental damage to retained trees and shrubs during construction would result in a significant negative effect at the local level.

The application footprint for Barn B includes a large section of Pond P2 and the marginal vegetation and shrubs around it, but no works are proposed to the pond. However, pollution incidents during the construction phase which could cause a significant negative effect on the pond flora and fauna.

### *b) Mitigation*

The works footprint and associated disturbance should be minimised in extent as much as possible. Retained hedgerows, trees and vegetated areas should be protected with temporary fencing (e.g., Heras) to prevent above ground damage and Root Protection Areas (RPAs) should be used to ensure materials storage and compounds are located appropriately, e.g., the compound should be sited off the grassed areas.

A contractor Risk Assessment Method Statement (RAMS) should be developed ahead of works commencing to ensure Good Practice measures are used to avoid and/or minimise the risk of pollution to ponds P1 or P2. Measures may include, but are not exclusive to:

- Locating any site compounds (including any fuel storage) away from the ponds;
- Placing straw bales along the western/northern edges of P2; a geotextile can be weighed down on the pond side (e.g. with sand bags to further limit siltation impacts upon the waterbody).
- Limiting topsoil removal as required and covering topsoil whilst stockpiled;
- Cleaning machinery in designated areas with a sump and re-using waste water where possible or discharging via a sewer or tanker only;
- Storing chemical and fuels securely within double-bunded bowzers or chemical stores (with a 110% capacity to contain any spillage) away from the pond;
- Using water based, non-toxic and biodegradable chemicals and fuels where possible;
- Mixing and washing chemicals and associated equipment in designated areas with waste water safely disposed of via mains sewerage or tanker as appropriate;
- Use of biodegradable hydraulic and fuel oils;
- Having adequate site security in place; regularly checking equipment for failures and/or leaks; and
- Keeping spill kits and booms present on the site and ensuring staff are trained in their use.

Although prepare for other areas of the UK, useful further information is available via the Guidance for Pollution Prevention - Works and maintenance in or near water: GPP 5 January 2017 document, produced by Natural Resources Wales (NRW), the Northern

Ireland Environment Agency (NIEA) and the Scottish Environment Protection Agency (SEPA)<sup>6</sup>.

*c) Residual effects*

No significant residual effects are predicted.

## 5.6

### **AMPHIBIANS AND REPTILES**

*a) Potential impacts*

Ground-breaking and construction activities, in addition to limited vegetation clearance, could result in the potential entrapment, injury and mortality of amphibians (including potentially GCNs) through contact with caustic substances (e.g., wet cement), trenches (e.g., sewerage and surface water drainage), and movement of stored building materials.

During the operational phase site drainage comprising the use of gully pots and down pipes connecting to closed surface water drainage or those with silt traps can result in animals becoming trapped (Muir *et al.*, 2012) and impact upon amphibians. The risks posed by the above are amplified by the presence of two large ponds within 40m (with one less than 15m away).

Combined, such impacts could result in permanent negative effects upon low numbers of individuals.

*b) Mitigation*

See section 5.5.

To avoid impacts upon amphibians, the following measures should be implemented on site. Hedgerow removal and dismantling of rubble piles should be under the supervision of a suitably experienced ecologist (Ecological Clerk of Works, ECoW):

1. Areas of vegetation within the site boundary should be kept short with regular mowing prior to and during construction.
2. Any existing refugia present that requires removal (e.g. rubble and brash piles) should be moved by hand (assisted with machines) during the period March to September inclusive (when there are no frosts), under the supervision of an ECoW;
3. Excavations should ideally be filled on the same day they are dug or covered overnight with ply boarding and any gaps filled with damp sharp sand;
4. If this is not feasible access ramps should be created to allow animals to escape and the excavations should be inspected daily and immediately prior to infilling. Any animals (except for GCN) present should be moved into retained hedgerows and/or other boundary habitats providing adequate cover;
5. Footings and concrete slabs should be poured during the morning where possible to ensure it has solidified prior to dusk to reduce the risk of animals coming into contact with wet concrete;
6. Any hand mixing of mortar or concrete should be on ply boarding over a tarpaulin which is folded over the boarding at the end of each day to prevent animals coming into contact;
7. Any excess concrete should be poured into a concrete skip, so it can then set to prevent animals coming into contact.

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<sup>6</sup> <http://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf>

8. All building materials and waste materials should be stored on hard gravel driveway to the north of the site or stored off the ground on pallets to reduce risk of animals seeking refuge; and
9. Should any GCNs (Appendix A3) be encountered, works should stop immediately, and advice be sought from a suitably experienced ecologist. Any other animals should be allowed to move out of the works area, or safely relocated. The poster in Appendix A3 should be erected in the welfare facilities provided for construction staff onsite.

**Downpipes taking water off the roofs should be sealed at ground level by using a leaf and debris screen<sup>7</sup> to prevent amphibians entering drains.**

*c) Residual effects*

With mitigation measures proposed, no significant direct effects on individuals are anticipated during either the construction or operational phases.

## 5.7

### **BATS**

*a) Potential impacts*

i) Roosting bats

The proposed works will result in the destruction of day roosts used by a maximum of 2 common pipistrelle bats within barn B2 and the destruction of a BLE feeding perch in barn B1. Together these impacts are considered a significant effect at the local level.

ii) Foraging and commuting habitats

No significant impacts are anticipated from the limited vegetation clearance.

iii) Light disturbance

Lighting (construction and operational phases) can impact bat commuting and foraging behaviour and increase the risk of predation, which could affect foraging success and population recruitment considered a potential significant effect at the local level.

Lighting impacts relate to security lighting external to the buildings, and potentially from light spillage resulting from internal lighting once the buildings are in use. In this instance, impacts on the adjacent ponds are most relevant.

iv) Roofing membranes

Research has shown bats can become entangled in modern breathable roofing membranes if used under clay pantiles or peg/plain tiles (Waring *et al.* 2013) or behind weatherboarding. Without mitigation, the impacts above could result in significant effects at a local scale.

*b) Mitigation*

i) Roost disturbance/loss

To ensure offences are avoided, works will need to proceed under a European Protected Species Mitigation Licence which cannot be secured until planning permission is granted. This can be conditioned as part of the planning approval.

After the bat licence is granted a licensed bat ecologist will be required to supervise any removal of roof tiles from B2 and corrugated cladding from barn B1 where a BLE feeding perch was recorded. Any bats encountered will be moved to holding boxes

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<sup>7</sup> <https://www.drainagepipe.co.uk/leaf-and-debris-gully-110mm-p-D94G/>

erected on trees to be retained for a minimum of 5 years as a condition of the bat licence.

ii) Foraging and commuting habitat

As per 5.5, protective fencing will be used to protect retained features.

iii) Light disturbance

Exterior lighting (as well as temporary security lighting during the construction phase) design must minimise lighting impacts upon retained natural habitats, and should follow current guidance as necessary<sup>8,9</sup>:

- *Type of lamp (light source)*: Light levels should be as low as possible as required to fulfil the lighting need. Lighting should have a maximum of 7.5 to 10 lux and LED lights should be used using the warm white (or amber) spectrum, with peak wavelengths >550nm (2700 or 3000°K) and no UV component; and
- *Lighting design*: Lighting should be directed to where it is needed, with minimal horizontal spillage towards retained habitats including mature broadleaved trees and hedgerows. This can be achieved by restricting the height of the lighting columns/fixtures and the design of the luminaire, including the following measure:
  - ❖ Light columns/fixtures in general should be as short as possible as light at a low level reduces the ecological impact.
  - ❖ Luminaires with an upward light ratio of 0% should be mounted on the horizontal i.e. with no upward tilt.
  - ❖ If taller lights are required, and as a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill; and
  - ❖ PIR movement sensors and timers should be used to minimise the 'lit time'.

iv) Roofing membranes

The new dwelling should use bat friendly roofing felt (e.g. Type 1F) if handmade clay pantile or plain tiles are to be used, in addition to behind weatherboarding. If tight fitting tiles (e.g. interlocking pantiles or machine-made plain tiles), slates or concrete weatherboarding are used, BRM may be used if gaps are less than 5mm, to ensure bats cannot come into contact with the BRM.

c) *Residual effects*

Destruction of the roost constitutes a significant residual effect at a local level and will require compensation (see Section 5.10).

## 5.8

### NESTING BIRDS

a) *Potential impacts*

Conversion of the barns will result in the loss of nest sites for swallow and suitable nesting habitat for a variety of garden and farmland species including house sparrow and wren (*Troglodytes troglodytes*) (Amber List).

b) *Mitigation*

Habitat avoidance and mitigation as per sections 5.5 and 5.6.

Commencement of the building works (particularly any vegetation clearance) should take place outside of the nesting bird season. If this is not feasible, a check for nesting

<sup>8</sup> <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting>

<sup>9</sup> [www.eurobats.org/sites/default/files/documents/publications/publication\\_series/WEB\\_DIN\\_A4\\_EUROBATS\\_08\\_ENGL\\_NVK\\_28022019.pdf](http://www.eurobats.org/sites/default/files/documents/publications/publication_series/WEB_DIN_A4_EUROBATS_08_ENGL_NVK_28022019.pdf)

birds should be undertaken by a competent ecologist prior to works starting. If any active nests are present, works within 5m must wait until the young have fledged.

*c) Residual impact*

Direct impacts on nesting birds will be avoided. However, the loss of proven nest sites for swallow and suitable nesting habitat for other species requires compensation.

## 5.9 OTHER S. 41 LIST HABITATS AND SPECIES

*a) Potential impacts*

Vegetation clearance, ground-breaking and construction activities will result in the permanent loss of potential (though suboptimal) foraging and refuge habitat for hedgehog (e.g., ruderal and marginal vegetation).

During construction, hedgehogs could potentially fall into open trenches resulting in entrapment and possible injury and mortality of individuals due to falling in or becoming in contact with caustic substances such as fresh concrete.

Erection of ecological barriers (e.g., timber panel fencing) would affect foraging access for animals. In combination such impacts would be considered to result in a negative ecological effect at the local level.

Combined, the above impacts would result in negative effects upon local individuals.

*b) Mitigation*

Habitat avoidance and mitigation as per section 5.5 and 5.6. Site clearance should always consider the potential presence of hedgehogs with vigilance, with animals encountered during works allowed to move or moved to suitable cover, e.g., base of hedgerows.

During construction, concrete should be poured early in the day or covered with ply boarding or membrane overnight to prevent animals coming into contact. Trenches should be covered overnight, or mammal ladders (large rough planks placed at shallow angles) placed to allow animals escape. Uncovered trenches must be checked daily and any animals encountered be relocated out of the works area.

The use of close board fencing should be minimised, with native species-rich hedgerows preferable where boundary features are required. If close board fencing were to be installed, then at least one hedgehog highway<sup>10</sup> should be provided at either end of the fencing run with signage.<sup>11</sup>

*c) Residual effects*

Direct impacts upon hedgehog will be avoided with no significant residual impacts.

## 5.10 COMPENSATION

Significant negative residual effects upon habitats and species requiring compensation relate to the loss of bird nesting and bat roosting habitat (i.e., conversion of the barns B1 and B2).

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<sup>10</sup> <https://www.hedgehogstreet.org/help-hedgehogs/link-your-garden/>

<sup>11</sup> <https://ptes.org/shop/just-in/hedgehog-highway/>

To compensate for the loss of any potential amphibian refuge habitat, a log and brash pile (Appendix A4) is recommended for construction to the west of site near Pond P1. The refugia may also be used by hedgehog (*Erinaceus europaeus*).

To compensate for the loss of bird nest sites (especially swallow), swallow cups (Appendix A5) could be erected within retained farm buildings to the east of the barn. In addition, two hole-entrance and two open-fronted nest boxes should be erected on suitable mature trees nearby.

To compensate for the loss of the bat roosts, the likely compensation will be:

- 2x woodstone/woodcrete roost box (see Appendix A6) erected on or incorporated into the walls of the new dwellings;
- 1x Vincent Pro bat box on suitable mature tree; and
- 2x Kent bat box on suitable mature tree.

**Full details of any compensation required will be confirmed with Natural England as part of registration on/reporting for the bat mitigation class licence.**

## 5.11 CUMULATIVE EFFECTS

The Mid Suffolk Council website was searched on the 3 February 2022 for significant planning applications within 1km of the application site dating back by two years. Refused and withdrawn applications were not considered in relation to cumulative ecological effects.

The search returned a small number of applications for extensions/alterations to existing buildings and a smaller number of applications for new agricultural buildings. Given the scale and type of the applications identified, no significant cumulative effects are considered likely.

## 5.12 ENHANCEMENT OPPORTUNITIES

Table 5.1 details a number of suggested enhancement measures which could be implemented to maximise biodiversity gains. A minimum of 3 of the 5 options shown in Table 5.2 should be implemented.

**Table 5.1 Biodiversity enhancements**

Feature	Enhancement suggestion
Ornamental planting	<p>1. Any ornamental planting should utilise (ideally native) nectar rich plants for the benefit of pollinators and associated predators (e.g., foraging bats and hedgehogs).</p> <p>Planting should include nectar rich climbers such as traveller's joy (<i>Clematis vitalba</i>) and honeysuckle (<i>Lonicera periclymenum</i>), which could be planted at 5ft intervals along existing hedgerows or trained up fences, posts, or trellises.</p>
New hedgerows	<p>2. Where boundary features are required, native species-rich hedgerows should be used in favour of closeboard fencing. A combination of native species should be used in order to maximise the biodiversity benefit.</p> <p>Native species that do not 'shed' their leaves, creating a year-round dense screen, whilst providing an important</p>

Feature	Enhancement suggestion
	<p>habitat for garden birds, small mammals, invertebrates, and amphibians include:</p> <ul style="list-style-type: none"> <li>• Beech (<i>Fagus sylvatica</i>);</li> <li>• Hornbeam (<i>Carpinus betulus</i>); and</li> <li>• Wild privet (<i>Ligustrum vulgare</i>).</li> </ul> <p>Species that add colour in autumn and winter and a source of berries, nuts and fruit include:</p> <ul style="list-style-type: none"> <li>• Crab apple (<i>Malus sylvestris</i>)</li> <li>• Dogwood (<i>Cornus sanguinea</i>);</li> <li>• Field maple (<i>Acer campestre</i>);</li> <li>• Guelder rose (<i>Viburnum opulus</i>);</li> <li>• Hazel (<i>Corylus avellana</i>);</li> <li>• Holly (<i>Ilex aquifolium</i>);</li> <li>• Native rose species, such as sweet-briar (<i>Rosa rubiginosa</i>) or field rose (<i>Rosa arvensis</i>); and</li> <li>• Spindle (<i>Euonymus europaeus</i>).</li> </ul>
Birds	3. House martin nest cups (minimum of 5 as they are colony breeders) could be erected on the north or east elevation and positioned just under the eaves. Droppings boards <sup>12</sup> can be installed underneath if fouling is likely to be an issue.
Fruit trees	4. Heritage fruit trees <sup>13</sup> , including cultivars that originated in Suffolk, could be planted as a seasonal food source for wildlife including insects, mammals and birds.

**Peat-based composts will not be used in any planting scheme to avoid impacts upon habitats and carbon storage.**

### 5.13

#### CONCLUSIONS

Subject to securing the relevant NE licence the proposed mitigation, compensation and enhancement measures will minimise losses of biodiversity.

Measures proposed should be secured through appropriate planning conditions as per the British Standard (BS 42020:2013<sup>1</sup>). These could include conditions specific to bats (D.6.2 Submission of a copy of the EPS licence prior to works commencing on buildings which support roosting bats), nesting birds (e.g., BS 42020:2013 D.3.2.1) or a Biodiversity Method Statement (BS 42020:2013 D.2.1) to provide detailed guidance for mitigation, compensation, and enhancement measures.

<sup>12</sup> <https://www.nhbs.com/schwegler-droppings-board-for-house-martin-swallow-nests>

<sup>13</sup> <https://www.applesandorchards.org.uk/>

## 6 References

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Waring, S., Essah, E., Gunnell, K. and Bonser, R. (2013) Double jeopardy: the potential for problems when bats interact with breathable roofing membranes in the United Kingdom. Architecture & Environment, 1 (1). pp. 1-13.

## Figures



### Legend

 Survey areas for the proposed 2 barn conversions

Barn B1 is referred to as the proposed **Barn A**.

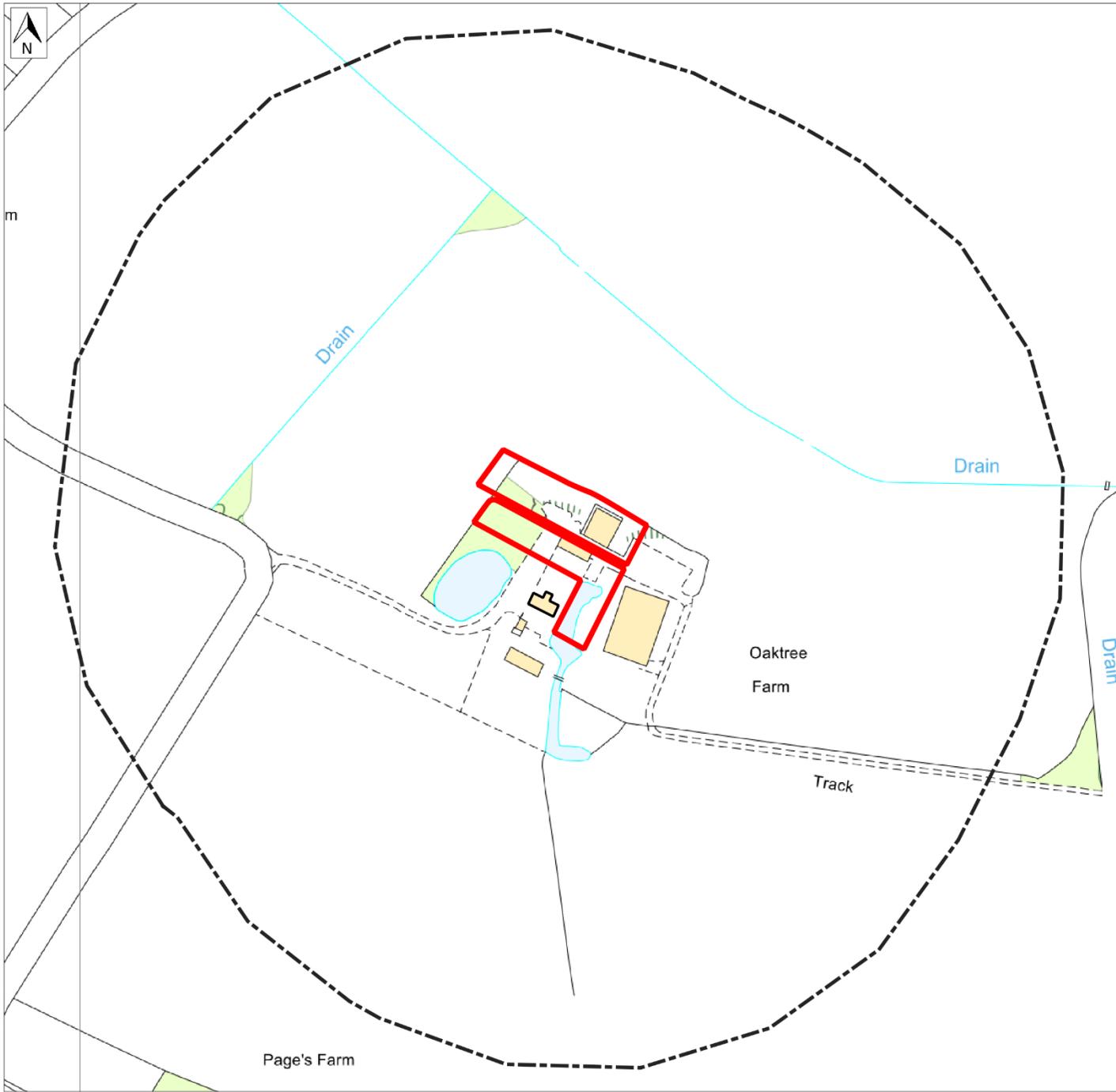
Barn B2 is referred to as **Barn B**



Project: Oak Tree Farm (Class Q), Kenton, Suffolk

Drawn:	Date:	Drawing Ref:
JB	01/02/22	OAKTREEFARMBARNS/01

**Figure 1 Site location plan**



### Legend

- Application site boundary
- Buffered



Project: Oak Tree Farm (Class Q), Kenton, Suffolk

Drawn:	Date:	Drawing Ref:
JB	01/02/22	OAKTREEFARMBARNS/02

**Figure 2 Pond plan**



### Legend

- ◆ BLE feeding perch
- ★ Myotis/BLE droppings
- ← Common pipistrelle emergence (20/07/21)
- ← Cpip emergence (18/08/21)

Client: Mary Clarkson  
 Project: Proposed barn conversions, Oak Tree Farm, Kenton, Suffolk

Drawn:	Date:	Drawing Ref:
JB	08/02/22	OAKTREEFARMBARNS/03

**Figure 3 Bat survey results**

## Appendices

## Appendix A1 Photos



**Photo 1** North and west elevation of single storey B1



**Photo 2** South and west elevations of barn B2



**Photo 3** North and east elevations of barn B2



**Photo 4** West end of B1 and south and west views of B3



**Photo 5** Hard standing area and scrub to west of the barns



**Photo 6** Pond P1



**Photo 7** Pond P2



**Photo 8** BLE feeding remains in B1

## **Appendix A2 EclA criteria**

### A3.1 General criteria for geographic context/value

Designation	Example
<b>International</b>	<ul style="list-style-type: none"> <li>• SPA, SAC and Ramsar sites and the features that they have been designated for.</li> <li>• A sustainable area of habitat listed in Annex I of the Habitats Directive or smaller areas of such habitat which are essential to maintain the viability of a larger whole.</li> <li>• A sustainable population of an internationally important species e.g. UK Red Data Book (RDB) species or European Protected Species (EPS) of unfavourable conservation status in Europe (e.g. Annex II species: bats, GCNs etc.), of uncertain conservation status or of global conservation concern in the UK BAP.</li> </ul>
<b>National</b>	<ul style="list-style-type: none"> <li>• SSSI or a discrete area that meets the selection criteria for designation.</li> <li>• A sustainable area of priority habitat identified included on the S. 41 NERC Act list or smaller areas of such habitat that are essential to maintain the viability of a larger whole.</li> <li>• A sustainable population of priority species (listed under S. 41 of the NERC Act 2006).</li> <li>• A sustainable population of a nationally important species i.e. RDB species not included in above category but which is listed on Schedules 5 or 8 of the WCA 1981 (as amended). Also, sites supporting a breeding population of such species or supplying a critical element of their habitat requirements.</li> <li>• A sustainable population of uncommon or threatened Annex IV EPS species at a UK level.</li> <li>• A nationally scarce species (occurs in 30-100 10km squares in the UK) that has its main UK population within the district.</li> </ul>
<b>County</b>	<ul style="list-style-type: none"> <li>• A viable area of habitat identified in the county BAP.</li> <li>• A County Wildlife Site.</li> <li>• A sustainable population of common or non-threatened Annex IV EPS species at a UK level.</li> <li>• A Nationally Scarce species that does not have its main population within the county.</li> <li>• Any BAP species not included in the 'national' category above for which a county Action Plan exists.</li> </ul>
<b>Local</b>	<ul style="list-style-type: none"> <li>• Individual members of local populations of priority or other nationally/internationally important species which are not in themselves key for maintaining a sustainable population (e.g. individual dog otter passing through area with no holts or resting sites).</li> <li>• Other habitats and species not in the above categories but are considered to have some value at the district/borough level.</li> </ul>

## Appendix A3 GCN poster

# Great Crested Newt

If seen by any employee, works must cease immediately and an ecologist be contacted for advice

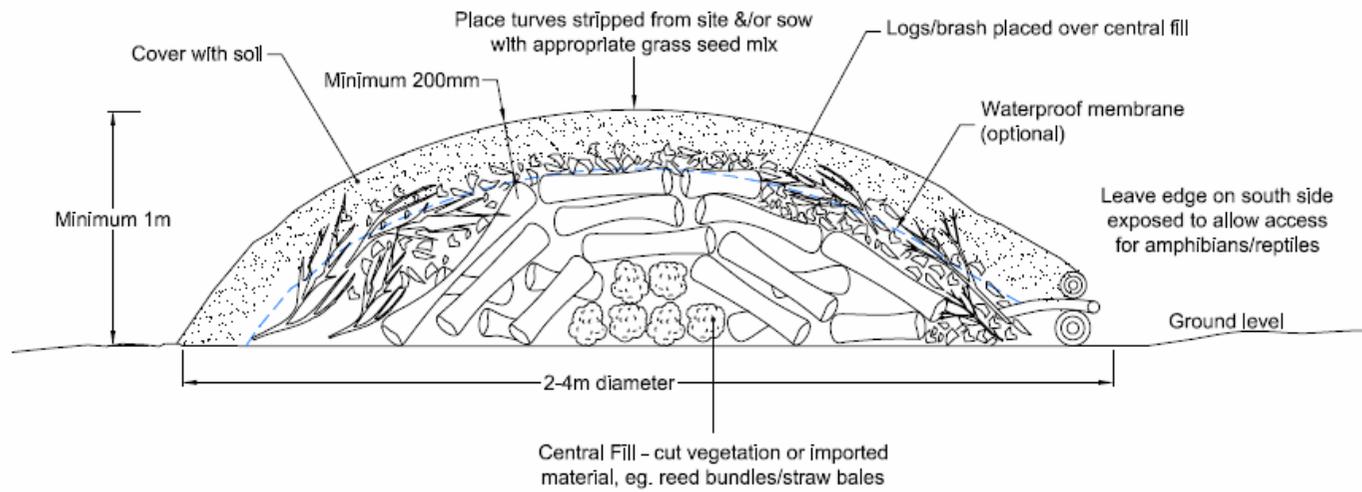
It is an offence to intentionally or recklessly disturb, injure or kill great crested newts

Further information can be found at [www.arguk.org](http://www.arguk.org)



[https://secure.telegraph.co.uk/multimedia/archive/03435/great\\_crested\\_newt\\_3435922k.jpg](https://secure.telegraph.co.uk/multimedia/archive/03435/great_crested_newt_3435922k.jpg)

## **Appendix A4 Amphibian/reptile refugia**



Brush/log pile recently created



Brush/log pile (c. 2 years old) with vegetation growing through and over

**Appendix A5 Bird boxes**



Swallows nest cup - terracotta ♡

Product Code: R408695

**£ 16.99**

★★★★☆ [Read all reviews](#)

High-fired terracotta nest cups made to the precise dimensions of nests built by swallows.

[Read full information](#)

FREE UK delivery with orders over £50

[View delivery information](#)

**SAVE £2 WHEN YOU BUY TWO PROMOTIONAL NEST BOXES!**



### Open Fronted Nest Box

£25.00

For birds such as robin and pied wagtail. Open fronted but with a generous canopy to screen from aerial predators. Place in good cover not in the open.

43 in stock

- 1 + [Add to basket](#)

Category: [bird and bat boxes](#)

Description	Additional information	Reviews (0)
<i>Description</i>		
Height tbc		
Width		
Depth		
Typical Weight		

### RSPB Sparrow terrace nest box

Product Code: R407816

Qty

**£ 29.99**

In Stock [ADD TO BASKET](#)

[Product Information](#) | [Product details](#) | [Ratings & Reviews](#)

**PROMOTIONAL NEST BOXES!**

- Add two promotional nest boxes to your basket to save £2
- Offer ends 5th January 2020 and is subject to availability
- Loyalty points can be collected/redeemed as usual
- Not available in conjunction with any other offer





Standard UK delivery £3.95 or free for orders over £75

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Home > RSPB Robin and wren diamond nestbox

Order online or call us on 0345 034 7733



### RSPB Robin and wren diamond nestbox

£12.99

Qty

In stock

[ADD TO BASKET](#)

Product information

Advice

Specifications

Delivery Returns

Best-selling, diamond shaped, open-fronted nest box attractive to robins, wrens, pied wagtails and spotted flycatcher.

Beautifully made from FSC timber; roof treated with safe, non-toxic, water-based preservative. UK made.



#### Installing your nestbox

For secure and stable fixing, there are two hanging tabs attached to the

## **Appendix A6 Bat boxes**



Integrated eco bat box (crevice)



2F Schwegler Bat Box



Vincent Pro bat box



Schwegler 1FE



Ibstock integrated bat box



Woodstone multi-chamber box



Eco Kent bat box



Access to the bat boxes cut into the weather boarding. The holes can be cut by scalloping the underside of the board where it covered the board below to reduce water ingress