



awareecology

Preliminary Ecological Appraisal & Biodiversity Net Gain Report

Buildings at Oaksey

Prepared for: The Rural Planning Co

Issue date: 25/06/2026

Version: 2

Reference: AE0329/1/2

Summary

Site Address:	Buildings at Oaksey, Malmsbury, Wiltshire, SN16 9SB
Type of structure:	No structure present
Survey effort:	- Preliminary Ecological Appraisal (PEA) survey - Biodiversity Net Gain (BNG) survey
Survey date:	- PEA & BNG Survey – 10/04/2026
Surveyors:	Daniel Howgego – GCN licence (2022-10345-CL08-GCN), Bat licence (2024-11950-CL17-BAT)
Evidence of protected species found?	- No evidence of protected species - Suitable nesting bird habitat in adjacent hedgerows
Further survey required?	- No further surveys required - The Avoidance Measures (Section 4.4) must be adhered to during the development to mitigate any impacts.
National Planning Policy Framework (NPPF) 2025, Paragraph 186	- No significant harm to biodiversity will occur because of the development. - No impacts to an SSSI will occur because of the development. - No irreplaceable habitats will be lost or damaged because of the development. - Biodiversity will be enhanced on the site (see below).
Date of Metric Calculation	- 25/06/2026
Date the Metric was Published (Statutory Metric)	- 12/02/2024
Baseline Value On-Site	- 0.98 Habitat Units & 0.45 Hedgerow Units
Has there been any Habitat Degradation On-Site?	- No
Are there Irreplaceable Habitats On-Site?	- No
Biodiversity Net Gain, Schedule 14 of the Environment Act 2021	- >10% Net Gain & meeting Trading Rules will be achieved on-site
Impacts on protected species?	- No impact on protected species predicted
Licence from Natural England required?	No
Opportunities for ecological enhancement:	- 1x External bat box - 1x Bird box - Native species planting

Document Control

Status	Version	Name of Author/Reviewer	Date
Draft	V2	Daniel Howgego BSc (Hons), MSc, ACIEEM	24/06/2026
Technical Review	V2	Daniel Howgego BSc (Hons), MSc, ACIEEM	25/06/2026
Final	V2	Daniel Howgego BSc (Hons), MSc, ACIEEM	25/06/2026

Aware Ecology Ltd
Tel: 07470 433712
Email: info@awareecology.co.uk

Copyright

© This report is the copyright of Aware Ecology Ltd. Any unauthorised reproduction and/or usage by any person/company other than the addressee is strictly prohibited.

The recommendations in this report represent Aware Ecology Ltd's professional opinions regarding the duty of care required of an experienced Ecological Consultant. The information has been prepared using industry-accepted ecological resources, academic background, and professional expertise; no specific warranty is provided regarding the precision of the background data.

Aware Ecology Ltd does not guarantee that the site is free of protected species or that the proposed client works will not negatively impact protected species or designated sites within or outside the site boundary. This report's recommendations aim to minimise any impact on protected species or designated sites and provide advice on the steps required to complete the work legally.

The findings in this report are based on conditions observed during the survey. **Please seek updated advice if more than two years have elapsed since this report was finalised.**

Table of Contents

1	Introduction	7
1.1	Background	7
1.2	Site Description	7
1.3	Legislative / Planning Context	8
1.4	Biodiversity Net Gain (BNG)	8
1.5	Scope of Use	9
2	Methods	9
2.1	Zone of Influence (ZOI)	9
2.2	Desk Study	9
2.3	Site Inspection	9
2.3.1	Habitat	9
2.3.2	Bats	9
2.3.2.1	Daytime Survey	9
2.3.3	Birds	10
2.3.4	Great Crested Newts	10
2.3.5	Reptiles	10
2.3.6	Badgers	10
2.3.7	Barn Owl	10
2.3.8	Other Protected Species	10
2.3.9	Invasive Non-Native Species (INNS)	10
2.3.10	Biodiversity Net Gain	10
2.3.10.1	Baseline Data	10
2.3.10.2	Proposed Habitat Data	11
2.4	Limitations of this Evaluation	11
2.5	Survey Team	11
3	Results	11
3.1	Desk Study	11
3.1.1	Designated Sites	11
3.1.2	Watercourses and Waterbodies	12
3.1.3	Priority Habitats	12
3.1.4	Species Records	12
3.2	Daytime Site Inspection	12
3.2.1	Habitat	12
3.2.1.1	Other Cereal Crops (c1c7)	12
3.2.1.2	Other Native Hedgerow (h2a6)	12
3.2.2	Biodiversity Net Gain	12
3.2.2.1	Pre-development Biodiversity Value	13
3.2.2.2	Habitat Degradation	13
3.2.2.3	Irreplaceable Habitats	13
3.2.3	Bats	13
3.2.4	Birds	13
3.2.5	Great Crested Newts	14
3.2.6	Reptiles	14
3.2.7	Badgers	14
3.2.8	Barn Owl	14

3.2.9	Other Species	14
3.2.10	INNS	14
4	Evaluation and Recommendations	14
4.1	Likelihood of Use by Protected Species	14
4.1.1	Bats	14
4.1.2	Birds	14
4.1.3	Other Species	14
4.2	Predicted Impacts of the Proposed Development	14
4.2.1	Habitat	14
4.2.2	Bats	14
4.2.3	Birds	15
4.2.4	Great Crested Newts	15
4.2.5	Other Species	15
4.3	Further Surveys and EPS Licensing	15
4.3.1	Bats	15
4.3.2	Nesting Birds	15
4.3.3	Other Species	15
4.4	Mitigation / Avoidance Measures	15
4.4.1	Protected Species	15
4.4.1.1	Bats	15
4.4.1.2	Birds	16
4.4.1.3	Great Crested Newts	16
4.4.1.4	Reptiles	16
4.4.1.5	Badgers	16
4.4.1.6	Other Species	16
4.4.2	Precautionary Measures	16
4.5	Ecological Enhancement	17
4.5.1	Biodiversity Net Gain	17
4.5.1.1	Total Net Gain	18
4.5.2	Species Enhancements	18
5	Legislation	19
5.1	Biodiversity Net Gain	19
5.2	Bats	19
5.3	Birds	20
5.4	Great Crested Newt	20
5.5	Reptiles	20
5.6	Badger	20
5.7	INNS	20
6	References	21
7	Appendix	22
7.1	Site Photos	22
7.2	Designated Sites	23
7.3	Priority Habitats	23
7.4	Recommended Bat Boxes	24
7.5	Recommended Bird Boxes	25
7.6	Other Biodiversity Enhancements	26

7.7 Recommended Native Planting..... 26

7.7.1 Native Hedgerow/Shrub Composition 26

7.7.2 Native Tree Composition 26

7.7.3 Grassland & Wildflower Composition (EL1) **Error! Bookmark not defined.**

1 Introduction

1.1 Background

Aware Ecology Ltd was commissioned by The Rural Planning Co to undertake a Preliminary Ecological Assessment (PEA) and Biodiversity Net Gain (BNG) survey at 'Buildings at Oaksey, Oaksey, Wiltshire, SN16 9SB' (hereafter referred to as 'the site' or 'site'). This aims to assess the likelihood that any Protected Species will be affected by the proposed works and to calculate the site's potential to achieve a 10% net biodiversity gain. So that the Local Planning Authority can consider any potential impacts when making its decision.

From a discussion with the client, it is understood that planning approval is being sought for the construction of two agricultural buildings on the site.

1.2 Site Description

The site is at national grid reference ST 99263 94076 in Oaksey, Wiltshire. It is set in a rural landscape surrounded by rural dwellings and agricultural land. The broader landscape comprises arable and pastoral fields, hedgerows and woodland. The site has priority habitats of traditional orchards and deciduous woodland within 1km; none of the woodland is classed as ancient woodland.

Figure 1. Location and red line boundary of the proposed development

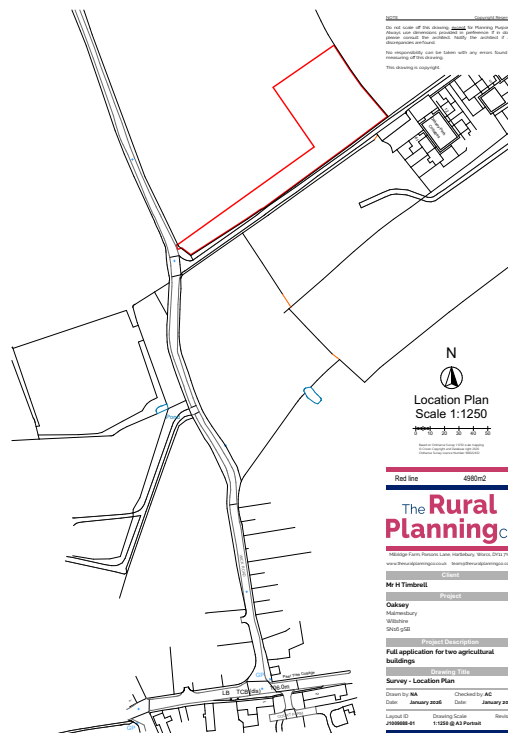


Figure 2. External overview of the site



1.3 Legislative / Planning Context

The legislation (outlined in Section 5), combined with the *National Planning Policy Framework (NPPF) 2025* and local councils' planning policies (including their BAP), places a further obligation on Local Planning Authorities (LPA) to consider biodiversity impacts when assessing development proposals. Specifically, they need to ensure that impacts on any protected species are adequately evaluated and, where necessary, addressed with suitable avoidance, mitigation, or compensatory measures to maintain the favourable conservation status of the species. So, to avoid an offence under the *Conservation of Habitats and Species Regulations 2010*. This means sufficient data are required to categorise the type and size of any roost, sett, breeding, or resting area (etc.) affected by the development proposal before seeking planning consent, so that the LPA can consider this in their decision-making process.

The ODPM Circular 06/2005 guides the application of the law relating to planning and nature conservation in England, complementing the NPPF.

Biodiversity Net Gain (BNG) is a strategy that requires developers to deliver a 'net gain' of 10%; this is set out principally in Section 90A and Schedule 7A (Biodiversity Gain in England) of the *Town and Country Planning Act 1990*. It was inserted into the Act by Schedule 14 of the *Environment Act 2021* and became mandatory on 12 February 2024.

Developers must deliver a BNG of 10%. This means that development will result in a higher-quality natural habitat than before. Through site selection and layout, developers should minimise or mitigate any negative impacts on biodiversity. They must deliver at least 10% BNG, as measured by the statutory biodiversity metric.

There are three ways a developer can achieve BNG:

- They can create biodiversity on-site (within the red-line boundary of a development site).
- If developers cannot achieve all of their BNG on-site, they can deliver it through a combination of on-site and off-site approaches. Developers can either make off-site biodiversity gains on their land outside the development site or buy off-site biodiversity units on the market.

If developers cannot meet on-site or off-site BNG requirements, they must purchase statutory biodiversity credits from the government. This should be a last resort. The government will use the revenue to invest in habitat creation in England.

Policy 50 of the Wiltshire Core Strategy 2015 also outlines that development proposals should aim to prevent harm to protected habitats and species. The relevant aims for this project are:

- Development proposals must demonstrate how they protect features of nature conservation and geological value as part of the design rationale. There is an expectation that such features shall be retained, buffered, and managed favourably to maintain their ecological value, connectivity, and functionality in the long term. Where it has been demonstrated that such features cannot be retained, removal or damage shall only be acceptable in circumstances where the anticipated ecological impacts have been mitigated as far as possible and appropriate compensatory measures can be secured to ensure no net loss of the local biodiversity resource and secure the integrity of local ecological networks and provision of ecosystem services.
- All development proposals shall incorporate appropriate measures to avoid and reduce disturbance of sensitive wildlife species and habitats throughout the lifetime of the development.
- All development should seek opportunities to enhance biodiversity. Major development in particular must include measures to deliver biodiversity gains through opportunities to restore, enhance and create valuable habitats, ecological networks and ecosystem services.

1.4 Biodiversity Net Gain (BNG)

The proposed project will be subject to BNG under *Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the Environment Act 2021)*. Therefore, the development must deliver a BNG of 10%. This means that the development will result in more or better-quality natural habitat than before.

The biodiversity net gain is measured using the Statutory Metric published by DEFRA (2024), which measures the net gains in 'biodiversity units'. The aim is for development to achieve a measurable net gain in biodiversity. It follows the 'mitigation hierarchy' process of first avoiding and minimising biodiversity loss and providing positive habitat intervention, resulting in a net improvement to biodiversity.

The good practice principles for biodiversity net gain are outlined in Table 1.1 of Biodiversity Net Gain: Good Practice Principles for Development (Baker et al., 2019). The fundamental principles include:

- Apply the 'Mitigation Hierarchy' (in line with CIEEM Guidelines for Ecological Impact Assessment (EcIA)) (CIEEM, 2018) and be 'additional' by achieving outcomes that exceed existing obligations.
- Avoid losing biodiversity which cannot be offset elsewhere (e.g. irreplaceable habitats)
- Address risk (e.g. difficulty of achieving habitat creation/enhancement for net gain)
- Make a 'measurable' net gain contribution (e.g. calculated using an appropriate metric) and ensure that calculations are consistent and transparent (i.e. limitations and assumptions are identified)

- Ensure that the net gain design achieves the best possible outcome for biodiversity (this may require both quantitative and qualitative assessments) and creates a net gain legacy for long-term benefits.

1.5 Scope of Use

Aware Ecology has prepared this document for the sole use of the commissioning client. It may not be reproduced or relied upon by any other party without the prior and express written permission of Aware Ecology.

The findings in this report are based on conditions observed during the survey, and updated advice should be sought if more than two years have elapsed. The survey and report follow the CIEEM Guidelines for Preliminary Ecological Appraisal, Second Edition, December 2017, and BS42020.

2 Methods

2.1 Zone of Influence (ZOI)

The zone of influence of a project refers to the area beyond the site boundary that may be affected by the work being carried out. Due to the limited scope of work, the project's impacts will not extend beyond the site boundary.

Survey work concentrated on the habitats within the red line boundary. Desktop data checks were assessed up to 2km from the site.

2.2 Desk Study

The MAGIC website was reviewed to obtain records of any statutory and non-statutory designated sites within 2 km of the development, as well as any priority habitats within 1 km.

In addition, the following sources were consulted to gather ecological information on habitats such as waterbodies and woodlands within 1km of the site:

- Ordnance Survey 1:25,000 mapping
- Aerial imagery (Apple Maps)
- MAGIC Maps

2.3 Site Inspection

On 10/04/2026, a daytime site visit was carried out. This visit included a thorough assessment of the site's habitats, along with condition assessments (if applicable) to inform the BNG calculations. Any evidence of protected species or suitable habitats supporting them was also assessed.

2.3.1 Habitat

A habitat survey was completed within the red-line boundary of the plot, using the Phase 1 Habitat Survey approach (Joint Nature Conservation Committee 2003) and UK Habs, the standardised methodology for surveying habitat types. Introduced species and garden varieties are not always identified.

2.3.2 Bats

2.3.2.1 Daytime Survey

Any suitable trees were visually inspected using binoculars and, where necessary, a high-powered torch to examine individual features in more detail.

Details of any potential roost features (PRFs), such as holes, crevices or internal voids that roosting bats could use, were recorded and photographed. A search was also made for any evidence of bat presence, such as droppings or feeding remains, and any such field signs were noted.

The assessment of suitability for bats was based on the ecologist's professional judgement and experience in recognising evidence of bats and features that provide suitable roosting conditions, but followed the framework set out in current good practice guidelines published by the Bat Conservation Trust (Collins (ed), 2023). This framework is based on the number, location, and type of any potential roost features found, as well as the surrounding habitat. The categories for trees are **none**, **PRF-I**, **PRF-M**, or **confirmed roost**, where direct evidence of bats is found (Table 1).

Table 1. Bat Roost Suitability Assessment Criteria for trees (*Collins (ed), 2023*)

Suitability for Bats in Trees	Description
Negligible	A tree with no obvious features suitable for use by roosting bats. However, a small uncertainty remains as bats can use small and apparently unsuitable features on occasion.
PRF-I	PRF is only suitable for individual bats or very small number of bats either due to size or lack of suitable surrounding habitats
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony

FAR	Further assessment required to establish if PRFs are present in the tree
Confirmed Roost	A tree with direct evidence of bat presence, or an existing record of a roost

2.3.3 Birds

The site was assessed for potential nesting habitat, and any signs of nesting activity were recorded.

Bird species use a variety of habitats, including buildings, trees, shrubs, undergrowth, or open fields, for nesting. Therefore, all these features were taken into consideration. Along with these nesting features, any features that may provide shelter for overwintering birds and/or foraging for Schedule 1 birds were also considered.

2.3.4 Great Crested Newts

The suitability of any aquatic and terrestrial habitat on or near the site was assessed for use by Great Crested Newts (GCN) (*Triturus cristatus*). GCN travel up to 500m between breeding ponds using suitable terrestrial habitats. Therefore, ponds within a 500m radius of the site were identified using OS maps and aerial imagery, and connectivity to the site was also considered.

A suitable terrestrial habitat offers cover and foraging opportunities, including meadows, rough grassland with tall sward, scrub, woodland, and mature gardens. Hedges, ditches, stone walls, old farm buildings, piles of loose stone or rock, rabbit burrows, and small mammal holes contribute to a 'good' terrestrial habitat.

2.3.5 Reptiles

During the site visit, any features that reptiles may use for basking (e.g., south-facing slopes), hibernation (e.g., walls, piles of hardcore/wood), and foraging (e.g., rough grassland/scrub) were assessed. Many common reptiles share similar requirements across all of the above features (Beebee and Griffiths, 2000).

2.3.6 Badgers

Checks were undertaken to identify any areas within the site or the surrounding land that may be used by Badgers (*Meles meles*) for foraging and sett digging. These signs may include setts, foraging pits, pathways, and latrines (The Mammal Society 2024).

2.3.7 Barn Owl

The site was surveyed to assess barn owls' foraging potential and any roosting and/or breeding sites they may use. Barn Owls need a mixed habitat with extensive rough grassland/field margins, and a thick enough thatch layer to provide suitable shelter for their main prey (field voles), along with suitable roosting/nesting locations within 3-6km.

2.3.8 Other Protected Species

Any other protected species (e.g., otter, water vole) were not surveyed because the works are not expected to impact their suitable habitats, as there are no ponds/waterbodies on the site or within 200m of the red line boundary.

2.3.9 Invasive Non-Native Species (INNS)

The site was checked for signs of invasive non-native species (INNS), including flora and fauna.

2.3.10 Biodiversity Net Gain

2.3.10.1 Baseline Data

The site's habitat types are classified using the UK Habitat definitions and subjected to 'Condition' assessments (where applicable). Each habitat type can be calculated as an area (in hectares) or as linear features (e.g., hedgerows), which are measured in length (in kilometres). These values are then entered into the BNG metric calculator tool.

The Statutory Biodiversity Metric calculator tool uses these values (habitat types, conditions, area, or length) to calculate a total 'unit' for each mapped habitat or linear feature.

The habitats or linear features recorded are also assigned scores for 'Distinctiveness' and 'Strategic Significance', which further influence their total score value (DEFRA, 2024). The result will be an overall value, expressed as a 'Habitat Unit' or 'Hedgerow Unit', for each mapped feature, which will be summed to give a total baseline value within the red line boundary.

The metric includes a 'Street tree helper', which allows individual trees that fall outside scrub woodland and hedgerow areas to be converted into an area (in hectares) for input into the metric. Trees are categorised as 'small', 'medium' or 'large' and are automatically assigned an area using the Street Tree Helper based on their size class. For this assessment, the size classes assigned are as follows:

- Small Trees (Trees identified as 'young' or 'semi-mature' and which are less than one-third of their life expectancy)
- Medium trees (Trees identified as 'early mature' and which are one to two-thirds of their life expectancy)
- Large Trees (Trees identified as 'mature', 'over-mature' or 'veteran' and which are greater than two-thirds of their life expectancy or exhibit attributes of veteran trees)

2.3.10.2 Proposed Habitat Data

The future baseline conditions within the site are based on the proposed site plan drawing, with the client confirming certain aspects of the design drawing and habitats that were not obvious. The future baseline is initially overlaid on the existing baseline to calculate the area of habitats to be lost, retained and enhanced. This is used to calculate the gross biodiversity change within the site.

New target habitat types, 'distinctiveness' and 'condition' values are subsequently assigned to all proposed habitats on site, considering any habitat creation and outline proposals detailed in the most up-to-date documents provided by the client. Because calculating target habitats requires some degree of professional judgment, additional risk factors are included to account for the difficulty of restoring or creating habitats.

2.4 Limitations of this Evaluation

The surveys were undertaken by an experienced ecologist, following industry-standard good-practice methodology.

The survey was conducted within the optimal habitat survey period, from April to September. Therefore, most plant species would be visible and identifiable. However, some plant species (including INNS) may not be visible during the survey because they are not in evidence (i.e., present only as seeds or underground parts), are inconspicuous, or are impossible to identify. Sufficient plant species were present to confidently assess the ecological value of the present habitats.

The survey timings were suitable for identifying active-nesting birds and other protected species, while evidence of these species could also be recognised throughout the year.

Based on the conditions encountered during fieldwork and the results obtained, the survey provides a robust assessment of the likelihood of protected species. It is sufficient to inform of the mitigation requirements for the current proposals. The overall impact on biodiversity will likely be localised and of low significance. It is doubtful that the development will have any effect outside the works' footprint.

However, it should be noted that while every effort has been made to provide a comprehensive description and survey of the site, no investigation can ensure complete characterisation and prediction of the natural environment in a 'snapshot' study.

2.5 Survey Team

Daniel Howgego, ACIEEM, an ecologist with six years of experience in the ecological consultancy industry, completed the survey and assessment.

As a member of the Chartered Institute of Ecology and Environmental Management (CIEEM), he is bound by its professional standards and code of conduct, and he is appropriately experienced for the assigned tasks, as defined by the CIEEM competency framework (CIEEM, 2013).

3 Results

3.1 Desk Study

3.1.1 Designated Sites

The data search revealed three statutorily designated sites within the 2km search radius; these are outlined in Table 2.

Table 2. Summary of the statutory designated sites up to 2km from the site

Designated Site	Distance from Site (km)	Reason(s) for Designation
North Meadow & Clattinger Farm SAC	1.5km E	North Meadow and Clattinger Farm in the Thames Valley in southern England is one of two sites representing lowland hay meadows near the centre of its UK range.
Clattinger Farm SSSI	1.5km E	Clattinger Farm comprises a series of meadows and pastures which display a wide range of unimproved grassland types and an outstanding meadow flora. It constitutes the only lowland farm in Britain known to have received absolutely no agricultural chemicals.
Cotswolds Water Park SSSI	1.5km E	The Cotswold Water Park SSSI is of special interest for the following nationally important features: • breeding great crested grebe <i>Podiceps cristatus</i> ; little egret <i>Egretta garzetta</i> and little ringed plover <i>Charadrius dubius</i> ; • a diverse assemblage of breeding birds of lowland open waters, their margins and scrub; • non-breeding shoveler <i>Spatula clypeata</i> ; gadwall <i>Mareca strepera</i> ; pochard <i>Aythya ferina</i> ; tufted duck <i>Aythya fuligula</i> ; great crested grebe; coot <i>Fulica atra</i> ; green sandpiper <i>Tringa ochropus</i> and lesser black-backed gull <i>Larus fuscus</i> ; • an assemblage of over 20,000 waterbirds during the non-breeding season; and • populations of the aquatic plants starry stonewort <i>Nitellopsis obtusa</i> , lesser bearded stonewort <i>Chara curta</i> ;

		pointed stonewort <i>Nitella mucronata</i> and clustered stonewort <i>Tolypella glomerata</i> .
--	--	---

3.1.2 Watercourses and Waterbodies

Flagham Brook is 300m north of the site (ST 99151 94364), and two water bodies (i.e. ponds) are within 500m of the site. Both ponds are over 250m from the site and are within the nearby golf course.

3.1.3 Priority Habitats

The priority habitats of deciduous woodland and traditional orchards are located within 1 km of the site. None of the woodland is classed as ancient woodland.

3.1.4 Species Records

The notable species records from NBN Atlas within 2km of the site include Hedgehog, Common Pipistrelle, Soprano Pipistrelle, Daubenton's, Harvest Mouse, Lesser Horseshoe, Barbastelle, Badger, Noctule, Brown Long-eared Bat, Grass Snake, Common Lizard, Slow Worm, Great Crested Newt, Yellowhammer, Skylark, Curlew and Barn Owl.

Within 2 km of the site, the MAGIC website listed one EPS-licensed project, although it is unclear how up to date this database is. The EPS licences are shown in Table 3 below.

Table 3. Granted EPS licences within 5km of the site

Distance from Site	Orientation from Site	Date	Species Impacted	Roost Types Impacted
0.4km	South	2017	Great Crested Newt	Breeding Site (Damage), Resting Place (Destruction & Damage)

3.2 Daytime Site Inspection

3.2.1 Habitat

3.2.1.1 Other Cereal Crops (c1c7)

The site comprises an arable field sown with cereal crops. There is a thin margin (<0.5m) with species which include Perennial Ryegrass (*Lolium perenne*), Yorkshire Fog, Annual Meadow Grass (*Poa annua*), White Clover (*Trifolium repens*), Common Dandelion (*Taraxacum officinale*), Creeping Thistle (*Cirsium arvense*) and Broad-leaved Dock (*Rumex obtusifolius*).

3.2.1.2 Other Native Hedgerow (h2a6)

There are two hedgerows around the site boundary and within the site. These include:

- **H1** = Hedgerow >30 years old with some gaps forming, but it is not over-managed. It forms the south-east boundary of the site. The lack of management has allowed the species to grow to >2m in height. It is dominated by Hawthorn with occasional Elder, Dogrose, Blackthorn, Bramble and Ivy. The ground flora present includes Hogweed, Lesser Celandine, Bluebell, Perennial Rye Grass, and Dog's Mercury. There are some mature Ash trees within the hedge which show signs of dieback.
- **H2** = Short section of hedgerow along the north field boundary, which is more managed to a height of 1.5m and has a small undisturbed margin. The hedgerow section is largely dominated by Hawthorn, Elder and Bramble. The ground flora present includes Hogweed, Lesser Celandine, Bluebell, Perennial Rye Grass, and Dog's Mercury.

3.2.2 Biodiversity Net Gain

Section 3.2.1 outlines the habitats identified on-site that have been subjected to condition assessments (where applicable), as shown in Table 4 below.

Table 4. The classification, description and condition of each habitat on-site

UK Habs Classification	Description	Key Species Present	Condition
Other Cereal Crops (c1c7)	Cereal crops that don't meet the definition of c1c5 or c1c6	None	Not Applicable
Other Native Hedgerow (h2a6)	Native hedgerows with <4 species in a 30m section	Hawthorn, Elder, Bramble, Ivy, Ash	Poor: - A1 = Pass - A2 = Fail - B1 = Fail - B2 = Fail - C1 = Fail - C2 = Fail - D1 = Pass - D2 = Pass

3.2.2.1 Pre-development Biodiversity Value

The on-site baseline has been calculated as **0.98 habitat units** and **0.45 hedgerow units**; these values are representative of the site at the time of the application.

Table 5. Summary of the biodiversity units within the site baseline

Habitat	Area (ha)/Length (km)	Distinctiveness	Condition	Value (Habitat Units)
On Site				
Other Cereal Crops (c1c7)	0.49	Low	Not Applicable	0.98
Other Native Hedgerow (h2a6)	0.22	Low	Poor	0.45

Figure 3. Baseline habitat map of the site



3.2.2.2 Habitat Degradation

No action was undertaken before the survey that would have caused any degradation of the on-site habitats.

3.2.2.3 Irreplaceable Habitats

There are no irreplaceable habitats (as set out in *column 1 of the Schedule to the Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024*) within the redline boundary.

3.2.3 Bats

There are no buildings on the site, and there are limited trees within the boundary hedgerow.

The trees within the site could provide suitable roosting features, including the Ash trees, which are mature and possess features which tree-roosting bats could use. Dieback within the canopies could create rot features suitable for roosting bats. Therefore, these trees have been designated as 'Further Assessment Required' (FAR) in case any work is required on them.

The site collectively provides a low-potential roosting habitat for bats, while the surrounding landscape offers a moderate-quality foraging and commuting habitat along the boundary hedgerows.

Bat species recorded within 2km of the site include Common Pipistrelle, Soprano Pipistrelle, Daubenton's, Lesser Horseshoe, Barbastelle, Noctule, and Brown Long-eared Bat.

3.2.4 Birds

The hedgerows and trees within the site provide nesting opportunities for birds. Multiple disused nests were recorded around the site; therefore, it is likely that nesting birds will use the site.

3.2.5 Great Crested Newts

There are two bodies of water within 500 meters of the site. However, none are present on the site, so there is no suitable habitat available for breeding. The closest pond lies within the nearby golf course, with some vegetative corridors connecting it to the site.

Within the site, the terrestrial habitat is of poor quality for GCN due to the arable field's managed nature. Transitional and foraging individuals may utilise the surrounding hedgerows; however, these won't be impacted by the proposed work.

There are 74 GCN records within 2km of the site, none of which are functionally connected to it.

3.2.6 Reptiles

The site provides some suitable habitats for dispersion, basking, and foraging within the boundary hedgerows; however, these won't be impacted by the proposed work.

There are limited records of reptiles within 2km of the site, including a Grass Snake, Common Lizard, and Slow Worm. Therefore, their presence is considered unlikely but cannot be fully discounted given the suitability of the habitat within the surrounding landscape.

3.2.7 Badgers

No evidence of badgers (e.g., setts, latrines, hair, or footprints) was recorded on the site during the survey visit. Individuals may use the hedgerow boundary as a commuting route.

There is one badger record within 2km of the site.

3.2.8 Barn Owl

There was no suitable potential for breeding or foraging barn owls on-site due to the lack of rough grassland/field margins within the site. 3 Barn Owls have been recorded within 2km of the site.

3.2.9 Other Species

No other notable species were recorded as present on-site during the survey visit. The development would also cause no damage or disturbance to any areas used by hazel dormouse, otters or water voles. There was evidence of rabbit activity within the site, with several holes being dug around the boundary hedgerows.

3.2.10 INNS

No non-native species were recorded during the survey.

4 Evaluation and Recommendations

4.1 Likelihood of Use by Protected Species

4.1.1 Bats

No evidence of bats was observed during the survey, but the site could provide suitable features to support bat roosting within the mature trees along the site boundary, which individuals may use opportunistically as day roosts.

The site provides suitable foraging habitats and is surrounded by moderate-quality habitat in the broader landscape; therefore, foraging/commuting bats may pass through it.

4.1.2 Birds

No active nests were located during the survey. However, the vegetation within the site would provide suitable nesting habitat for various species, and nesting birds in the trees and hedgerows are considered likely.

4.1.3 Other Species

During the daytime survey, no other field signs were identified to indicate the presence of any other protected species within the vicinity of the site. However, there is a chance that transitional animals (e.g., reptiles, badgers, and hedgehogs) may pass through or use the site for foraging and refuge.

4.2 Predicted Impacts of the Proposed Development

The proposal is to build two agricultural buildings on the site, resulting in land-use changes.

4.2.1 Habitat

The current proposals will not affect any habitats of ecological value within the site, as the habitat lost comprises arable cropland. The boundary hedgerows and trees will be retained.

New planting within the development, along with the retention of the surrounding mature trees, will ensure the site continues to provide biodiversity value. Creating wildlife features, such as bat boxes, bird boxes, and insect towers, around the site will also benefit biodiversity.

4.2.2 Bats

The trees along the site boundary have unknown roosting potential (FAR); however, they are not being impacted by the proposed work. Therefore, all potential features will be retained. There will be no loss or severance of tree lines and/or hedgerows that may affect bat commuting routes.

An increase in general light levels around the new buildings could affect bat foraging and commuting.

4.2.3 Birds

Nesting birds in the hedgerow may be affected by disturbance. If work is scheduled during the nesting period (March to August inclusive), an experienced ecologist will check it before it commences. Installing bird boxes nearby could also reduce birds' chances of nesting in the affected areas.

4.2.4 Great Crested Newts

Studies have demonstrated that 95% of all GCN summer refuges fall within 63m of their summer breeding pond (Jehle, 2000). Subsequent studies also found that GCN capture rates were highest within 50m of a breeding site, with a significant reduction beyond 100m (Cresswell and Whitworth, 2004).

As the closest pond is 350m away (and it isn't known if it supports a population of GCN), Natural England's Rapid Risk Assessment tool indicates that an offence would be 'highly unlikely' given that the proposal will result in the loss of between 0.5 and 1ha.

4.2.5 Other Species

The proposed work is unlikely to affect transitional species (e.g., hedgehogs, reptiles, badgers) because hedgerows will be retained, and the only habitat lost is poor-quality cropland, which offers limited shelter or foraging opportunities for these species. Whilst no watercourses are affected, there will be no impact on otters or water voles.

4.3 Further Surveys and EPS Licensing

4.3.1 Bats

The trees within the boundary hedgerow have potential roosting features, as have been designated as 'Further Assessment Required'. Therefore, if any work is planned for these trees, further surveys will be required to determine the roosting potential of features within them. As no work is currently planned for the trees, no further surveys are currently required.

If the design proposal can include retention of the boundary hedgerow and tree lines, then further surveys for bats are not considered to be necessary, provided the following avoidance measures can be accommodated:

Any retained trees should be protected during works, in line with BS 5837: 2012 Trees in relation to design, demolition and construction. There is to be no loss or major severance (>10m) of treelines. The use of artificial lighting is to follow the protocols outlined in the Institute for Lighting Engineers document "Guidance Note 08/18 "Bats and Artificial Lighting in the UK: Bats and the Built Environment Series" (2018), to minimise disturbance and sky-glow across the site, and onto the boundaries.

4.3.2 Nesting Birds

Further surveys for birds are not considered to be necessary, provided the following avoidance measures can be accommodated:

Nesting birds may be present in the trees, scrub and buildings during the bird breeding season (March to August inclusive). If vegetation removal or building demolition is planned during these months, an ecologist should undertake a prior check (within 24 hours of the works) for nesting birds. Any active nests that are found must not be moved until fledglings have dispersed.

4.3.3 Other Species

The **Avoidance Measures** (Section 4.4) must be followed during the work. If any protected species is found at unsupervised times, work will stop immediately, and the ecologist will be called for advice (**Aware Ecology 07470433712**).

All contractors working on the proposed development must read this report to ensure they know about the legal protection afforded to protected species and their places of shelter, and how to proceed if anything is discovered during the work (*if any protected species are found at unsupervised times, work will stop immediately, and the licensed ecologist will be called for advice*).

4.4 Mitigation / Avoidance Measures

4.4.1 Protected Species

The **Avoidance Measures** below outline safe working methods to protect protected and notable species.

4.4.1.1 Bats

- There is a likelihood that bats roosting in the surrounding landscape will forage and/or commute over and around the site. The surrounding trees should be maintained/enhanced to ensure flyways are available for bats, and a lighting plan should be implemented that reflects the guidance of the Bat Conservation Trust's 'Bats and Lighting in the UK' (2018). This includes ensuring the building is not directly lit, particularly at the eaves or roof level. If new lighting is required, it is good practice to use low-level lamps, such as hooded or cowed lamps, to minimise unnecessary light spillage. Additionally, incorporating motion sensors or timers can limit illumination to essential periods, as Brown long-eared bats are particularly susceptible to artificial lighting. As long as artificial lighting is used appropriately during and after development, the proposals are considered small-scale and will not impact habitats (or dark sky sites) beyond the site boundaries.
- **Any new external lamps will be PIR-activated and 40 W max (8 W LED equivalent), ~500 to 700 lumens (warm white 2700 K to avoid blue-white wavelengths). They will be set to deactivate after at most 2 minutes, with a cowl to direct light downward (no more than 70°). The lights should face away from the retained vegetation to maintain a dark corridor for commuting/foraging bats.**

- Bats will likely be flying around buildings at night in late spring, summer, and early autumn, and they may investigate any new crevices or cavities exposed on the walls or roof during building works. Any such holes or gaps must be securely covered/blocked at the end of each day's work to prevent bats from having the opportunity to use them for shelter.

In the unlikely event that a bat is encountered, work in that area must **STOP** immediately, and advice must be sought from a licenced bat ecologist before resuming (**contact Aware Ecology on 07470433712**).

4.4.1.2 *Birds*

Any on-site de-vegetation work or work to the buildings should be completed outside the breeding bird season (March to August inclusive) or after a pre-works survey/search by a suitably experienced ecologist. However, as the broader landscape contains other suitable nesting habitats, any negative impacts on nesting birds are unlikely to extend beyond the site. The presence of nesting birds on site is considered likely.

If any active nests are found, work in that area must **STOP** immediately, and an ecologist must be consulted before resuming (**contact Aware Ecology on 07470433712**). The nests and a 10 m buffer zone will be protected until nesting is complete and the young have fledged.

4.4.1.3 *Great Crested Newts*

The site has limited suitable terrestrial habitats; therefore, it is unlikely that GCN could be discovered during construction. However, safe working methods will be implemented to prevent harm or disturbance to individuals.

Any building materials will be stored off the ground (on pallets or similar) to prevent crushing any animals that might seek refuge beneath them when the materials are lifted.

Any excavations should be done between mid-November and February and filled before the end of February. If this isn't possible and trenches are created after February, earth ramps will be constructed in each trench, in consultation with the consultant, to allow newts to escape. The trenches will then be inspected each morning before being filled.

De-vegetation work will be completed using a two-cut method. After a fingertip search, the first cut should be down to 300mm and left for 24 hours. An experienced ecologist will then complete a second fingertip search to ensure no GCN are present. The next cut can then be done down to ground level. The cutting should also be directed towards an area of retained habitat, providing individuals with a safe place to move.

If a Great Crested Newt is found on or near the work site, work will **STOP** in that area, and a licensed Great Crested Newt worker (**Aware Ecology, 07470 433712**) will be contacted immediately for advice.

4.4.1.4 *Reptiles*

There is a low chance that reptiles could be present along the site boundary. Therefore, safe working methods will be implemented to discourage reptiles from occurring on-site. These methods should include maintaining the habitat at a low level (approximately 300 mm during winter) to reduce the site's suitability for reptiles.

During construction, piles of materials and excavated earth should be stored away from the boundaries to deter reptiles from using them for temporary cover.

De-vegetation work on the grassland and scrub will be done during winter and should follow a two-cut method. The first cut should be down to 300mm, followed by a fingertip search by an experienced ecologist to ensure no reptiles are present. The next cut can then be done down to ground level. The cutting should also be directed towards an area of retained habitat, providing individuals with a safe place to move.

If a reptile is discovered on the work site, work will **STOP** in that area, and we will contact an experienced ecologist (**Aware Ecology, 07470 433712**) immediately for advice.

4.4.1.5 *Badgers*

To prevent badgers from becoming trapped in excavation works, excavations should either not be left uncovered overnight or include escape routes for badgers, such as wooden planks at least 60cm wide at no greater than 30°, or graded earth banks. This methodology is also beneficial to hedgehogs.

Before construction, any exposed pipes and trenches must be checked for trapped wildlife each morning.

4.4.1.6 *Other Species*

Under the *Wild Mammals (Protection) Act 1996*, it is an offence to intentionally inflict unnecessary suffering on any wild mammal, as specified by the Act. This legislation may need to be considered where the destruction of occupied rabbit warrens and burrow systems is contemplated. If the warrens are occupied, it is recommended to hand-dig them until you reach a level where the entire burrow system can be inspected and confirmed empty.

4.4.2 *Precautionary Measures*

The proposed groundwork must be confined to areas that will not affect the root systems of existing and retained trees within the grassland and boundary hedgerows. An appropriate buffer (as detailed in BS5837:2012) must be established and maintained throughout the works.

Retained habitats must be protected by establishing strict working areas to prevent impacts on surrounding habitats or species.

Construction work should be limited to daylight hours. Prohibiting night-time work will protect the site from the potential adverse effects of noise, activity, and lighting.

4.5 Ecological Enhancement

The enhancements in this report aim to meet the requirements set out in *Policy 50 of the Wiltshire Core Strategy 2015* to enhance existing biodiversity and create new biodiversity features on site.

4.5.1 Biodiversity Net Gain

The site comprises an area of cropland for development. The remaining habitat will be retained and enhanced.

Post-intervention habitat creation and enhancement, which will be delivered alongside development (includes the following:

- Creation of an area of 'other neutral grassland'; the grassland will be seeded using a wildflower/grass seed mix to create a species-rich grassland (Emorsgate EM2 or EM3)
- A native hedgerow will be created by planting native species, including hawthorn, blackthorn, hazel and honeysuckle.

Table 6. Summary of retained and enhanced habitats

Habitat	Area (ha)/Length (km)	Existing Condition	Target Condition	Time to Target Condition	Difficulty Level of Enhancement	Habitat Units Delivered
Retained On Site						
Other Native Hedgerow (h2a6)	0.22	Poor	Poor	-	-	0.45

Table 7. Summary of created habitats

Habitat	Area (ha)/Length (km)	Target Distinctiveness	Target Condition	Time to Target Condition	Difficulty Level of Creation	Units Delivered
On Site						
Developed Land; Sealed Surface (u1b)	0.23	V.Low	Not Applicable	0	Low	0.00
Other Neutral Grassland (g3c)	0.26	Medium	Moderate	5	Low	1.74
Other Native Hedgerow (h2a6)	0.054	Low	Poor	1	Low	0.10

Figure 4. Proposed habitat map of the site



4.5.1.1 Total Net Gain

The completed post-intervention calculation will be submitted as part of the Biodiversity Gain Plan (per *Paragraph 12 and Part 1A of Schedule 7A of the Town and Country Planning Act 1990*), which is to be submitted no earlier than the day after planning has been granted.

This calculation shows how the development will achieve a 10% net increase in biodiversity, in line with Chapter 15, paragraph 174, of the NPPF and the Environment Act 2021.

The site will achieve an **ON-SITE NET GAIN** of **77.61% (0.76 units)** for habitats and an **ON-SITE NET GAIN** of **18.74% (0.06 units)** for hedgerows, as shown in Figure 5 below.

Figure 5. Headline BNG results

FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Area habitat units	0.76
	Hedgerow units	0.08
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Area habitat units	77.61%
	Hedgerow units	18.74%
	Watercourse units	0.00%
Trading rules satisfied?	Yes ✓	

4.5.2 Species Enhancements

The site will be enhanced for nesting birds and roosting bats by erecting one artificial bird box and one bat box on suitable features at the site perimeter or on the buildings themselves. These will consist of various durable, woodcrete bat and bird boxes, including maintenance-free boxes suitable for trees (see Appendix).

The bat boxes will be placed on the south-east to south-west aspects, ideally, with linear features nearby, to allow bats to disperse undisturbed to local foraging habitat and in positions where the entrance is not artificially illuminated at night (enabled by the provision of the 'dark corridor'). Boxes will be positioned at least 3m from the ground.

The bird boxes will also be in secluded positions, ideally within dense cover and at a minimum height of 3 metres from ground level. Other nest boxes, such as swift, house sparrow, and house martin-specific boxes, should be placed in

accordance with their guidelines. An artificial swallow cup could also be installed high up inside a building, such as a garage or outbuilding, providing constant, easy access.

It is also recommended that insect bricks (or similar) be incorporated into the design or placed within the site.

Table 8. Compensation enhancement measures for biodiversity

Species	Enhancement Type
Bats	- 1x External bat box ¹
Birds	- 1x Bird box -
Other Species	- Invertebrate habitat features (e.g. bug hotel, solitary bee boxes) - Wildlife friendly planting (i.e. wildflowers good for nighttime flying insects)
Lighting	- Keep it to essential lighting only that is directional rather than floodlights - Use motion sensors/timers and hoods to limit unnecessary illumination

¹ To be placed following guidance from Bat Conservation Trust Bat Box Information Pack (2018) e.g. at least 4m high facing south, southeast or southwest. Summer maternity roosts in the Northern Hemisphere often face south or west for maximum solar heating. Male roosts and hibernation sites typically have a northerly aspect (BCT 2020)

5 Legislation

5.1 Biodiversity Net Gain

In England, BNG is mandatory under Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the Environment Act 2021).

Developers must deliver a BNG of 10%. This means development will result in more or better-quality natural habitat than before.

Through site selection and layout, developers should avoid or reduce any negative impact on biodiversity. They must deliver at least 10% BNG, as measured by the statutory biodiversity metric.

There are three ways a developer can achieve BNG.

- They can create biodiversity on-site (within the red-line boundary of a development site).
- If developers cannot achieve all of their BNG on-site, they can deliver through a mixture of on-site and off-site. Developers can either make off-site biodiversity gains on their own land outside the development site or buy off-site biodiversity units on the market.
- If developers cannot achieve on-site or off-site BNG, they must buy statutory biodiversity credits from the government. This should be a last resort. The government will use the revenue to invest in habitat creation in England.

5.2 Bats

All species of British bat are protected by The 'Wildlife and Countryside Act 1981' (as amended), extended by the 'Countryside and Rights of Way Act 2000' (CROW Act). This legislation makes it an offence to:

- intentionally kill, injure or take a bat;
- possess or control a bat;
- intentionally or recklessly damage, destroy or obstruct access to a bat roost; and
- intentionally or recklessly disturb a bat whilst it occupies a bat roost.

Bats are also European Protected Species listed on Schedule 2 of the 'Conservation of Habitats and Species Regulations 2017' under Regulation 41. This legislation makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats in such a way as to be likely to (a) impair their ability to (i) survive, breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or b), to affect significantly the local distribution or abundance of the species to which they belong; and
- damage or destroy a breeding site or resting place of a bat; and
- possess, control, transport, sell, exchange a bat, or offer a bat for sale or exchange.

All bat roosting sites receive legal protection even when bats are not present.

Where it is necessary to carry out an action that could result in an offence under the 'Conservation of Habitats and Species Regulations 2017', applying for a European Protected Species (EPS) licence from Natural England (NE) is possible. Three tests must be satisfied before this licence (to permit otherwise prohibited acts) can be issued:

- *Regulation 53(2)(e)* states that licences may be granted to “preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.”
- *Regulation 53(9)(a)* states that a licence may not be granted unless “there is no satisfactory alternative”.
- *Regulation 53(9) (b)* states that a licence cannot be issued unless the action proposed “will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range”.

5.3 Birds

All species of bird are protected under *Section J* of the ‘*Wildlife and Countryside Act 1981*’ (as amended). The protection was extended by the ‘*CRoW Act*’.

The legislation makes it an offence to intentionally:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

Certain species of bird are listed on *Schedule 1* of the ‘*Wildlife and Countryside Act 1981*’ (as amended) and receive protection under *Sections 1(4)* and *1(5)* of the Act. The protection was extended by the ‘*CRoW Act*’. The legislation confers special penalties where the above-mentioned offences are committed for any such bird and makes it an offence to intentionally or recklessly:

- disturb any such bird, whilst building its nest or it is in or near a nest containing dependent young; or
- disturb the dependent young of such a bird.

5.4 Great Crested Newt

Great Crested Newt is listed on *Schedule 5* of the ‘*Wildlife and Countryside Act 1981*’ (as amended) and receives full protection under *Section 9*. These species are also listed as European Protected Species on *Schedule 2* of the ‘*Conservation of Habitats and Species Regulations 2017*’ which gives them full protection under *Regulation 41*. Protection was extended by the ‘*CRoW Act*’.

Under the above legislation it is an offence to:

- kill, injure or take an individual of such a species;
- possess any part of such species either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by such species for shelter, rest, protection or breeding;
- intentionally or recklessly disturb such a species whilst using any place of shelter or protection; or
- sell or attempt to sell any such species.

The Great Crested Newt is included as a Priority Species in the UK Biodiversity Action Plan (UKBAP) and also as a species of principal importance for the conservation of biological diversity in England under *Section 74* of the ‘*CRoW Act*’.

5.5 Reptiles

Common Lizards, Grass Snake, Slow-worm and Adders are listed under *Schedule 5* of the ‘*Wildlife and Countryside Act 1981*’ (as amended), in respect of *Section 9(5)* and part of *Section 9(1)*. This protection was extended by the ‘*CRoW Act*’.

Under the above legislation it is an offence to:

- intentionally or deliberately kill or injure any individual of such a species; or
- sell or attempt to sell any part of the species alive or dead.

5.6 Badger

Badger is protected in Britain under the ‘*Protection of Badgers Act 1992*’ and *Schedule 6* of the ‘*Wildlife and Countryside Act 1981*’ (as amended).

The legislation affords protection to Badgers and Badger setts and makes it a criminal offence to:

- willfully kill, injure, take, possess or cruelly ill-treat a Badger, or to attempt to do so;
- interfere with a sett by damaging or destroying it;
- to obstruct access to, or any entrance of, a Badger sett; or
- to disturb a Badger when it is occupying a sett.

5.7 INNS

INNS are on *Schedule 9* of the ‘*Wildlife and Countryside Act 1981*’ (as amended)

Under this legislation, it is illegal:

- to plant, or otherwise cause to grow in the wild, any plant listed in *Schedule 9* to the Act;

- to release, or allow to escape into the wild, any animal not ordinarily resident in Great Britain and not a regular visitor to Great Britain in a wild state or is listed in Schedule 9.

Plant INNS are also listed under the '*Environmental Protection Act 1990*' which requires soil or other waste containing Schedule 9 plant species material (live biomass, seeds, fruits, flowers) to be classified as Controlled Waste and must be disposed of at a landfill site that is authorised to accept it.

6 References

- Baker, J., (2016). Biodiversity Net Gain: Good practice principles for development. CIEEM, CIRIA & IEMA.
- Baker J., Hoskin, R. & Butterworth, T. (2019). Biodiversity Net Gain: Good Practice Principles for Development. A practical guide. CIEEM, CIRIA & IEMA.
- Barn Owl Trust (2021) Little Owl Nest Box. <https://www.barnowltrust.org.uk/product/little-owl-nest-box/>
- Barn Owl Trust (2021) Barn owl boxes for trees. <https://www.barnowltrust.org.uk/barn-owl-nestbox/owl-boxes-for-trees/>
- Bat Conservation Trust (2018) Bats and Artificial Lighting in the UK. <https://cdn.bats.org.uk/uploads/pdf/Resources/ilp-guidance-note-8-bats-and-artificial-lighting-compressed.pdf?v=1542109349>
- Bat Conservation Trust (2018) Bat Box Information Pack. <https://cdn.bats.org.uk/uploads/pdf/Bat-Box-Information-Pack-Sept-2020-JF.pdf?v=1600095860>
- Bat Conservation Trust (2020) Bats and Buildings. <https://cdn.bats.org.uk/uploads/pdf/Resources/Bats-and-Buildings.pdf?v=1646659085>
- Biodiversity Metric 3.0 User Guide (Panks et al, 2021) and Technical Supplement (Panks et al, 2021) (including the Condition Assessment Sheets for each habitat type).
- Beebee, J & Griffiths, R (2000) Amphibians and Reptiles: A Natural History of the British Herpetofauna
- Chartered Institute of Ecology and Environmental Management (2013) Competencies for Species Surveys: Bats CIEEM, Winchester.
- Collins J. (ed). (2016) Bat Surveys for Professional Ecologists – Good Practice Guidelines (3rd Edition). The Bat Conservation Trust, London.
- Chartered Institute of Ecology and Environmental Management (2015) Guidelines for Ecological Report Writing. CIEEM, Winchester.
- DEFRA (2024). The Statutory Biodiversity Metric User Guide. https://assets.publishing.service.gov.uk/media/669e45fba3c2a28abb50d426/The_Statutory_Biodiversity_Metric_-_User_Guide__23.07.24_.pdf
- English Nature (2004) Bat Mitigation Guidelines
- English Nature (2006) Dormouse Conservation Handbook
- Fresh Water Habitats Trust (2023) Creating Garden ponds for wildlife. <https://freshwaterhabitats.org.uk/wp-content/uploads/2013/09/Creating-Garden-Ponds-for-Wildlife-1.pdf>
- JNCC (2010) Handbook for Phase 1 habitat survey - a technique for environmental audit. <https://data.jncc.gov.uk/data/9578d07b-e018-4c66-9c1b-47110f14df2a/Handbook-Phase1-HabitatSurvey-Revised-2016.pdf>
- MAGIC website. <https://magic.defra.gov.uk>
- National Planning Policy Framework (2021). Ministry of Housing, Communities and Local Government
- Natural Explorer (2023) Creating Reptile/Amphibian hibernacula and refuges.
- NBN Atlas. https://records.nbnatlas.org/explore/your-area#52.03|-2.735|13|ALL_SPECIES
- The Mammal Society (2024) Badger. <https://mammal.org.uk/british-mammals/badger#:~:text=Surveying%20is%20generally%20a%20sett,badger%20movement%20or%20behaviour%20and>

7 Appendix

7.1 Site Photos

Photo 1 – Overview of the site



Photo 2 – Overview of the site



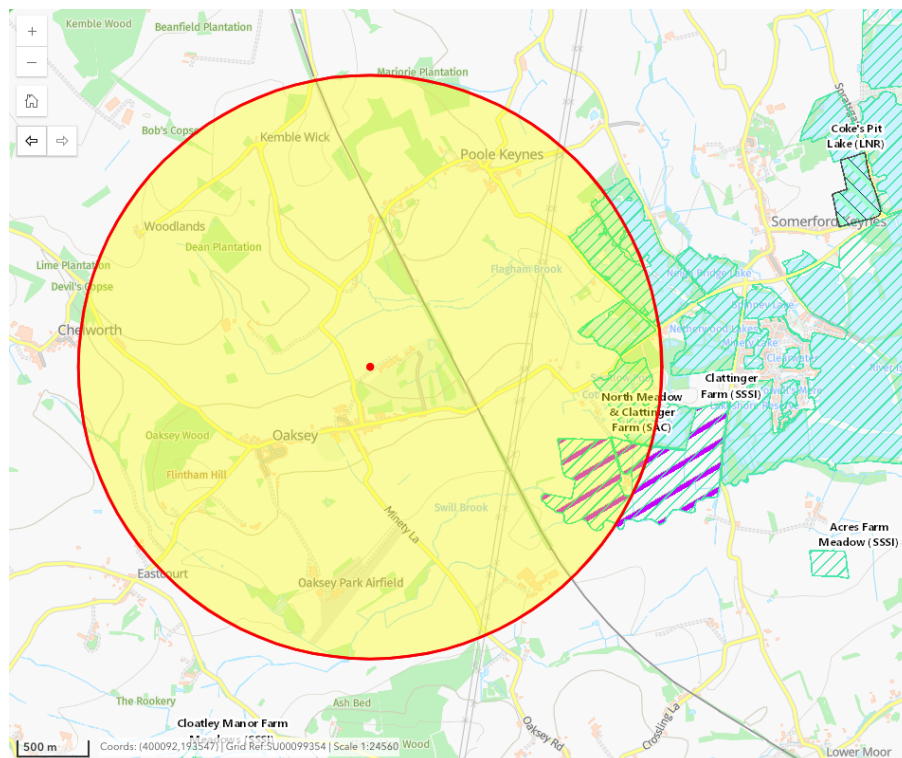
Photo 3 – Overview of the site



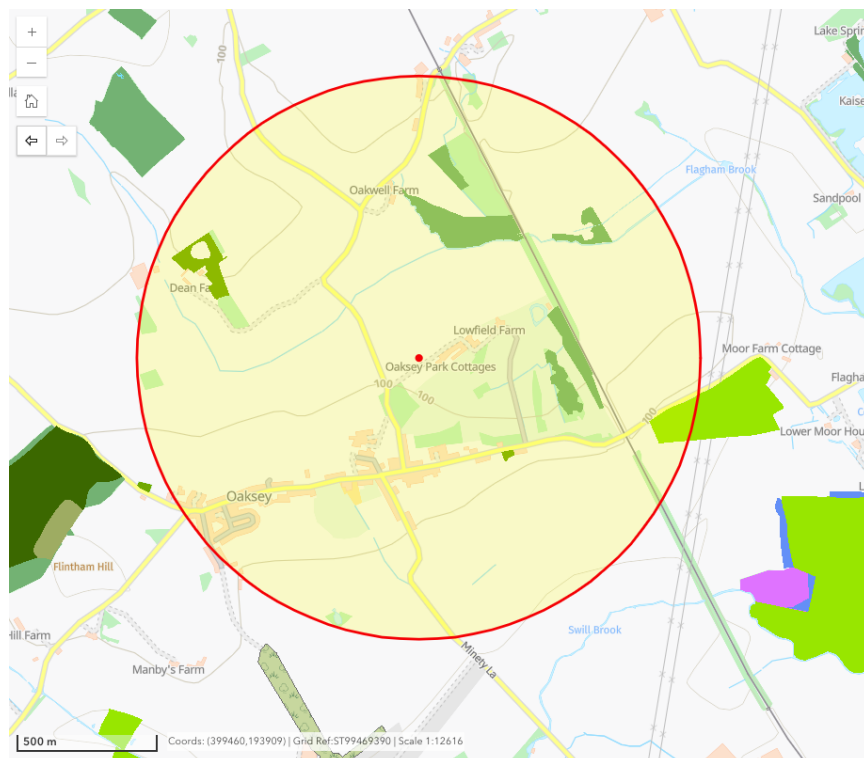
Photo 4 – Overview of the site



7.2 Designated Sites



7.3 Priority Habitats



7.4 Recommended Bat Boxes

Bat boxes should be provided to enhance the site's biodiversity and replace any lost roosts during construction.

- **Ecostyrocrite Crevice and Hollow Bat Boxes.** These should be installed where they are sheltered from the wind but unshaded for most of the day at a mix of heights from 3m-5m. Summer maternity roosts should be on a south-easterly to south-westerly aspect. There should be a clear flight line into the box, so ensure nothing is impeding the entrance to the box. Different bat species prefer different boxes, so a mix would provide more chances for use. (<https://www.greenwoodsecohabitats.co.uk/shop>)
- **Schwegler or Vivara Pro Bat Boxes.** These should be installed as above. (<https://www.nhbs.com/en/4/bat-boxes>)
- **Bat Block.** These should be positioned within the wall during construction. Aim to position South or West facing for a summer maternity roost or north-facing for a winter hibernation roost.
- **Kent Bat Box.** Boxes are best fixed as high as possible in sheltered/shaded locations with a clear flight to the box entrance. Exposure to the sun for part of the day is acceptable. Several boxes may be placed together.
- **Soffit Bat Box.** Boxes are placed within the soffit, and access is created via a 20mm slot in the back of the soffit board against the external wall.
- **Pole Mounted Bat Box.** These are an ideal solution when no suitable building or tree is available to mount a bat box. It can come in one or two boxes and have a 4-, 5- or 6-metre metal pole. (<https://www.nestbox.co.uk/products/pole-mounted-bat-box>)

HALF AND HALF BAT BOX



£50

Individually Handmade - Specifications are in cm and approximate.
External: 44 high x 22 wide x 10 deep
Internal: Vertically, one half of the box is a Two Crevice design, the other half of the box has the Small Hollow design.
Weight approx. 8kg
For where the bat species is unknown or to be suitable for a wider range of species.

MEDIUM HOLLOW BAT BOX



£66

Individually Handmade - Specifications are in cm and approximate.
External: 44 high x 22 wide x 13 deep
Internal: 41 x 17 x 7.5
Weight approx. 9kg
Designed for larger groups of bats who prefer a wider cavity - described as **Hollow**, such as Brown Long Eared, Noctules, Myotis Sp.

TWO CREVICE BAT BOX



£53

Individually Handmade - Specifications are in cm and approximate.
External: 44 high x 22 wide x 10 deep
Internal: 41 x 17 x 1.8 crevices @ 2
Weight approx. 8kg
Designed for small groups of crevice dwelling bat species, such as Common and Soprano Pipistrelles.

<https://www.greenwoodsecohabitats.co.uk/shop>

7.5 Recommended Bird Boxes

The provision of bird boxes is a recommendation as they enhance biodiversity on the site and replace any lost nests during the construction phase. Ideally, these should be either swift boxes, house martin nests or sparrow terrace nest boxes due to the declining populations of these species, but other nest boxes can be used, as discussed below.

- **Schwegler and Manthorpe Swift bricks** (this would be the preferred option). These should be installed in sheltered locations (such as under the eaves of a suitable building), installed at a minimum height of 2m and orientated in a southerly/ westerly direction.
- **WoodStone Swift Nest Boxes** should be installed in sheltered locations (such as under the eaves of a suitable building), at a minimum height of 2m, and orientated southerly/ westerly.
- **Schwegler Single & Double House Martin Nests**. These should be installed in sheltered locations (such as under the eaves of a suitable building), installed at a minimum height of 2m and orientated in a southerly/ westerly direction (ensuring they have enough shade).
- **Schwegler 1SP Sparrow Terrace nest boxes**. These should be installed in a sheltered location upon a suitable building, at a height no less than 2m and orientated in a southerly or westerly direction.
- **Schwegler Woodcrete 1B nest boxes (for trees) and/ or Schwegler Bird House nest boxes (for buildings)** should be installed upon a suitably mature tree and/ or upon a suitable building at a height of no less than 2m and orientated in a southerly or westerly direction.
- **Wooden Barn Owl box**. These can be installed on trees or buildings more than 1km from motorways. They should be 3m above ground level with minimal obstructions leading to the opening. Trees should be mature with thick trunks and located within a hedgerow or woodland edge.
- **Little Owl box**. The Little Owl nestbox should be erected horizontally at least 3 metres (10 feet) above the ground on a wall top, beam or tree branch so that Little Owl owlets can walk in and out before fledging. Little Owls prefer nest boxes in open-sided or open-fronted buildings rather than enclosed places. A thin layer of untreated wood shavings or bark can be provided as a floor covering.



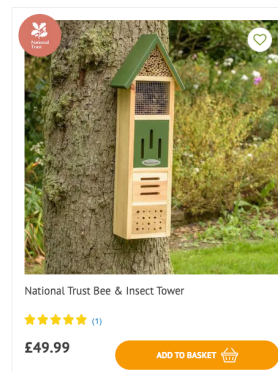
<https://www.nestbox.co.uk/collections/bird-boxes>

7.6 Other Biodiversity Enhancements

- **Hedgehog Highways.** Minimum 150mm x 150mm gaps to be left in fencing/ boundaries between adjoining plots where suitable habitat exists or is created. (<https://www.hedgehoghighway.co.uk/shop/>)
- **Insect boxes/Bee Banks/Bee Bricks.** Good for a wide range of invertebrates. Can be prefabricated/off-the-shelf units or constructed using available materials. Bee banks can be constructed from a layer of turf, soils and sands to create low mounds / vertical faces with a sunny aspect—ideally 1 per property. (<https://www.birdfood.co.uk/wildlife/bees-insects>)
- **Habitat Pile.** Create a log pile by loosely arranging together old branches or pieces of log, leaving the bark on and using a variety of species if possible. Place the pile in a shady place, such as under a tree, at the foot of a hedge, at the back of the border or behind the shed.



Hedgehog Highway – 2 Pack



7.7 Recommended Native Planting

7.7.1 Native Hedgerow/Shrub Composition

Hedgerow

Field maple *Acer campestre*
Hazel *Corylus avellana*
Hawthorn *Crataegus monogyna*
Elder *Sambucus nigra*
Holly *Ilex aquifolium*
Blackthorn *Prunus spinosa*
Dog rose *Rosa canina*
Spindle *Euonymus europaeus*
Dogwood *Cornus sanguinea*

Shrubs (<https://www.wildlifetrusts.org/actions/how-make-shrub-garden-wildlife>)

Barberry *Berberis* spp.
Bell Heather *Erica cinerea*
Box *Buxus sempervirens*
Cotoneaster spp.
Currant *Ribes* spp.
Elder *Sambucus nigra*
English Lavender *Lavandula angustifolia*
Firethorn *Pyracantha* spp.
Forsythia spp.
Guelder Rose *Viburnum opulus*
Hazel *Corylus avellana*
Heather (Ling) *Calluna vulgaris*
Hebe spp.
Holly *Ilex aquifolium*
Honeysuckle *Lonicera periclymenum*
Ivy *Hedera helix*
Privet *Ligustrum vulgare*
Skimmia *Skimmia japonica*
St John's Wort *Hypericum* spp.
Sweet box *Sarcococca confusa*
Witch hazel *Hamamelis* spp.

7.7.2 Native Tree Composition

Field Maple *Acer campestre*
Alder *Alnus glutinosa*
Silver Birch *Betula pendula*
Hazel *Corylus avellana*
Hawthorn *Crataegus monogyna*
Beech *Fagus sylvatica*
Holly *Ilex aquifolium*

Crab Apple *Malus sylvestris*
Cherry *Prunus avium*
Bird Cherry *Prunus padus*
Oak *Quercus robur*
White Willow *Salix alba*
Whitebeam *Sorbus aria*
Rowan *Sorbus aucuparia*
Small-leaved Lime *Tilia cordata*
Goat Willow *Salix caprea*

7.7.3 Grassland & Wildflower Seed Mixes

Mixture EL1 contains slow-growing grasses with a selection of wildflowers that respond well to regular short mowing. It contains 20% wildflowers and 80% meadow grasses. The information below is from <https://wildseed.co.uk/product/mixtures/complete-mixtures/special-habitat-mixtures/flowering-lawn-mixture/>

Mixture EM2 is a complete mix composed of 15% native wildflowers and 85% slow growing grasses (by weight). It contains species that are characteristic of traditional meadows across a wide range of soil types. The information below is from <https://wildseed.co.uk/product/mixtures/complete-mixtures/general-purpose-meadow-mixtures/standard-general-purpose-meadow-mixture/>

Mixture EM3 is a complete mix composed of 20% native wildflowers and 80% slow growing grasses (by weight). It contains a very wide range of species. It may be used to create a very diverse sward where conditions vary across a site. It is also useful in situations where precise soil and site characteristics have not been established before sowing. The information below is from <https://wildseed.co.uk/product/mixtures/complete-mixtures/general-purpose-meadow-mixtures/special-general-purpose-meadow-mixture/>

Pond edge mixture EP1 contains wildflowers and grasses suitable for sowing at the wet margins of ponds, streams and ditches. The information below is from <https://wildseed.co.uk/product/mixtures/complete-mixtures/special-habitat-mixtures/pond-edge-mixture/>

Mixture EH1 contains wildflowers and grasses that are tolerant of semi-shade and are suitable for sowing beneath newly planted or established hedges, within orchards and on woodland edges, rides and glades. The information below is from <https://wildseed.co.uk/product/mixtures/complete-mixtures/special-habitat-mixtures/hedgerow-mixture/>