

Preliminary Ecological Appraisal

The Lake House
Old Hollow
West Sussex
RH10 4TB

Date: July 2024

Revision: Original

1 Summary

Site	The Lake House, Old Hollow, Rowfant, Nr Copthorne, West Sussex, RH10 4TB
Central OS Grid Reference	TQ 31628 37593
Report Commissioned by	Planit Consulting
Report Purpose	To inform a full Planning Application
Date of Survey	3 rd June 2024
Author	Zenobia Hatch BSc (Hons), Ecologist
Reviewed & Approved by	Graeme Down BSc (Hons) PhD MCIEEM, Principal Ecologist
Version	Original, July 2024.

Considerations	Description	Comments & Recommendations
Ecological Importance of the Site	The site comprises of the following habitats: • Buildings • Built-up areas and gardens • Developed land; sealed surface • Scattered trees	Scattered trees are of site importance due to the structure they provide. All other habitats are of negligible importance due to poor plant diversity and high levels of disturbance.
Further Assessments / Surveys	Badgers	A pre-construction badger survey, six weeks before site clearance / construction commences.
	Bats roosts: Buildings	Three bat emergence surveys between May and August (one of these may extend into September) of building B1a. The surveys must be spaced at least three weeks apart in suitable weather conditions.
Avoidance and General Mitigation	Mill Pond	Design and implement a Construction Environmental Management Plan (CEMP) to avoid impacts to Mill Pond.
	Scattered trees and vegetation within the ownership boundary	Protect these retained features and replant any trees / vegetation lost to development with native species of local provenance.
	Reptiles	Continue current maintenance of the built-up areas and gardens to prevent the grassland from developing into suitable reptile habitat.
	Birds	Clear any woody vegetation and buildings outside the nesting bird season, or after a nesting bird survey by a competent person if clearance is scheduled between March and August (inclusive).
	Bat roosts: Buildings	One bat box suitable for hibernation should be installed on a retained tree.

Considerations	Description	Comments & Recommendations
	Bat roosts: Trees	Sectional felling of the tree on-site that has PRF-I suitability for roosting bats. Install one bat box onto a retained tree to mitigate for the loss of this tree.
	Bats: Foraging and commuting	Implement a sensitive lighting strategy. Replant trees lost to development.
	Hazel dormice	Implement a sensitive lighting strategy.
	Hedgehog	Provide hedgehog links within any new fencing.
	Site measures	Cover trenches or provide planked escape routes to allow any animals that fall in to escape. Store materials off the ground.
Enhancements	To increase the ecological value of the site.	Plant a native hedgerow on the eastern boundary, install wildlife boxes for birds, bats and insects, provide a hedgehog house, and create a swathe of uncut grassland.
Biodiversity Net Gain	Baseline calculation	Habitat units: 4.61 Hedgerow units: 0 Watercourse units: 0
Conclusion	Further surveys are needed to inform full impacts of the proposals on roosting bats. Avoidance and mitigation measures for other ecological receptors are possible to secure by condition, including the pre-commencement badger survey. The proposal offers opportunities for biodiversity enhancements within the site.	

Contents

1	Summary.....	1
2	Introduction.....	4
2.1	Background.....	4
2.2	Site Location and Description.....	4
2.3	Scope of Survey	4
2.4	Development Proposal.....	4
2.5	Objective.....	4
3	Methodology	6
3.1	Surveyor & Reviewer	6
3.2	Desk Study	6
3.3	Habitat Survey	6
3.1	Biodiversity Net Gain.....	7
3.2	Protected and Notable Species Assessment	7
3.3	Evaluation	10
3.4	Limitations and Assumptions	11
4	Results and Evaluation	12
4.1	Designated Sites	12
4.2	Habitats	13
4.3	Biodiversity Net Gain.....	15
4.4	Protected and Notable Species	16
5	Further Surveys, Avoidance, Mitigation and Enhancement Recommendations	25
5.1	Further Surveys / Assessments	25
5.2	Avoidance and Mitigation	25
5.3	Enhancements.....	28
6	Conclusion	29
7	References.....	30

Appendix 1 Legislation and Planning Policy

Appendix 2 Habitat Map

Appendix 3 Condition Assessment Sheets

Appendix 4 Habitat Suitability Index Scores

Appendix 5 Wildlife Friendly Planting

2 Introduction

2.1 Background

David Archer Associates was commissioned by Planit Consulting to undertake a Preliminary Ecological Appraisal (PEA) at The Lake House, Old Hollow, Rowfant, Nr Copthorne, West Sussex, RH10 4TB, herein referred to as 'the site'. This report will support a planning application to demolish the existing residential dwellings and construct a new one in their place.

2.2 Site Location and Description

The site is located c. 1.3km to the east of Crawley and the M23 motorway at central Ordnance Survey Grid Reference TQ 31628 37593. The application site totals c. 0.2ha, comprising built-up areas and gardens, buildings, and developed land; sealed surface. Habitats within the wider site ownership boundary comprise grassland, woodland, hedgerows and lines of trees.

The site is situated within a rural location and surrounded by agricultural land and associated buildings, grassland, pockets of woodland, intermittent dwellings and garden space, interspersed by waterbodies, lines of trees and hedgerows.

2.3 Scope of Survey

The PEA comprised a single visit to the application site. The red line boundary used for the purposes of this assessment is shown in the existing site plan shown in **Figure 2.1**. The study area was also extended to consider the following ecological features according to certain distances around the site boundary:

- 5km for statutory designated sites for nature conservation that form part of the National Site Network (NSN) and Ramsar sites;
- 2km for statutory sites of national and local importance designated for nature conservation;
- 2km for non-statutory sites designated for nature conservation;
- 2km for protected and notable species records;
- 2km for granted European Protected Species Mitigation (EPSM) licences;
- 500m for Priority Habitats;
- 250m for water-bodies (in relation to great crested newts); and
- 30m for badger setts.

2.4 Development Proposal

The proposed development includes demolishing the existing residential dwellings, and constructing a new one in their place, including a garage for car parking (**Figure 2.1**). This will require the partial removal of built-up areas and gardens within the proposed development boundary. It is understood that no habitats are to be impacted within the wider ownership boundary.

2.5 Objective

The objective of this PEA is to identify any further ecological surveys and / or mitigation required, and potential enhancement opportunities in accordance with planning policy, and European and UK wildlife legislation (**Appendix 1**).

Key:

- Site Boundary
- Ownership Boundary
- Existing Buildings

Lake House

Mill Pond

280 sqm footprint

+47m

+46.8m

+49m

+50m

0m 12.5m 25m

N

PLANIT CONSULTING	
The Lake House, Rowfant	
Block Plan, existing	
Planning	
1300 @A3	14/03/2024
AC	A.002

3 Methodology

3.1 Surveyor & Reviewer

The site was surveyed by Ecologist Zenobia Hatch, who is licensed to survey for great crested newts (licence number: 2022-10685-CL08-GCN), and an Accredited Agent for Level 1 bat licence activities under licence WML-CL18- 2015-12515-CLS-CLS. Zenobia has been undertaking nocturnal roost emergence/re-entry, and activity transect bat surveys since April 2017, Preliminary Roost Assessments (PRAs) since June 2019, and undergoes regular in-house assessment of these by Principal Ecologist Graeme Down

This report was reviewed by Principal Ecologist Graeme Down, who is licensed to survey for great crested newts and bats (licence numbers: 2015-19299-CLS-CLS and 2022-10910-CL18-BAT). Graeme has been a practising ecologist since 2007, is highly experienced in Habitats Regulations Assessment (HRA) and ornithological surveys and is a FISC level-4 botanist. Graeme has also held development licences for badgers and is a Full member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and therefore subject to the CIEEM Professional Code of Conduct.

3.2 Desk Study

Natural England's Multi-Agency Geographic Information for the Countryside (MAGIC) database was accessed on 11th July 2024 for information on statutory sites designated for nature conservation within a 2km radius of the site. Consideration for NSN sites was extended to a 5km radius where the potential risk of impact to interest features of such sites may extend over a wider area. Such sites include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). A 5km search radius was also applied to internationally designated Ramsar sites, as well as sites currently under public consultation for future designation as SACs, SPAs and Ramsar sites.

The MAGIC Impact Risk Zones (IRZs) were used to assess whether the proposed development may impact on any Sites of Special Scientific Interest (SSSI), and thus whether consultation with Natural England is needed to discuss how impacts might be avoided or mitigated.

The Sussex Biodiversity Record Centre (SxBRC) was also consulted on 4th June 2024 for the following information for a 2km radius around the application site:

- Non-statutory nature conservation designations, such as Local Wildlife Sites (LWS);
- Legally protected species, such as great crested newts, reptiles, birds and bats; and
- Notable / priority species, such as those listed under Section 41 of the NERC Act, 2006.

3.3 Habitat Survey

The survey involved a site visit on 3rd June 2024 to record and map habitat types and ecological features within the site. The survey was undertaken in accordance with *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017). The habitats present on-site have been characterised under the UK Habitat Classification Habitat Definitions V2.0 (UK Hab Ltd, 2023). A minimum habitat parcel size of 25m² was employed, and wherever possible, habitats were characterised to Level 5, the most detailed level available. Habitats were plotted on a Habitat Plan (**Appendix 2**). Features of interest were identified as target notes on the Habitat Plan (**Appendix 2**).

Note that the UK Habitat Classification forms the basis for the DEFRA Biodiversity Metric (February 2024) and that the Metric requires assessment of the ‘condition’ of the habitat. This is based on criteria as defined within the Metric guidance. The condition assessment to inform the Metric is not directly comparable to evaluation of habitat importance in accordance with the *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018).

Aerial photographs, maps and field observations were used to identify habitats in the wider landscape which could be impacted by development of the site.

Weather conditions during the survey were 18°C, calm – light air (Beaufort 0 - 1), 90% cloud cover and dry.

3.1 Biodiversity Net Gain

The Statutory Biodiversity Metric Calculation Tool 4.0 (DEFRA, 2024) was used to calculate the baseline Habitat Units. No Local Nature Recovery Strategy is available and network enhancement zones on MAGIC maps were used to determine Strategic Significance.

3.2 Protected and Notable Species Assessment

The site was inspected for evidence of and assessed for potential to support protected and notable species. This included species listed under the *Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*, the *Wildlife and Countryside Act 1981 (as amended) (WCA)*, and those given extra protection under the *Natural Environment and Rural Communities (NERC) Act 2006*, *Countryside and Rights of Way (CROW) Act 2000*, and the *Protection of Badgers Act 1992*.

MAGIC was also accessed on 11th July 2024 to identify any European Protected Species Mitigation (EPSM) licences granted by Natural England within a 2km radius of the site.

The following protected / notable species were considered within the assessment.

3.2.1 Great Crested Newts and Common Toads

The site was assessed for suitability to support the legally protected great crested newt *Triturus cristatus* and the notable common toad *Bufo bufo*. The assessment was undertaken in accordance with the *Herpetofauna Workers' Manual* (Gent & Gibson, 2003) and the *Great Crested Newt Conservation Handbook* (Langton, *et al.*, 2001).

Based on Natural England (2015) guidance, surveys of land greater than 250m from the nearest water-body are normally appropriate in relation to great crested newts when all of the following conditions are met:

- a) Maps, aerial photos, walkover surveys or other data indicate that the water-body/bodies has/have potential to support a large great crested newt population;
- b) The development footprint contains particularly favourable habitat, especially if it constitutes the majority available locally;
- c) The development would have a substantial negative effect on that habitat; and
- d) There is an absence of dispersal barriers.

The proposed development does not meet criteria b and c above, and therefore consideration was given to water-bodies on and within 250m of the site using OS maps and aerial images.

3.2.1.1 Habitat Suitability Index (HSI)

A HSI was applied to Mill Pond adjacent to the site on 3rd July 2024. The HSI provides a method for assessing the suitability of a water-body for breeding great crested newts and gives an index between zero and one.

Low scores indicate unsuitable habitat and one indicates optimal habitat (Oldham, *et al.*, 2000). Ten suitability indices are used to calculate the score, each representing a factor considered to affect the probability of great crested newts breeding within a water-body. The final scores were then compared against a categorical scale of habitat suitability for breeding great crested newts, as follows (ARG UK, 2010):

- <0.5 = poor
- 0.5 – 0.59 = below average
- 0.6 – 0.69 = average
- 0.7 – 0.79 = good
- >0.8 = excellent

3.2.2 Reptiles

The site was assessed for suitability to support reptiles with reference to the *Herpetofauna Workers’ Manual* (Gent & Gibson, 2003) and *Froglife Advice Sheet 10 An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation* (Froglife, 1999).

3.2.3 Badgers

The site and a 30m zone around the site (where accessible), were surveyed for badger *Meles meles* evidence such as setts, latrines, pathways, footprints, snuffle holes and badger hairs. Any setts recorded were classified according to published criteria (Harris, *et al.*, 1989).

3.2.4 Bats

Potential for the site to support roosting, foraging and commuting bats was assessed in line with the Bat Conservation Trust (BCT) *Bat Surveys for Professional Ecologists Good Practice Guidelines* (Collins, 2023).

3.2.4.1 Roosting

The buildings on-site were assessed for suitability to support roosting bats per the scales in **Table 3.1**. Equipment used to investigate the buildings included binoculars, a ladder, and a high-power torch. All buildings were described and surveyed for bats and their evidence, which includes droppings, staining, scratch marks and feeding remains.

Table 3.1: Classifying the bat roosting suitability of buildings (Collins, 2023).

No roosting suitability	No features likely to be used by any roosting bats at any time of year.
Negligible roosting suitability	Buildings with few, if any, features suitable for roosting, however a small amount of uncertainty remains as bats can use small and apparently unsuitable features on occasion.

Low roosting suitability	One or more potential roost sites that could be used by individual bats opportunistically at any time of year. The features do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats.
Moderate roosting suitability	One or more potential roost sites that could be used by bats due to their space, shelter, protection, appropriate conditions and/or suitable surrounding habitat but are unlikely to support a roost of high conservation status (e.g. maternity or hibernation).
High roosting suitability	One or more potential roost sites that could be used by larger numbers of bats on a more regular basis/ longer periods of time, due to their space, shelter, protection, appropriate conditions and/or suitable surrounding habitat. These structures could support to support roosts of high conservation status (e.g. maternity or hibernation).
Confirmed roost	Evidence of bat occupation found.

Trees were surveyed for evidence of bats and Potential Roost Features (PRFs), and then the features assigned a level of suitability for roosting bats as outlined in **Table 3.2**. PRFs include woodpecker holes, rot holes, hazard beams, cracks and splits, knot holes, cavities, loose bark, and partially detached ivy (Andrews, 2013).

Table 3.2: Classifying the bat roosting suitability of trees (Collins, 2023).

No roosting suitability	Trees with no PRFs or highly unlikely to be any.
Further Assessment Required (FAR)	Further assessment needed to determine if PRFs are present.
Potential Roost Features (PRF)	A tree with one or more PRFs. Categorise where possible as: • PRF-I – suitable for individual or small numbers of bats due to size or lack of suitable habitat nearby; or • PRF-M – suitable for many bats and potentially a maternity roost.

3.2.4.2 Foraging and Commuting

The site was assessed for its suitability to support foraging and commuting bats according to **Table 3.3**.

Table 3.3: Classifying the suitability of bat foraging and commuting habitat (Collins, 2023)

None	No habitat features on-site likely to be used by foraging or commuting bats.
Negligible	No obvious habitat features on site likely to be used by commuting or foraging bats, but uncertainty remains to account for non-standard bat behaviour.
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated or poorly connected to habitat in the surrounding landscape. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in parkland) or a patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that bats may use for commuting such as tree-lines and scrub or linked back gardens. Habitat that connects to the wider landscape that bats may use for foraging such as trees, scrub grassland and water.

High	Continuous, high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, tree-lines and woodland edge. High quality habitat that is well-connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.
-------------	---

3.2.5 Hazel Dormouse

The site was assessed for potential to support the hazel dormouse *Muscardinus avellanarius*, in accordance with the *Dormouse Conservation Handbook* (Bright, *et al.*, 2006). Dormice typically use connected woodland, hedgerows and scrub that contain suitable food plants. Aerial images were used to assess the connectivity of any suitable habitat on the site to woodland and hedgerows within the wider area.

3.2.6 Otter

Mill pond, adjacent to the sites eastern boundary was incidentally surveyed and assessed for otter *Lutra lutra* with reference to *Monitoring the Otter* (Chanin, 2003). The following otter field signs were searched for: spraint, footprints, slides, remnant fish prey remains, breeding sites and resting places (holts and lying up areas) within 10m of the bank.

3.2.7 Other Species

The site was assessed for suitability to support other protected and notable fauna species / assemblages including birds, invertebrates and mammals.

3.2.8 Invasive Species

The site was searched for invasive plants such as giant hogweed *Heracleum mantegazzianum*, Himalayan balsam *Impatiens glandulifera*, Japanese knotweed *Fallopia japonica* and rhododendron *Rhododendron ponticum*.

3.3 Evaluation

Designated sites, habitats and species (where presence has been identified) have been evaluated in accordance with the *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* (CIEEM, 2018).

These guidelines aim to give consistency in evaluating the importance of the ecological features within and around a site, which help inform any effects or impacts a scheme will have upon them.

A value of the ecological features (designated sites, habitats or species) has been assigned according to their level of importance using the following terms:

- International and European
- National
- Regional
- Local
- Site
- Negligible

3.4 Limitations and Assumptions

Access was available to the entire site and the baseline conditions reported represent those identified at the time of the survey. The survey was completed during the optimal time of year for recording vegetation. Although a reasonable assessment of the site can be made during a single survey, seasonal variations are not observed.

This PEA provides an overview of the likelihood of protected / notable species occurring on the site (negligible, low, moderate, or high). Absence of a species cannot be presumed where no evidence was found. Further surveys have been recommended where there is reasonable likelihood of a protected species being present and impacted by the development proposal. This is based on the suitability of the habitat and any evidence observed.

This PEA does not constitute a full botanical survey or a Phase 2 pre-construction survey for Japanese knotweed.

The roof void inspection of building B1a was restricted to the ladder due to health and safety concerns. This however is not considered to represent a significant constraint, as further bat surveys have been recommended.

Access to areas of land up to 30m from the site to search for signs of badger was not possible, however, a limited amount of land to the north and south, and land to the west and east was visible from the site, and no signs of badger setts were apparent. A pre-construction badger survey has been recommended. Therefore, the slightly limited access to off-site areas to assess the potential for badger presence is not considered to represent a significant constraint.

The results of this assessment will remain valid for 12 months from the date of the survey i.e. until June 2025, after which the assessment should be updated, if a planning application has not been submitted within this timeframe.

4 Results and Evaluation

The following section presents the results, evaluation and discussion of the designated sites, habitats and protected / notable species, which may be impacted by the proposed development.

4.1 Designated Sites

4.1.1 Statutory Sites

No statutory sites designated for nature conservation of **European importance** are located within 5km of the site, and no sites of **national** or **local** importance are located within 2km of the site.

The site falls within the SSSI Impact Risk Zones (IRZs), of more distant SSSIs, including Turner's Hill, Worth Forest, Hedgecourt, and Ashdown Forest. However, the development does not meet criteria for impacts that would likely lead to a significant effect on these SSSIs. Therefore, no consultation with Natural England and no mitigation is required.

No significant impacts on statutory sites are expected.

No further action is recommended.

4.1.2 Non-Statutory Sites and Priority Habitats

Non-statutory sites designated for nature conservation that are located within 2km of the application site are provided in **Table 4.1**. LWSs are of **local importance**.

The development will be small enough and located far enough from any of these sites for there to be no direct or indirect impacts on their habitats. No significant impacts on non-statutory sites are expected.

No further action is recommended in relation to non-statutory designated sites.

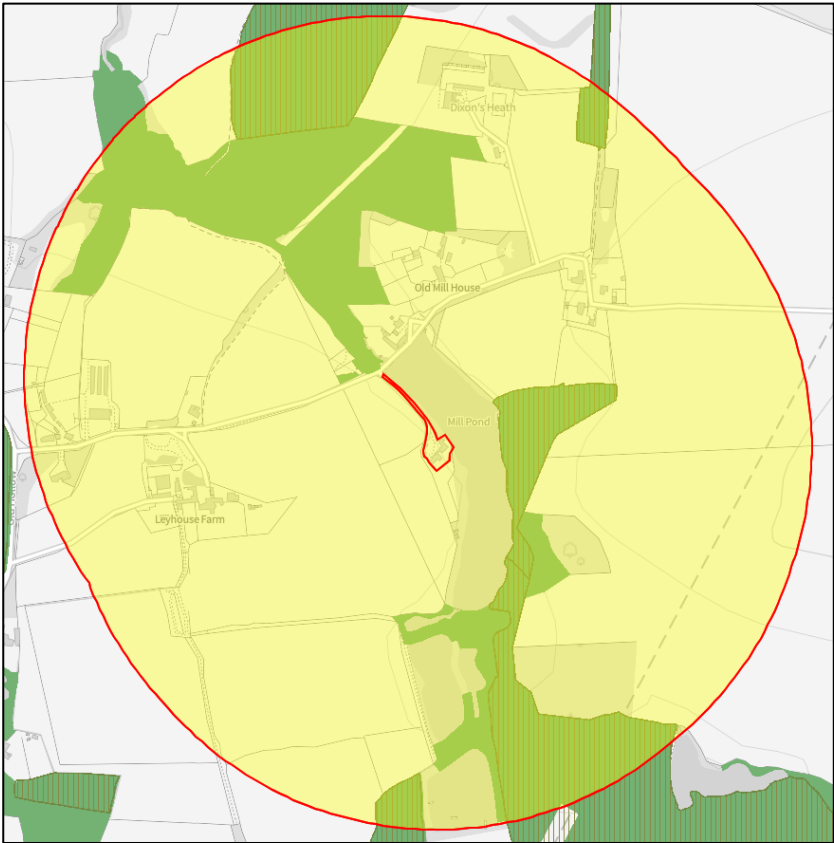
Table 4.1: Non-statutory sites within 2km of the application site.

Site Name	Distance & Direction from Site	Area (ha)	Reasons for Designation
Copthorne Common, LWS	1km N	33.1	Includes two contiguous area of common land, the larger is managed as a golf course, with valuable areas of semi-natural habitat. Main features of interest include heathland, mosaic of grassland types and woodland.
Oaken Wood, Stony Plats & High Lines, LWS	1.1km S	77.3	The majority of this site comprises oak <i>Quercus robur</i> and hazel <i>Corylus avellana</i> woodland. There are a number of large open clearings and several stagnant ponds. The woodland supports good numbers of plants, mosses, liverworts, birds and butterflies.
Worth Way, LWS	1.5km SSW	5.5	A disused railway between Pound Hill district of Crawley and the new development at Maidenbower. It comprises a range of habitats including woodland, grassland, scrub, and marshy areas.
Worth Meadows, LWS	2km SSW	5.8	Comprises several habitats in a relatively small area, including species-rich meadows, two overgrown ponds, woodland and a stream.

Priority Habitats (Section 41, NERC Act 2006) are present within 500m (**Figure 4.1**). These include priority habitat Deciduous Woodland, c. 5m north of the proposed development boundary (it is c. 130m north of the area of impact), c. 50m east beyond Mill Pond, and c. 90m south, and Ancient and Semi-natural Woodland, c. 50m east beyond Mill Pond, and c. 350m north.

No impacts are expected to Priority Habitats due to the distance between them and the site, and the small scale of impacts as part of the proposed development. Therefore, no further action is required.

Figure 4.1: Priority habitat deciduous woodland (green blocks) and Ancient and Semi-natural Woodland (brown lines) within 500m of the proposed development boundary (red-line).



© Crown copyright and database rights (2024) OS (100022861)

4.2 Habitats

The habitats below were recorded within the site during the survey. No protected, Habitats of Principal Importance (HPIE) or locally important floral species or habitats were recorded within the site during the survey. Habitat types are described below and shown on the UK Habitat Map (**Appendix 2**).

Table 4.4: Habitats recorded on-site (UK Habitats Classification).

Primary Habitat (code)	Secondary Habitat within Primary Habitat (code)	Ecological Condition Status
Buildings (u1b5)	Residential building (818)	N/A
Built-up areas and gardens (u1)	Scattered trees (32) Frequently mown (108) Recent management (517) Vegetated garden (828) Introduced shrub (847)	Built-up areas and gardens – N/A X1Poor, x5 Moderate, x3 Good (Scattered trees. See Appendix A3 for full condition assessment)
Developed land; sealed surface (u1b)	-	N/A

4.2.1 Buildings

A description of the buildings within the site is provided in relation to their bat roosting suitability in **Section 4.4.6**.

4.2.2 Built-up areas and gardens (u1)

The majority of the site to the south comprises built-up areas and gardens (u1), with a smaller section to the north of the buildings (**Photo 4.1**). The habitat is comprised of perennial ryegrass *Lolium perenne*, annual meadow grass *Poa annua*, daisy *Bellis perennis*, dandelion *Taraxacum officinale* agg., yarrow *Achillea millefolium*, and ornamental planting.

The built-up areas and gardens is of **negligible** importance as a habitat in itself.

Nine scattered trees are present within this habitat, comprising (**Photo 4.2**):

- X5 pedunculate oak *Quercus robur*
- X2 chestnut/buckeye *Aesculus* sp.
- X1 Pear *Pyrus* sp.
- X1 magnolia *Magnolia* sp.

See **Table 4.5** for the ecological condition status, and **Appendix 3** for full results of the condition assessment of the scattered trees.

All of the trees provide structure on-site. Therefore, they are of **site** importance.

It appears that four of the trees may need to be removed as part of the proposed development. Further action in relation to the scattered trees is discussed in **Section 5**.

Photo 4.1: Built-up areas and gardens, facing north.



Photo 4.2: Scattered trees on-site, facing north-east.



Table 4.5: Ecological Condition status of trees located within built-up areas and gardens on-site.

Tree number (In accordance with the tree survey by Mark Welby, 2024)	Species	Ecological Condition Status	Size based on Statutory BNG Metric criteria
1	Pedunculate oak <i>Quercus robur</i>	Good	Very large
2	Pedunculate oak	Good	Very large
3	Pedunculate oak	Good	Very large
4	Pedunculate oak	Moderate	Very large
7	Pedunculate oak	Moderate	Large
11	Chestnut/buckeye <i>Aesculus</i> sp.	Moderate	Medium
12	Chestnut/buckeye	Moderate	Medium
18	Magnolia <i>Magnolia</i> sp.	Moderate	Medium

4.2.3 Developed land, sealed surface (u1b)

Developed land, sealed surface (u1b) is present within the north of the site in the form of a driveway and parking space.

The developed land (sealed surface) lacks ecological value as a habitat feature and is therefore of **negligible** importance.

No further action is required.

4.3 Biodiversity Net Gain

The Biodiversity Net Gain calculator on-site baseline units are shown below and detailed within the Calculation Tool Excel document.

It is unlikely to be possible to deliver on-site BNG due to the development resulting in privately owned houses and gardens, where a 30-year habitat Management and Monitoring Plan (HMMP) would not

be appropriate. However, if there is an option to fence off the grassland and woodland within the wider ownership boundary so it is no longer within the curtilage of the garden, BNG may be possible.

On-site baseline	Habitat units	4.61
	Hedgerow units	0.00
	Watercourse units	0.00

4.4 Protected and Notable Species

Records of protected / notable species for the last ten years have been considered within the assessment below.

4.4.1 Invertebrates

SxBRC returned ten records of Roman snail *Helix pomatia*, which is listed on *Schedule 5* of the *WCA*. Numerous records of Section 41 (NERC Act, 2006) moths and butterflies were returned.

Habitats to be significantly impacted by the proposals (buildings, and built-up areas and gardens) are unlikely to support rare or notable species. Limited nectaring opportunities are available for invertebrates within these habitats.

The site therefore holds **negligible** potential for rare / notable invertebrates.

No further action is required.

4.4.2 Great Crested Newts and Common Toads

SxBRC returned no records of great crested newt *Triturus cristatus* and one record of common toad *Bufo bufo*, c. 1.6km northwest from 2015. Two EPSM licences within 2km are present (**Table 4.6**) (MAGIC, 2024). Three ponds are located within 250m of the site (OS, 2024). Refer to **Figure 4.2** and **Table 4.7** below, and **Appendix 4** for the HSI calculations.

Table 4.6: Granted great crested newt mitigation licence applications within 2km of the site.

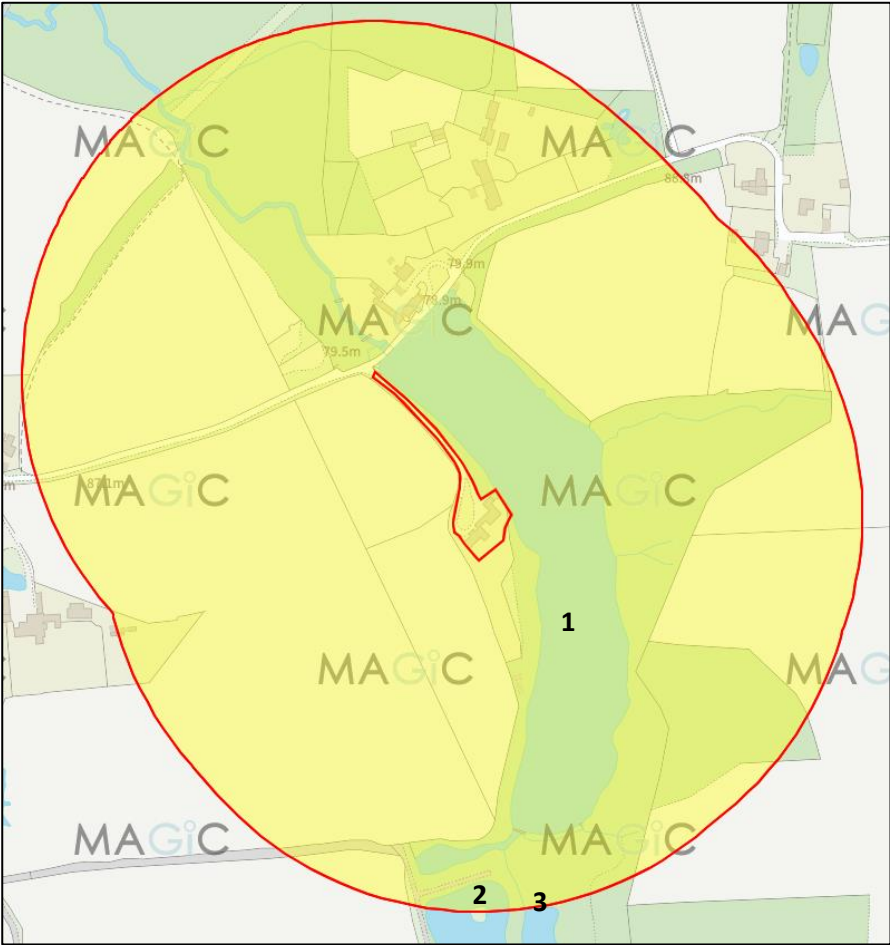
Case Reference	Licensed Impact	Distance & Direction	Licence Start & End Dates
2017-31507-EPS-MIT-1	Resting place	1.7km NW	2028 – 2023
2017-31507-EPS-MIT-2	Resting place	1.7km NW	2018 - 2020

The site comprises well-managed built-up areas and gardens, and developed land, sealed surface, which represents poor quality terrestrial habitat for foraging and commuting habitat for great crested newts.

Due to both of the EPSM licences being 1.7km from the site, and on the far side of the M23 motorway, as well as the poor suitability of Mill Pond as indicated by the HSI assessment (**Appendix 4**), and the lack of suitable terrestrial habitat, the site therefore holds **negligible** potential for great crested newts and **impacts to other amphibians are not expected**.

No further action is required.

Figure 4.2: Water-bodies within 250m of the proposed development boundary (red-line).



© Crown copyright and database rights (2024) OS (100022861)

Table 4.7: Location and description of waterbodies on and within 250m of application site.

Waterbody Number	Distance & Direction from proposed development boundary	HSI Score	Connectivity to the Site	Further Surveys Required?
1	<10m east	Poor	Directly connected to site.	No
2	c. 240m south	Not accessible	Beyond grassland and woodland. Known to be a fishing lake (Google Maps, 2024).	No
3	c. 250m south	Not accessible	Beyond grassland and woodland. Known to be a fishing lake (Google Maps, 2024).	No

4.4.3 Reptiles

SxBRC returned three records of slow-worm *Anguis fragilis*, the most recent from 2021, and the closest c. 1.6km northwest.

The majority of the habitat on-site consists of built-up areas and gardens, and developed land, sealed surface, which is of limited suitability for reptiles, although does provide a possible place of sub-optimal commuting and foraging habitat. The surrounding habitat is of greater suitability for reptiles. There are no dispersal barriers between the surrounding habitat and proposed development site.

Therefore, there is a **low** potential for reptiles, in particular, common lizards *Zootoca vivipara* and slow-worms *Anguis fragilis* to be present. Further surveys are not necessary, however, precautionary action in relation to reptiles is recommended in **Section 5**.

4.4.4 Birds

The SxBRC returned no records of bird species listed as Annex I (Birds Directive) and / or Schedule 1 (WCA) that would be likely to breed on-site. Records of three red-listed, and four amber-listed Birds of Conservation Concern (BoCC) (Stanbury et al., 2021), that would be likely to breed on-site were returned: starling *Sturnus vulgaris*, greenfinch *Carduelis chloris*, house sparrow *Passer domesticus*, stock dove *Columba oenas*, bullfinch *Pyrrhula pyrrhula*, dunnoek *Prunella modularis*, and song thrush *Turdus philomelos*, respectively.

The following birds were recorded during the survey: pheasant *Phasianus colchicus*, wren *Troglodytes troglodytes*, chiffchaff *Phylloscopus collybita*, magpie *Pica pica*, and wood pigeon *Columba palumbus*.

Bird interest (nesting / foraging) is likely to be confined to the ornamental planting, scattered trees and buildings on-site. The site therefore holds **high** potential for widespread species of nesting bird. The site overall is, however, considered to hold **negligible** potential for bird species listed as Annex I (Birds Directive) and / or Schedule 1 (WCA). The small nature of the site, and heavy levels of disturbance mean that the site has **negligible** potential for notable wintering bird species and assemblages.

Further action for nesting birds is recommended in **Section 5**.

4.4.5 Badgers

SxBRC do not include badger records within their reports due to confidentiality.

No badger setts were recorded on or within 30m of the site boundary, where access was possible. No mammal paths, latrines, hairs, prints or any signs of digging were recorded on-site. The site provides small areas of potentially suitable, but likely sub-optimal, foraging and commuting habitat for badgers in the form of built-up areas and gardens.

The site is of **negligible** importance for badgers, although badger setts can appear at any time. Therefore, a pre-construction badger check has therefore been recommended in **Section 5**.

4.4.6 Bats

SxBRC returned records for five bat species: Whiskered/Brandt's *Myotis mystacinus/brandtii*, noctule *Nyctalus noctula*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, and brown long-eared *Plecotus auritus*. No EPSM licenses are noted within 2km of the site (MAGIC, 2024).

4.4.6.1 Roosting (Trees)

One of the pedunculate oak trees on-site (**Appendix 2, Target Note 1**) has features that are **PRF-I** suitability for roosting bats during both the active and hibernation seasons, including dense ivy *Hedera helix* coverage. No further survey is required, but precautionary approaches to felling or pruning are recommended in **Section 5**.

Other trees surveyed on site are of **no** suitability for roosting bats during both the active and hibernation seasons as they lack suitable features. No further action is required.

4.4.6.2 Roosting (Buildings)

The relevant buildings on site have been described below. Refer to **Appendix 2** for the building locations.

Building B1a

Building B1a is an 'L' shaped, two-storey, wooden cladded, residential dwelling, with a clay-tiled pitched roof, comprised of one pitch sloping east to west, and the other section north to south, with two chimneys, one on the eastern and the other on the western aspect of the building (**Photo 4.3**). Numerous gaps beneath lifted tiles (**Photo 4.4**), and gaps between the wooden cladding (**Photo 4.5**), were recorded on all aspects of building B1a.

A dormer is present within the roof pitch along the northern (**Photo 4.3**), western, and southern (**Photo 4.6**) aspects. The lead flashing appears to be well-sealed around the dormer windows, although numerous tile gaps are present.

Chimneys located on each of the roof pitched sections are both in a good state of repair with no obvious gaps visible. The lead flashing around the base of the chimney was also noted to be well-sealed.

A small section of hanging tiles is located on a mini-pitch above a window along the eastern aspect (**Photo 4.7**). Gaps were noted beneath the hanging tiles.

Internally, the roof void was viewed from the ladder due to health and safety concerns, so the entire roof void was not visible. It is noted to be the length and width of building B1a, and c. 1.5-2m tall at its highest point. The roof void comprises a timber ridge beam, rafters and purlins, with breathable roofing membrane underlay, lined with chipboard in some sections. The roof void is insulated at floor level, and divided by brick walls that form the chimneys, although offers a large, connected space, allowing free-flight access throughout for bats (**Photos 4.8** and **4.9**). No light ingress was observed within the roof void. Rodent droppings were recorded within the roof void.

No evidence of bats was noted on or within building B1a at the time of the survey.

Due to the number of gaps underneath roof tiles and wooden cladding, along with other features, building B1a is of **high** suitability for bats during the active and **low** suitability during the hibernation season. Although the dwelling is not regarded as a typical hibernation roost for bats, the potential for hibernation cannot be entirely ruled out. There is a low risk that small numbers of isolated bats could use some of the discrete features noted above over winter, due to the uncertainty around hibernation roosts in certain species (Korsten et al., 2015).

Further surveys for bats during the active season have therefore been recommended in **Section 5**.

Photo 4.3: North-eastern aspect of building B1a.



Photo 4.4: Gaps beneath lifted tiles along the northern aspect of building B1a.



Photo 4.5: Gaps beneath the wooden cladding along the western aspect of building B1a.



Photo 4.6: South-western aspect of building B1a.



Photo 4.7: South-eastern aspect of building B1a.



Photo 4.8: Internal roof void of building B1a, facing west.



Photo 4.9: Internal roof void of building B1a, facing east.



Building B1b

Building B1b comprises an annex that adjoins building B1a via a small glass walkway (**Photo 4.10**). The annex is shaped similarly to a 'Z', and comprises two-storeys, with the first storey consisting of a garage for car parking, and the second storey above the garage, as well as a small walkway beneath in front of the garage area (**Photo 4.11**). The annex comprises a flat roof of bitumen roofing felt and plastic cladding that is noted to be well sealed, and no gaps were recorded.

Building B1b does not contain an internal roof void.

No signs of bats or potential roosting features were identified. Therefore, building B1b is of **negligible** suitability for roosting bats during the active and hibernation season.

No further action is recommended.

Photo 4.10: Walkway that joins buildings B1a and B1b.



Photo 4.11: North-western aspects of building B1b.



Overall Suitability for Roosting Bats in Buildings

Several access points and roosting opportunities were available for bats within building B1a, which are described in **Table 4.8**. The roost assessment concluded that building B1a holds **high** suitability for bats during the active season and **low** suitability during the hibernation season, and building B1b has **negligible** suitability for roosting bats during the active and hibernation season.

Further surveys for roosting bats for building B1a have therefore been recommended in **Section 5**.

Table 4.8: Potential access points and roosting opportunities for bats.

Building number	Evidence of Bats	Potential Access Points	Potential Roosting Opportunities	Bat Roosting Suitability
B1a	None identified at the time of the survey.	Numerous gaps beneath lifted tiles and between wooden cladding along all aspects.	Under lifted tiles, wooden cladding, and potentially within the roof void.	High (active season) Low (hibernation season)
B1b	None identified at the time of the survey.	None identified at the time of the survey.	None identified at the time of the survey.	Negligible

4.4.6.3 Foraging and Commuting

Habitats of limited suitability for foraging and commuting bats were recorded within the proposed development site. Habitats are heavily modified and include a large proportion of either unvegetated surfaces or areas of low species diversity. The proposed development site itself is small and much better foraging and commuting opportunity is offered by the wider ownership site, and surrounding landscape. The site is therefore of **low** suitability for foraging and commuting bats.

Further action for foraging and commuting bats has been recommended in **Section 5**.

4.4.7 Hazel Dormice

SxBRC did not return any records for dormice *Muscardinus avellanarius*. Two granted EPSM licences for dormice are found within 2km of the site (MAGIC, 2024).

The site is located within the dormouse natural range, although features suitable for dormice are very limited within the proposed development boundary. The scattered trees on-site represent poor quality habitat for dormice due to a lack of suitable features and connectivity to the wider tree-line and hedgerow network. Habitats of greater suitability for dormice exist within the wider ownership boundary and surrounding landscape. It is understood these features are not to be impacted.

The proposed development site is therefore of **low** suitability for dormice, and the wider ownership site has **high** suitability.

Therefore, further surveys for dormice are not required. Further recommendations to avoid impacts on dormice are made in **Section 5**.

Table 4.9: Granted hazel dormouse mitigation licence applications within 2km of the site.

Case Reference	Licensed Impact	Distance & Direction	Licence Start & End Dates
EPSM2011-3142	Breeding and resting place	1.9km SW	2013 – 2014
2014-135-EPS-MIT	Breeding and resting place	1.9km SW	2014

4.4.8 Otter

SxBRC do not include otter records within their reports due to confidentiality. No otter spraint or foot prints were noted along Mill Pond to the east of the site. It is noted that Mill Pond is utilised for fishing and therefore subject to regular disturbance, further reducing its suitability for otter. The pond has limited connectivity to suitable water-bodies within the surrounding landscape.

Therefore, the site is of **negligible** suitability for otter. No further actions are recommended.

4.4.9 Hedgehogs

SxBRC returned three records of hedgehog *Erinaceus europaeus*, the most recent dating from 2024, and the closest c. 1.2km west.

Some areas of habitat within the proposed development boundary had potential for hedgehogs, including the built-up areas and garden. However, habitat of greater suitability for hedgehogs exists within the wider site ownership boundary and surrounding landscape.

The proposed development site is therefore of **low** suitability for hedgehog.

Further action for hedgehogs has been recommended in **Section 5**.

4.4.10 Invasive Plants

No invasive plant species listed under Schedule 9 of the *WCA* were noted on site during the survey.

No further action is required.

5 Further Surveys, Avoidance, Mitigation and Enhancement Recommendations

This section discusses recommendations for further surveys, avoidance, mitigation, and possible enhancements in line with relevant wildlife legislation and planning policy (see **Appendix 1**).

5.1 Further Surveys / Assessments

5.1.1 Badgers: Setts

No badger setts were recorded within the site. However, badger setts can appear at any time where suitable habitat has been identified. A badger survey on and within 30m around the site by an ecologist c. six weeks before clearance / construction begins is recommended. This should allow time for any mitigation / avoidance measures to be designed, and preparation of a Natural England badger Development Licence application if required.

5.1.2 Bat Roosts: Buildings

Building B1a was assessed as having **high** suitability for roosting bats during the active season and **low** suitability for roosting bats during the hibernation season respectively. Therefore, three bat emergence surveys that are spaced at least three weeks apart between May and August (one of these may extend into September) are recommended in line with current guidance (Collins, 2023; BCT, 2023).

If roosting bats are identified using the building and impacts are considered likely to cause a legal offence, a European Protected Species Mitigation (EPSM) licence from Natural England would be required prior to works affecting a roost.

5.2 Avoidance and Mitigation

5.2.1 Mill Pond

A Construction Environment Management Plan (CEMP) should be designed to avoid and mitigate impacts on Mill Pond to the east of the site boundary. Impacts though accidental pollution are possible. Therefore, the CEMP should include the following:

- Good housekeeping methods of cleaning vehicles and machinery;
- Safe storage of vehicles, materials and any equipment containing potential pollutants (e.g. fuel, oil, chemicals) to avoid pollution through spills and run-off; and
- Protocols for dealing with any accidental spillages including provision of spill kits.

5.2.2 Scattered trees and vegetation within the ownership site boundary

Use the following measures to minimise impacts to scattered trees and vegetation within the ownership boundary:

- Retain scattered trees where possible and protect where required during construction with Heras fencing in line with *Trees in Relation to Design, Demolition and Construction – Recommendations BS5837:2012* (British Standards Institution, 2012); and
- Replace any trees lost to the development with native specimens of local provenance (refer to **Appendix 5** for suitable species).

5.2.3 Reptiles

The built-up areas and gardens within the proposed development boundary has **low** potential to support reptiles as foraging and commuting habitat. It is recommended that this area continue to be maintained through the following measures prior to development to ensure its suitability for reptiles does not increase:

- Maintain a sward height of less than 10cm through regular mowing; and
- In the unlikely event that a reptile is encountered, stop works and allow the animal to move away of its own volition. If slow moving, or unwilling to move, leave the animal where it is and return to work in that area later once it has moved.

5.2.4 Birds

Clear the woody habitats and buildings between September and February (inclusive) to avoid the main breeding bird season. Alternatively, a competent person should check potential nesting habitat immediately before clearance that is scheduled during the breeding season (March to August inclusive). Any active nests identified must be retained *in situ* with a suitable buffer (to be determined by an ecologist) until the chicks have fledged and the nest is no longer active.

Once works have started, the regular disturbance caused by the works should deter nesting birds from any retained features. However, if works are paused for more than 72 hours during the breeding season, either suitable features should be blocked until works resume to deter nesting birds from moving in, or a check for nesting birds should be carried out immediately before works resume.

5.2.5 Bat Roosts: Buildings

The features identified as potentially suitable for hibernating bats on building B1a do not lend themselves to typical hibernation survey methods of measuring activity by use of static detectors and manual inspection over winter months as they do not have access or space for static detectors or manual inspection, and endoscope use may be too disturbing and harmful to bats and therefore is not appropriate. Based on the latest mitigation guidelines (BCT, 2023), no winter working seasonal constraints to the removal of this building applies in relation to bats. However, this will be influenced by the outcome of active season surveys. If no active season roosts are located, then works to this building should be timed for September – October when impacts to both bats and nesting birds are likely to be lowest. One bat box suitable for hibernation, such as a Schwegler 1FW bat box (or suitable long-lasting alternative), should be installed on a retained tree. The box should be installed at least 5m above the ground, not be south-facing, not subject to artificial lighting and should be clear of obstructions, such as overhanging branches.

5.2.6 Bat Roosts: Trees

One of the trees on-site has PRF-I suitability to support roosting bats on-site (**Appendix 2, Target Note 1**). If removal of this tree is required, it should be sectionally felled with sections lowered to the ground with any suitable features facing upwards and left in place for 24 hours before being removed from site or chipped on site. This will allow for bats to disperse in the unlikely event that they are present during the works. In the event that evidence of bats is found, works would need to cease and further surveys may be required in order to obtain a protected species mitigation licence from Natural England. Based on the latest mitigation guidelines (BCT, 2023), no over-winter seasonal constraints to the removal of this tree applies in relation to bats. However, if possible, works should be timed for September – October when impacts to both bats and nesting birds are likely to be lowest.

One bat box, such as the Vivara Pro Woodstone Bat Box or suitable long-lasting alternative, will be installed on a suitably retained tree to mitigate for the loss of this tree which may have provided bats with suitable roosting features in the near future if they were retained. Replacement tree planting will take some time to mature, hence providing a bat box to replicate tree roost features often found in more established trees is deemed appropriate.

5.2.7 Bats - Foraging and Commuting

The following measures should be implemented within the development to reduce impacts on foraging and commuting bats caused by artificial lighting (BCT & ILP, 2023):

- Direct any task lighting used during construction away from boundary vegetation and any newly installed bat boxes;
- Set any necessary security lighting on short timers with a sensitivity to large moving objects only;
- Consider installing internal light fittings in a recess where installed in proximity to windows facing the boundary vegetation in order to reduce glare and light spill;
- Limit lighting times to provide dark periods;
- LED light sources should be used wherever possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capabilities. A warm spectrum light (ideally <2700 Kelvin) should be used to reduce the blue light component. Lights should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012). Luminaires should be mounted on the horizontal, i.e. with no upward tilt. Avoid the use of UV light and do not use metal halide, fluorescent light sources; and
- As a last resort, use hoods or cowls to avoid light being directed at the sky or towards the boundary vegetation.

The loss of a small number of trees within the site, which represents potential bat foraging and commuting habitat, should be mitigated for by planting native, locally sourced trees/shrubs within the south of the ownership boundary. **Appendix 5** provides a table of suitable species that can be included within any new planting to encourage bats to continue foraging and commuting within the site. The new planting should also be kept as a dark corridor for bats.

5.2.8 Hazel Dormice

No boundary vegetation within the site ownership boundary are to be lost as part of the proposed development. The recommendations in **Section 5.2.7** with regard to lighting will also be required for protection of dormice.

5.2.9 Hedgehog

In order to avoid / reduce potential impacts to hedgehogs, if any new garden fences are to be installed, they should be with either a 13cm tall gap along the base or provide hedgehog links (13cm x 13cm holes at the base) at 10m intervals to allow hedgehogs to move freely between gardens and adjacent habitats.

5.2.10 General Site Measures

Use these precautionary measures to avoid / reduce impacts to wildlife:

- Cover any trenches, holes or deep pits overnight, or use secured planks to allow any animals that fall in to escape during construction. A member of staff should check the site at the end of each working day to ensure that these provisions to protect nocturnal species (such as hedgehog and badger) have been made; and
- Store materials off the ground on pallets to prevent reptiles from taking refuge under them.

5.3 Enhancements

The recommendations below are designed to enhance the value of the site for wildlife, as encouraged through the National Planning Policy Framework (2023), and to help achieve qualitative species and habitat focused enhancement in the context of both national and local biodiversity priorities and targets:

- 1) Plant a native hedgerow along the eastern site boundary alongside the driveway within the ownership boundary to increase habitat connectivity around the site. Locally sourced, native fruit and berry bearing species such as hazel *Corylus avellana*, apple *Malus* spp., hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, guelder rose *Viburnum opulus*, and spindle *Euonymus europaeus* are recommended. Refer to **Appendix 5** for further suitable species.
- 2) Install two Schwegler 1B General Bird Boxes and / or Sparrow Terraces (or suitable long-lasting alternative) onto retained suitably mature trees and / or the new building at least 3m above the ground, avoiding direct sunlight (not directly south-facing) and prevailing wind.
- 3) Install Greenwood Half and Half Bat Box Bat Boxes (or suitable long-lasting, self-cleaning alternative) onto retained suitably mature trees and / or the new building. Install the bat boxes at least 5m above the ground and face in a southerly or easterly direction, so that they receive sun for part of the day. Place boxes clear of any obstructions to allow access for bats (e.g. over-hanging branches).
- 4) Provide one insect house in a sheltered, warm location e.g. within any new flower beds within the wider site ownership boundary to provide over-wintering sites for beneficial insects such as lady birds and lacewings, which typically prey on pest species.
- 5) Provide a hedgehog house within a sheltered location e.g. at the base of a hedgerow, shrub beds, within tall grassland or at the base of retained trees beneath the canopy of tall trees, within the wider site ownership boundary, preferably a distance away from roads.
- 6) Create a dedicated grass heap and compost heap towards the south of the ownership boundary.

6 Conclusion

The development can proceed with minimal impact to habitats and protected / notable species if the avoidance and mitigation measures outlined within **Section 5**, and any measures arising from further surveys, are implemented.

There is also the opportunity to enhance the development for local wildlife in the long-term by implementing the enhancement measures.

7 References

Andrews, H., 2013. *Bat Tree Habitat Key*. Bridgewater: Andrews Ecology.

ARG UK, 2010. *ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index*, UK: Amphibian and Reptile Groups of the United Kingdom.

Bat Conservation Trust, 2004. *Gardening for bats*, London: Bat Conservation Trust.

Bat Conservation Trust, 2022. *Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys*.

Bright, P., Morris, P. & Mitchell-Jones, A., 2006. *The Dormouse Conservation Handbook*. 2nd ed. Peterborough: English Nature.

British Standards Institution, 2012. *BS 5837:2012 Trees in relation to design, demolition and construction. Recommendations*. United Kingdom: British Standards Institution.

Chanin, P., 2003. Monitoring the otter. In: *Conserving Natura 2000, River Monitoring Series No. 10*. Peterborough: English Nature.

CIEEM, 2017. *Guidelines for Preliminary Ecological Appraisal*. Winchester: CIEEM.

Collins, J., (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. 4th ed. London: The Bat Conservation Trust.

DLUHC, 2023. *National Planning Policy Framework*,. [Online] Available at: <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

English Nature, 2001. *Great Crested Newt Mitigation Guidelines*. Peterborough: English Nature.

HMSO, 1981. *The Wildlife and Countryside Act*, London: HMSO.

HMSO, 1992. *Protection of Badgers Act*, London: HMSO.

HMSO, 2000. *The Countryside and Rights of Way (CROW) Act*, London: HMSO.

HMSO, 2006. *Natural Environment and Rural Communities Act (NERC Act)*, London: HMSO.

HMSO, 2019. *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations*, London: HMSO.

HMSO, 2021. *The Environment Act*, London: HMSO.

Institute of Lighting Professionals (ILP) & Bat Conservation Trust, 2023. *Bats and Artificial Lighting at Night. Guidance Note 8/23*.

JNCC, 2003. *Herpetofauna Workers' Manual*. Peterborough: JNCC.

Langton, T., Beckett, C. & Foster, J., 2001. *Great Crested Newt Conservation Handbook*. Halesworth: Froglife.

Welby, M., 2024. *Tree Survey of The Lake House*.

Natural England, 2008. *Gardening With Wildlife in Mind*. London: Natural England.

Natural England, 2024. *MAGIC Map Application*. [Online]
Available at: <http://www.natureonthemap.naturalengland.org.uk/MagicMap.aspx>

Oldham, R., Keeble, J., Swan, M. & Jeffcote, M., 2000. Evaluating the Suitability of Habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal*, Volume 10, pp. 143-155.

OS, 2024. *Wheres The Path 3: Ordnance Survey*. [Online]
Available at: <http://wtp2.appsport.com/wheresthepath.htm>

Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D. and Win, I., 2021. *The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain*. *British Birds* 114, 723–747.

UKHab Ltd, 2023. *UK Habitat Classification Version 2.0*. [Online]. Available at <https://www.ukhab.org/>

Appendix 1 Legislation & Planning Policy

Legislation

Conservation of Habitat and Species (Amendment) (EU Exit) Regulations (CHSR) 2019

The *CHSR 2019* transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

The purpose of the 2019 amendments applied to the legislation were to ensure the continued functionality of the Regulations once the UK has left the European Union, with no policy changes included.

Wildlife & Countryside Act (WCA)

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

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act.

Sites of Special Scientific Interest (SSSI) are designated under this Act.

Special Protection Areas (SPA) are strictly protected sites, designated under the Birds Directive, for rare and vulnerable birds and for regularly occurring migratory species.

Natural Environment & Rural Communities (NERC) Act

The *NERC Act 2006* amends the *CROW Act*, by further extending the requirement to have regard for biodiversity to all public authorities, which includes local authorities and local planning authorities and requires that the Secretary of State consults Natural England (NE) in the publication of the list of living organisms and habitat types deemed to be of principal importance in conserving biodiversity.

Relevant Protected Species Legislation

Species	Relevant Legislation	Level of Protection
Reptiles (adder, grass snake, common lizard & slow-worm)	Partially protected under <i>Schedule 5</i> of the <i>Wildlife and Countryside Act, 1981 (as amended)</i> .	It is an offence to: - intentionally kill or injure these animals. - sell, offer for sale, advertise for sale, possess or transport for the purposes of selling any live or dead animals or part of these animals.
Birds	Protection under the <i>Wildlife and Countryside Act, 1981 (as amended)</i> .	It is an offence to: - intentionally kill, injure or take any wild bird. - intentionally take, damage or destroy nests in use or being built (including ground nesting birds). - intentionally take, damage or destroy eggs. - Species listed on Schedule 1 of the WCA or their dependant young are afforded additional protection from disturbance whilst they are at their nests.
Badger	<i>Protection of Badgers Act, 1992.</i>	It is an offence to: - wilfully kill, injure, take, possess, or cruelly ill-treat a badger, or to attempt to do so. - intentionally or recklessly interfere with a sett.
Bats	European protected species under the <i>Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019</i> . Full protection under <i>Schedule 5</i> of the <i>Wildlife and Countryside Act, 1981 (as amended)</i> . Protected by the <i>Wild Mammals (Protection) Act 1996</i> .	It is an offence to: - intentionally kill, injure, or take any species of bat. - intentionally or recklessly disturb bats. - intentionally or recklessly damage destroy or obstruct access to bat roosts.
Hazel Dormouse	European protected species under the <i>Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019</i> . Full protection under <i>Schedule 5</i> of the <i>Wildlife and Countryside Act, 1981 (as amended)</i> .	It is an offence to: - deliberately capture, injure or kill hazel dormice. - damage or destroy a dormouse resting place or breeding site. - deliberately or recklessly disturb a hazel dormouse while it's in a structure or place of shelter or protection. - block access to structures or places of shelter or protection. - possess, sell, control or transport live or dead hazel dormice, or parts of hazel dormice.

Species	Relevant Legislation	Level of Protection
Wild Mammals	<i>The Wild Mammals (Protection) Act 1996.</i>	This makes it an offence to: crush or asphyxiate any wild mammal with intent to inflict unnecessary suffering. This may apply during site clearance for development, particularly where burrowing animals such as foxes and rabbits are present, since such animals could be crushed or asphyxiated in their burrows by heavy machinery.

National Planning Policy

National Planning Policy Framework (NPPF)

The NPPF sets out current government policy on biodiversity and nature conservation and places a duty on planners to make material consideration to the effect of a development on legally protected species when considering planning application (MHCLG, 2023). The NPPF also promotes sustainable development by ensuring that developments take account of the role and value of biodiversity and that it is conserved and enhanced within a development, following the principles of the mitigation hierarchy. The goals set out within the NPPF are for developments to minimise impacts on and provide net gains for biodiversity, including at the catchment or landscape scale.

The NPPF works in conjunction with Government Circular *06/2005 'Biodiversity and Geological Conservation - Statutory Obligations and Their Impact within the Planning System.'*

Regional and Local Planning Policy and Guidance

Local Structure Plans

County, District and Local Councils have Structure Plans and other policy documents that include targets and policies which aim to maintain and enhance biodiversity. These are used by Planning Authorities to inform planning decisions.

Biodiversity Action Plans

The UK Biodiversity Action Plan (UKBAP) was organised to fulfil the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A 'UK Post-2010 Biodiversity Framework' was published in July 2012, and succeeded the UKBAP. Much of the work for the UK BAP is now focussed at a country level due to devolution and the creation of country-level biodiversity strategies.

The UKBAP lists of priority species and habitats are still valuable reference sources. Notably, they have been used to help draw up statutory lists of priority species and habitats as required under Section 41 of the NERC Act (2006).

UK Post-2010 Biodiversity Framework

The UK Post-2010 Biodiversity Framework (2012) was produced in response to a change in strategic thinking following the publication of the Convention of Biological Diversity's Strategic Plan for Biodiversity 2011–2020. The Strategic Plan consists of 20 new biodiversity targets for 2020, termed the 'Aichi biodiversity targets' and the launch of the new EU Biodiversity Strategy in May 2011.

The framework sets a structure for action across the UK between now and 2020, including a shared vision and priorities for UK-scale activities to help deliver the Aichi targets and the EU Biodiversity Strategy. A major commitment by Parties to the Convention of Biological Diversity is to produce a National Biodiversity Strategy and/or Action Plan (NBSAP).

Natural England Standing Advice

Natural England has adopted national standing advice for protected species. It provides a consistent level of basic advice which can be applied to any planning application that could affect protected species. It replaces some of the individual comments that Natural England has provided in the past to local authorities.

Appendix 2 UK Habitat Plan



Legend

- Application site boundary
- Ownership boundary
- Target note
- u1 - Built-up areas and gardens
- u1b - Developed land; sealed surface
- u1b5 - Buildings



DAVID ARCHER
ASSOCIATES

ARBORICULTURE | ECOLOGY | LANDSCAPE

Chesham House, Eastbourne Road, Halland,
East Sussex, BN8 6PT
Tel: 01825 346919; 07568 411939
Email: info@davidarcherassociates.co.uk
Web: www.davidarcherassociates.co.uk

Project:	The Lake House, Old Hollow, Rowfant, Nr Copthorne, West Sussex, RH10 4TB
Title:	UK Habitat Plan
Client:	Planit Consulting
Date:	03/06/2024

© This drawing is copyright of David Archer Associates. Any
unauthorised reproduction or usage by any person is prohibited.
© The basemap is copyright of Google maps.

Appendix 3 Condition Assessment Sheets

Table A3: Condition assessment results for scattered trees within the built-up areas and gardens.

Condition Assessment Criteria		Criterion passed (Y or N) (Tree numbers in accordance with the tree survey by Mark Welby, 2024)							
		1	2	3	4	7	11	12	18
A	The tree is a native species (or at least 70% within the block are native species).	Y	Y	Y	Y	Y	N	N	N
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Y	Y	Y	Y	Y	Y	Y	Y
C	The tree is mature (or more than 50% within the block are mature).	Y	Y	Y	Y	Y	N	N	Y
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Y	Y	Y	N	N	Y	Y	Y
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	N	N	N	Y	N	N	N	N
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Y	Y	Y	N	Y	Y	Y	Y
Number of criteria passed		5	5	5	4	4	3	3	4
Condition Assessment Result (out of 6 criteria)	Condition Assessment Score	Score Achieved Y/N							
Passes 5 or 6 criteria	Good (3)	Y	Y	Y					
Passes 3 or 4 criteria	Moderate (2)				Y	Y	Y	Y	Y
Passes 2 or fewer criteria	Poor (1)								

Appendix 4 Habitat Suitability Index Scores

Table A4: Waterbody Habitat Suitability Index Scores

Suitability Index	Mill pond
Field location	1
Pond area	0.8
Pond drying	0.9
Water quality	0.33
Shade	1
Fowl	0.01
Fish	0.01
Ponds	1
Terrestrial habitat	1
Macrophytes	0.3
HSI SCORE:	0.31
Pond Suitability:	Poor

Appendix 5 Wildlife Friendly Planting

Table A5.1: Native and wildlife-friendly shrubs (Natural England, 2008).

Common Name	Scientific Name
Hazel	<i>Corylus avellana</i>
Elder	<i>Sambucus nigra</i>
Goat willow	<i>Salix caprea</i>
Hawthorn	<i>Crataegus monogyna</i>
Dog rose	<i>Rosa canina</i>
Guelder rose	<i>Viburnum opulus</i>
Gorse	<i>Ulex europaeus</i>
Broom	<i>Cytisus scoparius</i>
Wayfaring tree	<i>Viburnum lantana</i>
Shrubby cinquefoil	<i>Potentilla fruticosa</i>
Raspberry	<i>Rubus idaeus</i>
Alder buckthorn	<i>Frangula alnus</i>
Wild privet	<i>Ligustrum vulgare</i>
Barberry	<i>Berberis × stenophylla</i>
Barberry	<i>Berberis vulgaris</i>
Bell heather	<i>Erica cinerea</i>
Bilberry	<i>Vaccinium myrtillus</i>
Black currant	<i>Ribes nigrum</i>
Blackthorn	<i>Prunus spinosa</i>
Buckthorn	<i>Rhamnus catharticus</i>
Butcher's-broom	<i>Ruscus aculeatus</i>
Cowberry	<i>Vaccinium vitis-idaea</i>
Cross-leaved heath	<i>Erica tetralix</i>
New Zealand holly	<i>Olearia macrodonta</i>
Daphne	<i>Daphne odora</i>
Dogwood	<i>Cornus sanguinea</i>
Field rose	<i>Rosa arvensis</i>
Firethorn	<i>Pyracanthus angustifolia</i>
Flowering Currant	<i>Ribes sanguineum</i>
Gooseberry	<i>Ribes uva-crispa</i>
Hebe 'Midsummer Beauty'	<i>Hebe</i> sp.
Himalayan honeysuckle	<i>Leycesteria formosa</i>
Holly	<i>Ilex aquifolium</i>
Japanese quince	<i>Chaenomeles japonica</i>
Lilac	<i>Syringa vulgaris</i>
Mexican orange	<i>Choisya ternata</i>
Mezereon	<i>Daphne mezereum</i>
Midland hawthorn	<i>Crataegus laevigata</i>
Oregon grape	<i>Mahonia aquifolium</i>
Osier	<i>Salix viminalis</i>
Portugal laurel	<i>Prunus lusitanica</i>
Privet	<i>Ligustrum ovalifolium</i>
Purple willow	<i>Salix purpurea</i>

Common Name	Scientific Name
Snowy mespilus	<i>Amelanchier canadensis</i> , <i>Amelanchier lamarckii</i>
Spindle	<i>Euonymus europaeus</i>
Spurge laurel	<i>Daphne laureola</i>
Sweet briar	<i>Rosa rubiginosa</i>
Wild privet	<i>Ligustrum vulgare</i>

Table A5.2: Native and wildlife-friendly trees (Natural England, 2008).

Common Name	Scientific Name
Pedunculate oak	<i>Quercus robur</i>
Ash	<i>Fraxinus excelsior</i>
Wych elm	<i>Ulmus glabra</i>
Whitebeam	<i>Sorbus aria</i> agg.
Rowan	<i>Sorbus aucuparia</i>
Aspen	<i>Populus tremula</i>
Apple	<i>Malus domestica</i>
Bird cherry	<i>Prunus padus</i>
Common alder	<i>Alnus glutinosa</i>
Crab apple	<i>Malus sylvestris</i>
Crack willow	<i>Salix fragilis</i>
Downy birch	<i>Betula pubescens</i>
Field maple	<i>Acer campestre</i>
Hornbeam	<i>Carpinus betulus</i>
Juniper	<i>Juniperus communis</i>
Large-leaved lime	<i>Tilia platyphyllos</i>
Small-leaved lime	<i>Tilia cordata</i>
Pear	<i>Pyrus communis</i>
Scots pine	<i>Pinus sylvestris</i>
Sessile oak	<i>Quercus petraea</i>
Silver birch	<i>Betula pendula</i>
Sweet chestnut	<i>Castanea sativa</i>
Wild cherry	<i>Prunus avium</i>
Wild service-tree	<i>Sorbus torminalis</i>
Yew	<i>Taxus baccata</i>

Table A5.3: Moth pollinator species (Butterfly Conservation, 2019).

Common Name	Scientific Name
Honeysuckle	<i>Lonicera periclymenum</i>
Jasmine	<i>Jasminum officinale</i>
Evening primrose	<i>Oenothera biennis</i>
Sweet rocket	<i>Hesperis matronalis</i>
Night-scented stock	<i>Matthiola bicornis</i>
Aubretia	<i>Aubretia</i> sp.
Cuckooflower	<i>Cardamine pratensis</i>
Forget-me-not	<i>Myosotis</i> sp.
Honesty	<i>Lunaria annua</i>

Pansy	<i>Viola</i> sp.
Primrose	<i>Primula veris</i>
Wallflower	<i>Erysimum</i> sp.
French marigold	<i>Tagetes</i> sp.
Ice plant	<i>Sedum</i> sp.
Knapweed	<i>Centaurea</i> sp.
Lavender	<i>Lavendula</i> sp.
Marjoram	<i>Origanum vulgare</i>
Michaelmas daisy	<i>Aster amellus</i>
Mint	<i>Mentha</i> sp.
Scabious	<i>Scabiosa</i> sp.
Thyme	<i>Thymus</i> sp.