

Green
Environmental
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**45-46 CHESHAM ROAD,
BOVINGDON,
HEMEL HEMPSTEAD,
HERTFORDSHIRE
HP3 0EA**

ECOLOGICAL IMPACT ASSESSMENT

February 2021

for:

Roger Fleet and Ron New

Report number: 1461/1

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LIMITATIONS AND EXCEPTIONS

Limitations of Surveys

This report records wildlife found during the survey and anecdotal evidence of some species. Access, seasonality and weather conditions may affect survey results. It does not record any animals or plants that may appear at other times of the year and were therefore not evident at the time(s) of the visit(s). Habitats outside the site boundary were only visited where considered appropriate and where access was available.

The behaviour of animals can be unpredictable and may not conform to standard patterns recorded in current scientific literature. Many species are highly mobile and can occupy a site which has previously held no potential for them and factors such as increasing habitat pressure can cause animals to occupy areas that were previously unoccupied, or which might be considered far from suitable. This report therefore cannot predict with absolute certainty that animal species will occur in apparently suitable locations or that they will not occur in locations or habitats which appear to be unsuitable.

Limitations of Report

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

The Executive Summary, Conclusions and Recommendations sections of the report provide an overview and guidance only and should not be specifically relied upon until considered in the context of the whole report.

Interpretations and recommendations contained in the report represent our professional opinions, which were arrived at in accordance with currently accepted industry practices at the time of reporting and based on current legislation in force at that time.

Where the data available from previous reports, or for other subject matter supplied by the Client, have been used, it has been assumed that the information is correct. No responsibility can be accepted by us for inaccuracies within the data supplied.

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This report is prepared and written in the context of the proposals stated in the introduction to this report and should not be used in a differing context. Furthermore, new information, improved practices and legislation may necessitate an alteration to the report in whole or in part after its submission. Therefore, with any change in circumstances or after the expiry of two years from the date of the report, the report should be referred to us for re-assessment and, if necessary, reappraisal.

Scientific survey data will be shared with local biological records centre in accordance with the CIEEM professional code of conduct.

Please note that Green Environmental Consultants Ltd is an ecological consultancy. Any information relating to legal matters in this report is provided in good faith but does not purport in any way to give any advice on or interpretation of the law whatsoever. Professional legal advice should always be sought.

The data, advice and opinion which we have prepared and provided is true, and have been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. I confirm that the opinions expressed are my true and professional *bona fide* opinions.

This ecological information is supplied in accordance with BS 42020 2013.



1 EXECUTIVE SUMMARY

This report has been prepared by Green Environmental Consultants and relates to land and property at 45-46 Chesham Road, Bovingdon, Hemel Hempstead HP3 0EA. The report comprises a Preliminary Ecological Appraisal (PEA) and includes a Preliminary Bat Roost Assessment (PBRA) and, as no further action is required, is presented as an Ecological Impact Assessment.

Description and Results

The 0.18 hectare site comprised two adjoining residential plots with a bungalow on each, with a small number of outbuildings. Both plots contained generous gardens of mostly short lawn surrounded by clipped boundary hedges; few trees were present.

No evidence of European protected species was found, and habitat suitability and connectivity were mostly of negligible suitability to support their presence. There was no evidence of bat roosts and negligible roost suitability.

The habitats within the Site were of low ecological quality. However, the boundary hedges included native species and afforded shelter and nesting opportunities for birds. Together with those in adjacent gardens, they form a network offering moderate suitability for bat foraging and commuting. European Hedgehog *Erinaceus europaeus* known to frequent the area.

No non-native invasive weed species were found.

Further Surveys

Further ecological surveys are not required based upon the lack of direct evidence and low potential for protected and notable species.

Evaluation, Mitigation & Enhancement

The site is located within a residential area with mature gardens but is poorly connected to other higher-quality habitats likely to support notable wildlife. In this context, the proposed development of the Site will not result in significant impacts on important habitats, adjacent sites, or protected species.

Although no significant mitigation is required, opportunities for biodiversity enhancements are available. Therefore, the proposals will include native species landscape planting to encourage and support wildlife, the provision of integrated bat boxes, bird boxes and Hedgehog corridors.

Conclusions

There are no significant ecological constraints to the redevelopment of the Site for new residential units. Impacts on the wildlife will be minimal, and through considered design, redevelopment offers scope to provide enhancements to benefit local wildlife.

2 INTRODUCTION AND OBJECTIVES

2.1 Introduction

This report has been prepared by Green Environmental Consultants Ltd on behalf of Roger Fleet and Ron New. It relates to a small area of land and properties at 45 and 46 Chesham Road, Bovingdon, Hemel Hempstead HP3 0EA, at grid reference TL 0117 0369.

This report details the results of a Preliminary Ecological Appraisal (PEA) and a Preliminary Bat Roost Assessment (PBRA) which together form an Ecological Impact Assessment which informs a planning application to demolish the existing dwellings and construct eight residential units. It also assesses the constraints to development that may arise from ecological issues. As such, the identification of protected species is vital if the proposed development is to comply with existing legislation. It also allows any work that may otherwise be detrimental to protected and biodiversity species to be appropriately scheduled. It has been produced with reference to both Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017) and BSI Biodiversity, Code of practice for planning and development (BSI, 2013).

The surveys were conducted by Andrew Palmer BSc (Hons), DipLA, an experienced and licenced ecological surveyor. The reporting process and evaluation has been overseen by Jacqui Green BSc (Hons), MSc, CEcol, FCIEEM. Binomial scientific names are given after the first mention of a species only; plant names follow Stace (2019) nomenclature.

2.2 Objectives

The objectives of the survey are:

- to undertake a Preliminary Ecological Appraisal (PEA);
- to undertake a scoping for protected or biodiversity species including bats in the form of a comprehensive Preliminary Bat Roost Assessment (PBRA);
- to recommend follow-on species surveys if identified as being needed;
- to make recommendations to mitigate potential negative impacts arising from development proposals; and
- to make recommendations to enhance on-site habitats and wildlife opportunities resulting in an overall biodiversity net gain.

3 EVALUATION CRITERIA

3.1 Baseline Ecological Conditions

An ecological baseline was established through a desk study and site survey, as outlined in chapter 4. The results were evaluated against a hierarchy of levels of protection. These range from the highest international protection to the lowest level, where there may still be relevance under planning legislation, but no specific statutory protection. The findings have been assessed against ecological evaluation criteria derived by the Chartered Institute of Ecology and Environmental Management which are given below (3.1).

3.2 Legislation

3.2.1 European Protected Species (bats, Great Crested Newts, Otters, Dormice and others)

The information below is intended only as guidance to the legislation relating to these species. The Acts themselves should be referred to for the correct legal wording:

European Protected Species are protected under the EC Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora (the Habitats and Species Directive). This legislation is enacted under the Conservation of Habitats & Species Regulations 2017 (the 2017 Regulations). Works which involve impacts on EPS are likely to require a Natural England licence.

- ▶ In England, Scotland and Wales all bat species are also protected under the Wildlife and Countryside Act (WCA) 1981 (as amended) through inclusion in Schedule 5. The offences under this Act, which cover the obstruction of places used for shelter or protection, disturbance and sale still apply to European Protected Species.
- ▶ In England and Wales, the WCA is amended by the Countryside Rights of Way Act 2000 (CRoW), which adds an extra offence ('or recklessly') to S9(4)(a) and (b)), makes species offences arrestable, increases the time limits for some prosecutions and increases penalties.

Broadly it is an offence to:

- ▶ Intentionally or recklessly/deliberately injure, take or kill a bat (or other EPS).
- ▶ To possess a bat (unless obtained legally) alive or dead.
- ▶ Intentionally or recklessly/deliberately damage, destroy or obstruct access to any place that bats (or other EPS) use for shelter or protection, whether bats are present or not.
- ▶ Intentionally or recklessly/deliberately disturb a bat (or other EPS) while it is occupying a structure or place that it uses for shelter or protection.
- ▶ Deliberately disturb bats (or other EPS) in such a way as to be likely to affect significantly:
 - (i) the ability of any significant group to survive, breed, or rear or nurture their young
 - (ii) the local distribution or abundance of that species.

Prosecution could result in imprisonment, fines of £5,000 per animal affected and confiscation of vehicles and equipment used.

A European Protected Species Licence is required before the commencement of any development that might impact on bats and their roosts, or other EPS.

Exemptions can be granted from the protection afforded to bats under the Habitat Regulations, by means of an EPS (European Protected Species) Habitats Regulations licence obtained from Natural England (NE). An EPS licence could be required for (relevant examples):

- Demolition of a building known to be used by bats prior to the development of a site.
- When removing trees in which bats roost, as well as tree pruning.
- When undertaking significant alterations to roof voids used by bats.

There are three tests which must be satisfied before a licence can be issued to permit otherwise prohibited acts, in this case only Regulation 53(2)(e) is relevant, namely, for the purpose of preserving public health or safety, or other imperative reasons of overriding public interest. This includes those of a social or economic nature and with beneficial consequences of primary importance to the environment.

This is subject to Natural England's satisfaction that the application additionally meets:

- > Regulation 53(9)(a) that there is no satisfactory alternative.
- > Regulation 53(3)(b) that the action authorised will not be detrimental to the maintenance of the species concerned at favourable conservation status in their natural range.

3.2.2 Wildlife & Countryside Act Protected Species (Water Voles, Barn Owls, reptiles etc)

A number of species receive protection at a national level, usually against injury and killing, but may also include destruction of a resting place, collection and sale (the latter may also apply to selected named plants). The more common species of reptile have partial protection and are also Species of Principal Importance (SPI).

3.2.3 Other Species Legislation

Certain species are protected under other legislation eg the Protection of Badgers Act 1992 which gives special protection against harm to Badgers or their setts.

3.2.4 Biodiversity Species and Habitats

A number of species and habitats which do not merit national protection are nevertheless threatened or endangered at a more localised scale, usually at a county level, or have been discovered to have undergone a rapid decline. These are listed on the UK Species/Habitats of Principal Importance (S41) list (see under 'The England Biodiversity List' in section 2.3), or county (Local) Biodiversity Action Plans (BAPs) and would be considered to be part of the National Planning Policy Framework lower tier.

3.2.5 Birds - General

All nesting birds are protected under Section 1(1)(b) of the Wildlife and Countryside Act (1981) (*ibid*). It is an offence to:

... intentionally 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.

As a consequence no scrub or tree clearance or management should be undertaken during the nesting season, unless works to make the habitats unsuitable are first undertaken, or a detailed examination before clearance starts declares the area free. The nesting season is generally taken to be between mid-March and August if second broods are present, but warm seasons may extend this period to between February and September.

3.3 Planning

3.3.1 General

Government Circular 06/2005 (ODPM 2005) was produced as guidance to PPS9 but remains valid in relation to the NPPF. Paragraph 98 states that.....

'The presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat. Local authorities should consult Natural England before granting planning permission. They should consider attaching appropriate planning conditions or entering into planning obligations under which the developer would take steps to secure the long-term protection of the species'

The National Planning Policy Framework (NPPF) (MHCLG 2019) sets out the Government's planning policies for England and how these are expected to be applied.

Paragraph 175 of the NPPF says:

'When determining planning applications, local planning authorities should apply the following principles:

- *if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- *development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and*
- *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.'*

The Natural Environment and Rural Communities Act (OPSI 2006) (section 40(1)) states that:

'Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.'

3.3.2 Species/Habitats of Principal Importance and Biodiversity

To aid assessment and evaluation of impacts on biodiversity, a list of Species and Habitats of Principal Importance (SPI & HPI) has been produced. Natural England has produced standing advice (*Purpose and use of the England Biodiversity List*) regarding SPI as follows:

The England Biodiversity List has been developed to meet the requirements of Section 41 of the Natural Environment and Rural Communities Act (2006). This legislation requires the Secretary of State to publish a list of species of flora and fauna and habitats considered to be of principal importance for the purpose of conserving biodiversity. The S41 list will be used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the Natural Environment and Rural Communities Act 2006 "to have regard" to the conservation of biodiversity in England, when carrying out their normal functions.

3.4 Ecological Evaluation

It is important to put records and results into context using criteria such as designation, rarity, vulnerability, threat, location in a linkage of sites or features, importance at a given scale. Evaluation criteria based on those developed by the Chartered Institute of Ecology and Environmental Management are given below. However, whilst provided for reference and clarity, the Site evaluation awaits the results of follow-up surveys.

Table 3.1 Ecological Valuation Levels

Level of Value	Comment
International	Sites, habitats or species protected under international legislation eg. The Habitats and Species Directive. These include, amongst others: Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar Sites, Biosphere Reserves, plus undesignated sites supporting populations of internationally important species.
National	Sites, habitats or species protected under national legislation e.g. Wildlife & Countryside Act 1981 and amendments. Sites include Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNRs), Marine Reserves, plus areas supporting significant areas of UK Habitats of Principal Importance, or breeding populations of rare (Red Data Book) species.
Regional	Habitats or species meeting the criteria for regional importance e.g. regionally important assemblages of invertebrates.
County	Sites, habitats or species meeting the criteria for Local (County, Metropolitan or Unitary Authority area) designation e.g. Local Wildlife Site. This category includes designated Local Nature Reserves, which have statutory protection. Sites containing viable areas or populations of Species of Principal Importance (SPIs) or County Biodiversity Action Plan habitats or species, local Red Data Book species etc.
Local or Parish	Undesignated sites or features, which enhance or enrich the wildlife resource at a Parish or neighbourhood level.
Zone of influence	Includes nil or low ecological value but which form a function within the site or immediate surroundings.

4 METHODS

4.1 Desk Study

A desk study was undertaken to gather existing ecological records in relation to the site and the surrounding area, in order to provide ecological context for the site and to inform an assessment of the potential ecological constraints to development. A data search was undertaken through the Hertfordshire Environmental Records Centre (HERC) for an adjacent and similar site for the same developer and so that has been used. Given the nature of the site (small in area, urban and devoid of notable habitats), it is considered that that is sufficient to cover potential impact issues for this Site.

MAGIC (Multi-Agency Geographic Information for the Countryside) was also searched. OS maps and aerial photographs were used to identify the presence of features up to 500 m from the site which might be used by protected or notable species.

4.2 Habitat Survey

4.2.1 Survey Method

A Phase 1 habitat survey of the site was conducted. The survey followed the 'Preliminary Ecological Appraisal' methodology as set out in the 'Guidelines for Preliminary Ecological Appraisal' (Chartered Institute of Ecology and Environmental Management [CIEEM], 2012), which is a development of the method described in the 'Handbook for Phase 1 Habitat Survey – a technique for environmental audit' (Joint Nature Conservation Committee, 2010). In addition notes were made of dominant or uncommon species; observations of unusual flora or faunal activity were noted also.

The survey was undertaken by Andrew Palmer BSc (Hons), DipLA on 17 February 2021 in suitable weather conditions.

4.2.2 Survey Limitations

There were no limitations to the Site habitat survey. Adjacent land was only examined where relevant and where public access was possible.

4.3 Scoping for Protected & Biodiversity Species

The Site was inspected for evidence of and its potential to support protected or notable species, especially those listed under The Conservation of Habitats and Species Regulations 2017, the Wildlife & Countryside Act 1981 (as amended), including those given extra protection under the Natural Environment and Rural Communities (NERC) Act 2006 and Countryside & Rights of Way (CROW) Act 2000, and listed on the UK and local Biodiversity Action Plans. Such species include but not limited to, amphibians, Badgers, bats, birds, invertebrates, reptiles and plants.

The Site was also searched for evidence of invasive plant species, such as Japanese Knotweed (*Reynoutria japonica*) and Himalayan Balsam (*Impatiens glandulifera*) and also for evidence of use by invasive animals.

4.4 Bat Survey

4.4.1 Preliminary Bat Roost Assessment (PBRA)

A Preliminary Bat Roost Assessment (PBRA) involves systematically searching for evidence of roosting bats and seeks to establish the suitability of buildings and trees to support roosting bats when no other evidence is found. The survey also included an evaluation of surrounding habitat in order to determine its ability to support bat commuting and foraging activity.

Buildings and trees were evaluated for their bat roost potential according to standard survey guidelines outlined in the BCT Good Practice Guidelines (Collins 2016), as shown in Table 4.1.

The purpose of thorough examinations is to provide a basis for recommendations for further bat emergence and re-entry and characterisation surveys if required; evaluate the likely ecological impacts of potential works on roosts and habitat utilisation; and recommend mitigation or compensation measures that may be required, as well as habitat enhancements.

Table 4.1: Assessment of Bat Roosting Potential in Buildings and Trees (adapted Collins, 2016).

Suitability	Assessment of Features Present That Potentially Support Roosting Bats
Negligible	Negligible habitat features on site and unlikely to be used by roosting bats.
Low	A small number of potential roosting sites present, with features most likely to be used by a <i>low number</i> of bats on a <i>transient basis</i> (i.e. not regularly, nor for breeding or hibernation roosts).
Moderate	Several potential roosting sites present, with features that are <i>unlikely</i> to support maternity or hibernation roosts.
High	Potential roosting sites, with features conducive to the establishment of roosts of high conservation value, e.g. larger number of bats, regular roosting, occupancy for longer periods, maternity and or hibernation roosts.

4.4.2 Building Inspections

An inspection of all buildings on site was conducted both internally (by entering the loft spaces where these were accessible) and externally, checking for bats and evidence of bats, e.g. live or dead bats, audible squeaking, droppings on the floor, walls, furniture and in cobwebs, urine marks on hard surfaces, feeding signs, etc.); and suitability for roosting including potential roost locations, access points, light levels, draughts, etc.

Potential for both 'higher conservation value roosts' (those used during maternity and hibernation periods) and 'lower conservation value roosts' (e.g. transient, feeding, mating, pre- and post-maternity roosts) was considered. Despite the terminology, lower conservation value roosts are still an essential component of bat population ecology, although they generally require lower standards of mitigation and compensation when being impacted.

The survey undertaken was thorough, systematic and consistent with an approach recommended to Natural England Roost Visitors. Aside from maternity and other regularly-used roosts, where larger numbers of droppings accumulate, it is often the case that there is little obvious indication of their presence. Evidence is also open to nuanced interpretation.

The value of a roost varies enormously based upon the ecology of the species concerned. Very insignificant and easily overlooked features can hold maternity colonies of less gregarious species or could hold several hibernating bats. These types of features could easily be attributed to the low-value category, whilst undoubtedly having greater significance than can adequately be evaluated through the casual survey protocols. As a result, any assessment of potential must be determined by experience and judgement and cannot be wholly formulaic.

4.4.3 Tree Roost Inspections

With no trees on site, inspection was limited to adjacent trees and conducted from ground level using binoculars and a powerful spot-light. With respect to potential for roosting bats, attention was paid to the nature of holes and other cavity and crevice features and broadly referred to features described in the 'Bat Tree Habitat Key (3rd Edn.)', (Andrews 2016).

4.4.4 Habitat Evaluation with Respect to Foraging and Commuting Bats

A broad assessment of surrounding habitats for its suitability in supporting bat foraging and commuting activity was undertaken with reference to the BCT Guidelines (summarised in Table 4.2).

Table 4.2: Assessment of Bat Activity Suitability (Commuting and Foraging) in Surrounding Habitat
- adapted from Collins (2016).

Suitability	Commuting and Foraging Habitats
Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	Habitat that could be used by small numbers of bats such as a 'gappy' hedgerow, small patch of scrub or isolated tree.
Moderate	Continuous habitat connected to the wider countryside such as tree-lines or linked back gardens, scrub and grassland.
High	Continuous, high-quality habitat well connected to the wider landscape such as woodland, tree-lined watercourses, grazed parkland, river valleys, woodland edge.

4.4.5 Surveyor Details

The PBRA was undertaken by Andrew Palmer, an experienced bat worker holding a Level 2 Bat Survey Licence since 2011 (Class Licence Registration Number: 2015-12285-CLS-CLS). He also holds a licence to train Volunteer Bat Roost Visitors and has therefore been entrusted to teach bat surveyors how to assess roosts on behalf of Natural England.

4.4.6 Survey Limitations

There were no limitations concerning the building or habitat assessments. Internal inspection of the dwelling was undertaken with the full co-operation of the occupants and in accordance with a Covid-19 risk assessment.

4.5 **Other Mammalian Species**

The PEA included a search of the site for evidence of protected and notable mammal species other than bats. Given the type of habitats present, this was primarily limited to European Hedgehog. Good hedgehog habitat includes mainly hedgerows, woodlands and meadows. They are also commonly found in suburban gardens, especially where there are undisturbed areas.

4.6 **Invasive Non-native Species**

The site was searched for evidence of invasive plant species, such as Japanese Knotweed (*Reynoutria japonica*) as well as invasive animals such as Reeve's Muntjac *Muntjac reevesi*.

5 RESULTS

5.1 Desk Study

5.1.1 Sites

The Site is not covered by any statutory or non-statutory nature conservation designations.

There are no statutory sites within 2 km of the site.

There are no Herts and Middlesex Wildlife Trust Nature Reserves within 2 km.

There are 16 non-statutory sites within 2 km of the site (Local Wildlife Sites LoWS, formerly County Wildlife Site or CWS). While the closest LoWS, Bovingdon Brickworks Central, lies 0.8 km from the Site, all of the other LoWS lie more than 1.0 km away.

There are twelve Ancient Woodland Inventory Sites (AWIs) which lie within 2 km of the Site, but none closer than 970 metres.

Neither the LoWS or AWI sites are close enough to be impacted by these proposals.

5.1.2 Protected Species Records

Some records of protected species may be confidential to ensure protection of the species involved. To safeguard such information, the full list is not included in this report. Information which might be relevant to this Site is summarised below.

The Local Ecological Records Centre data search returned hundreds of species records. These records of key protected species considered to be most sensitive to impact from the proposed development are itemised. Numerous additional notable species records (Species of Principal Importance), were also returned. However, these species are considered unlikely to be impacted by the proposed development; they are therefore not listed below, e.g. species for which no suitable habitat is present close to the site.

Some species are listed under more than one level of protection. In such instances, they are only mentioned below under the highest-ranking legislation as this provides the greatest protection to that species.

Distances quoted do not take account of accuracy and resolution of record and are therefore a guide only. Absence of records does not necessarily mean that species are absent but may reflect a general lack of recording effort in an area.

5.1.2.1 *Internationally Protected Species Records*

Bat species –all records (Chiroptera sp.): 63 records of nine species have been recorded within 2 km; the most recent of which was 2018. The closest record was of Common Pipistrelle, 470m from the site (2018). The relevance of these records is moderate as they demonstrate that a variety of bat utilise the landscape in which the Site sits, but none are particularly close.

Bat species –roosts records only (Chiroptera sp.): There were 25 records of seven species, but the majority of these records come from hibernation counts or roosts recorded more than 15 years ago.

Two European Protected Species (EPS) licences were granted between 2015-2017. Both related to Common Pipistrelle, with the closest 1.6 km away from the site.

The records attributed to all records of bat species are summarized in Table 5.1 below:

Table 5.1 Summary of Bat Species Records Within 2 Km of the Site.

Species	No. Records	No. Roosts	Most Recent	Nearest Record
Brown Long-eared	13	2	2012	770m
Soprano Pipistrelle	3	0	2005	770 m
Common Pipistrelle	9	3	2018	470 m
Pipistrelle species	11	3	2016	790 m

Noctule	1	0		
Leisler's	2	0	2005	770 m
Natterer's	12	12	2005	Hibernation roost
Daubenton's	3	3	2005	Hibernation roost
Serotine	1	1	1999	1.7 km
Barbastelle	1	1	1999	1.2 km
Total	63	25		

Great Crested Newt *Triturus cristatus*— There was a single record from 2016, more than 500m away to the south-west, on the edge of Bovingdon. The relevance of this record is low on account of the intermediate habitat (between the record and the Site) being entirely unfavourable for the movement of this species.

5.1.2.2 UK Protected Species

Badger *Meles meles*—74 records, most recently 2017 with the closest less than 500m away (1989).

Birds - Of species listed under the Wildlife and Countryside Act: Barn Owl *Tyto alba* - One record (2012); and Red Kite *Milvus milvus*- 75 records (most recent 2017).

Bluebell *Hyacinthoides non-scripta* - 19 records, closest 260 m distance (most recent 2011)..

5.1.3 Species/Habitats of Principal Importance and other Biodiversity Issues

Mammals: Hedgehog *Erinaceus europaeus*- 1 records, 1.2 km distance (1985).

Birds: A significant number of bird species records were returned –where these are considered specifically relevant to the proposed redevelopment of the site, they are included in the evaluation of potential impacts.

Invertebrates: A moderate number of butterfly and moth species records were returned –none of these are considered specifically relevant to the proposed redevelopment of the site.

5.1.4 Invasive Non-native Species

Fat Dormouse *Glis glis*, Grey Squirrel; Japanese Knotweed.

5.2 Habitat Survey

5.2.1 The Site

5.2.1.1 General Description

The Application Site is a rectangular area of approximately 0.18-hectare (60 x 30 m) and comprises two adjacent bungalows with outbuildings. The two plots are separated and bounded by clipped hedgerows. The Site lies within a residential area and adjacent to the B4505 Chesham Road. It is bounded on three sides by mature residential gardens.

There was limited open countryside within 500 metres of the Site and connectivity to countryside and parkland habitats was severely restricted. There were few significantly wooded areas within 2 km.

The habitats present are shown in the photographs in the Appendix.

5.2.1.2 The Site

The open areas of the Site were comprised of small front gardens (mostly gravel in 45 Chesham Road; mostly short lawn and gravel in no. 46); and more extensive rear gardens (primarily short lawn for both numbers 45 and 46). In both gardens, mature vegetation comprising Cherry Laurel *Prunus laurocerasus* and Leyland Cypress *Cupressus x leylandii* occupying the rear quarter had been cut back. Such operations constitute reasonable 'garden maintenance' and are not of any significance with respect to the overall ecological value of the Site.

The boundaries between numbers 45/46 and adjacent gardens, comprised clipped hedges primarily made up of Holly *Ilex aquifolium* and Ivy *Hedera helix* with some Shrubby Honeysuckle *Lonicera nitida* and Garden Privet *Ligustrum vulgare*. Both gardens held small areas of ornamental shrubs, but few native forbs were present.

5.2.2 Adjacent Habitats

This Site is surrounded by residential gardens and a B-road.

5.3 Scoping for Protected and Biodiversity Species

With two buildings present there is potential for bats and a survey has been carried out. A single pond lay at the edge of the 250 m radius search area. While this pond was potentially suitable for Great Crested Newt, the intervening habitats and connectivity were unsuitable for their migration to the Site. As a result, no further consideration has been given to this species.

While it is likely that common reptiles are under-recorded in the broader landscape, habitats on site are unsuitable for reptiles and have been scoped out.

While the site is comparatively small, the row of fairly large gardens would be likely to increase its potential for nesting birds and possibly Foxes and Hedgehogs if access across boundaries is possible.

5.4 Bat Survey

5.4.1 Building Inspections

The location of the building surveyed is shown on in the appendix and the results summarised in Table 5.2:

Table 5.2: PBRA –Building Inspection Results

Building name	Description, Evidence of Bat Roosting Activity and Suitable Bat Access	Evidence Found	Roost Suitability
No. 45 - Main dwelling.	Single storey with an attic room and no accessible loft. Rendered brick walls with concrete pantile roof. Partially flat-roofed with bitumen felt. No evidence of bats on external surfaces and no opportunity for bat access.	None.	NEGLIGIBLE
No. 46 - Main dwelling and garage	Single storey with small, unlined loft. Rendered brick walls with concrete peg tile roof. Partially flat-roofed with bitumen felt. Brick garage with significant glazing and flat bitumen felt roof. No evidence of bats within loft space. No	None.	NEGLIGIBLE

	significant opportunity for bat access.		
	No evidence of bats on external surfaces and no opportunity for bat access.		

5.4.2 Tree Roost Potential

No mature trees with potential roost features were found within the Site. Consequently, all trees were of negligible suitability for bat roosts.

5.4.3 Habitat Assessment

The habitats on the Site, including the boundary hedges, offer only low suitability for bat foraging and commuting, albeit (using BCT guidance) raised to moderate when taken together with adjoining gardens.

5.5 Other Observations

Opportunities for nesting birds are largely confined to buildings and boundary hedgerows. During the survey, only a small colony of House Sparrow *Passer domesticus* frequented the boundary hedgerows of numbers 45 and 46. It is likely that the Site represents part of the breeding range of this colony as they are typically faithful to small areas. While breeding on site is not proven, House Sparrow is a Species of Principal Importance (NERC Act 2006, Section 41) and its presence is, therefore, a material concern.

The records indicate that Badgers are present in the surrounding landscape, but the Site offers low suitability, and no evidence of occupation or foraging was found.

5.6 Invasive Non-Native Species

No evidence of invasive non-native species (INNS) was found.

6 DISCUSSION & ANALYSIS OF RESULTS

6.1 Discussion

6.1.1 General

This small site has comparatively limited value for wildlife, and few potential impacts would arise from development proposals.

6.1.2 Bats

As no evidence of bat roost utilisation was found and the buildings were considered to hold negligible suitability for bats, the proposed demolition of the two bungalows is not constrained with respect to roosting bats.

There are no significant trees within the site and no arboreal roost suitability.

Despite the lack of evidence of roosting bats, the Site lies within a wider landscape context that supports bat populations. The development should therefore include enhancement opportunities for roosting bats.

6.1.3 Other Protected and Notable Species

The habitats present provide limited suitability for European Protected Species, and there is no evidence of their presence. Therefore, potential impacts arising that would affect these species are negligible.

The rapid national decline in Hedgehog populations is well documented and it is not surprising that only one records occur within the data set (from 1985). Whilst no evidence of Hedgehog was found, the householder of number 49 (only 30 m to the north) reports seeing Hedgehogs within their garden on a comparatively regular basis. It is, therefore, reasonable to assume that Hedgehog is or could be, present on Site.

Removal of vegetation has the potential to disturb nesting birds. Recommendations are set out below to avoid harm as well as to enhance the site, primary amongst these is timing vegetation removal to avoid the bird nesting season.

No other species of significance to the proposed development were noted, directly or by residual evidence. It should, therefore, be assumed that no other ecological constraints arise from other species.

6.2 Evaluation

Using the ecological evaluation criteria from table 2.1:

Table 5.1 Ecological Valuation for this Site

Level of Value	Comment
International	None.
National	None.
County	None.
Regional	None.
Local	Limited to boundary hedgerows and contribution to a connected network of garden habitats.
Zone of Influence	Hedgehog - a UK SPI, probably forages within the garden. House Sparrow (an SPI) seen on Site during survey, a species known to nest in urban areas with mature gardens.

The boundary clipped hedgerow and garden habitats present do not constitute any significant value beyond that which is Local. The Site is valued at 'Zone of Influence' level (low ecological value), on account of garden habitats probably exploited by Hedgehogs and House Sparrows.

7 RECOMMENDATIONS

7.1 Further Surveys

No specific programme of further ecological surveys is required based upon the absence of evidence of, or potential for, protected or notable species. However, precautionary

surveillance and pre-work checks should be undertaken in the case of demolition of built-structures and when works to vegetation commence as set out below.

7.2 Mitigation and Enhancement

7.2.1 General Principles

When designing a scheme the Mitigation Hierarchy should be applied to limit potential impacts on biodiversity. The mitigation hierarchy is:

1. Avoidance - Measures taken such as design changes, to avoid creating impacts from the start. For example, changing the location of the development or development activities within the site to avoid sensitive habitats or species present on site.
2. Minimisation - Measures taken to reduce the duration, intensity, extent and/or likelihood of impacts that cannot be avoided, to a level that is no longer considered significant for the species or habitat feature.
3. On-site compensation - Measures taken on-site, to provide a biodiversity contribution that is proportionate to the long term loss for residual impacts that cannot be completely avoided or minimised.
4. Off-site compensation / offset - Measures taken off-site to provide a biodiversity contribution that is proportionate to the long term loss for any residual, adverse impacts onsite after full implementation of the previous three measures.

7.2.2 The Site

7.2.2.1 *General Works Surveillance*

7.2.2.1.1 Removal of hedging, shrubs, ground vegetation and demolition of buildings

All species of bird are offered protection under the Wildlife and Countryside Act 1981 (as amended) when nesting or preparing nests (typically, but not exclusively between March and August inclusive). As such, removal of vegetation should be carried out outside of the breeding bird season (so, between September and February inclusive), so as to avoid disturbing or destroying active nests. Should this time frame be unfeasible, it is recommended that prior to the commencement of works, a nesting bird check is carried out by a suitably qualified ecologist (although checks at all times of year are recommended). If active nests are observed, vegetation will need to be left alone until the ecologist is satisfied that the young have successfully fledged.

Short-mown grass should be maintained on-site throughout the pre-demolition period to ensure that it does not become favourable habitat for species that may then be harmed during the works. When strimming or cutting longer, ruderal vegetation, extreme care should be taken not to harm Hedgehogs and amphibians, and in all cases, the area should be checked before cutting commences. Once cut short, these areas should be maintained as short swards to prevent recolonisation by wildlife during the works phase.

During the clearance of debris and timber and rubble piles, care should be taken by checking these before moving to ensure that wildlife is not seeking refuge or hibernating (particularly Hedgehogs). Ideally, piles of stones/logs should be dismantled by hand rather than by machine.

Demolition of all buildings and structures should proceed in a precautionary manner, particularly as there is evidence of nesting birds. If works are undertaken during the bird nesting season, then the building should be checked prior to demolition to establish if birds are making regular visits to areas of the roof on all sides of the dwelling. If nesting activity is present, then works should be suspended until after young birds have fledged.

7.2.2.1.2 Construction Phase Operations

To avoid creating refugia that may be utilised by Hedgehogs and amphibians, materials should be carefully stored on-site on raised pallets and away from the boundary habitats. Piles of materials that could act as refuges for wildlife should be removed as soon as possible. If left any time, they should be checked for the presence of wildlife before moving.

Security and work floodlighting should only be used where necessary to avoid any potential detrimental impacts during construction on foraging and commuting bats. These lights should not continually illuminate boundary vegetation during hours of darkness. The principles outlined below and set out in the Institute of Lighting Professional's Guidance Note should also be applied to construction phase lighting.

7.2.2.2 *Mitigation*

7.2.2.2.1 New Lighting

To ensure detrimental lighting impacts on bats using the Site are avoided, there should be limited increased light spillage on to the surrounding boundary habitats and any roost spaces provided. Lighting should be restricted to the lowest level of illumination required for safety and security and only where needed. The following measures should be implemented within the lighting scheme:

- New column-mounted luminaires, lighting bollards and wall-mounted luminaires should be selected, sited and angled such that they do not spill unnecessary light on to areas where illumination is not required so that there is no significant increased light trespass on to existing nocturnally dark habitats where bats forage and commute.
- Ensure new LED luminaires have dimming capability, a warm white spectrum (ideally less than 2700, but definitively below 3500 Kelvin) with peak wavelengths higher than 550 nm and with no UV output.
- Where security lamps are used these should use a trigger to illuminate them (e.g. passive infra-red detector) and switch off after a short period (ideally 1 minute), rather than remaining on all night and generally lights should be switched off when not required;

Further guidance is available in Bats and artificial lighting in the UK (ILP 2018). Wherever possible guidance should be provided to new residents to ensure that they understand the reasons for protecting on-site ecology and carefully consider post-completion lighting additions.

7.2.2.3 *Enhancements*

7.2.2.3.1 General Principles

The development proposals should maintain or increase the biodiversity of this site in line with the National Planning Policy Framework. Hertfordshire Ecology (2020) have suggested several biodiversity enhancement opportunities, and these have been adopted where feasible.

7.2.2.3.2 Bat Roost Opportunities

It is recommended that only bat boxes integrated into built-structures are used, as these benefit from the thermal mass of the structure. Across the eight residential units proposed, four wall-integrated bat boxes should be installed. Two should be set on south-west facing and two on north-east facing gable walls. They should be installed high on the gable away from bedroom walls and security lighting. They should not be installed above windows or doors. The proposed dwellings can accommodate bat boxes in these locations. Examples of suitable boxes can be found on the NHBS website (www.nhbs.co.uk) or through Wildcare (www.wildcare.co.uk) by searching 'integrated bat boxes'.

Externally fitted boxes are not suitable and do not provide an adequate long-term solution.

7.2.2.3.3 Bird Nesting Opportunities

A generic approach to installing bird boxes around a site is often ineffective, or worse, exposes nesting birds to increased risk of predation. Nevertheless, given the presence of House Sparrow, it is worthwhile providing nesting opportunities in the form of 'Sparrow Terraces'. Therefore, three Schwegler 1SP Sparrow Terraces (<https://bit.ly/3gVsXst>) (or similar design alternative makes) should be installed within the development near to boundary hedgerows (grouped or fixed individually depending on location). These boxes should be at least 3 m above the ground (preferably below the eaves) and avoiding direct sunlight (not directly south-facing).

7.2.2.3.4 Hedgehogs

As Hedgehogs are likely to be present and rely upon connectivity, the development should allow inter-connectivity between private gardens through the provision of 15 x 13 cm holes at ground level and marked by 'Eco Hedgehog Hole Fence Plates' (or similar) to ensure residents understand the purpose of the hole (these should include the Site boundary fences after consultation with the neighbouring land-owners).

7.2.2.3.5 Vegetation and Habitat Provision

The development should include the addition of new planting by way of a wildlife-friendly landscape plan. This should include retention of existing hedgerows where feasible and ideally replanting boundary vegetation where lost.

Planting should include a range of native plant species attractive to wildlife, particularly pollinating insects and those bearing berries and nuts. Where used non-native plant species should also seek to encourage invertebrates which will, in turn, promote bat and bird foraging opportunities. Where non-native plant species are used, the majority should comprise natural single-flower varieties whose flowers are accessible to pollinators.

When specifying plants specifically to attract pollinating insects, these should preferably be sourced from organic suppliers, as many commercial outlets use pesticides such as neonicotinoids which are persistent and can remain harmful to invertebrates.

8 CONCLUSIONS

There are no significant ecological constraints to the redevelopment of the Site, and impacts on the wildlife should be minimal. Redevelopment offers scope for increasing biodiversity and

providing opportunities for roosting bats that are currently lacking, along with maintaining access routes for Hedgehogs and providing new planting to encourage wildlife.

9 BIBLIOGRAPHY

Andrews, H (2016). *Bat Tree Habitat Key* (3rd Edn.)

Anon (1981). *Wildlife and Countryside Act*. HMSO London.

Anon (1992). *Protection of Badgers Act*. HMSO London.

BSI 2013. *BS42020:2013 Code of Practice for Planning and Development*.

CIEEM (2017). Guidelines on Preliminary Ecological Appraisals. Technical Document.
www.cieem.net

Collins, R. (2016). *Bat Surveys for Professional Ecologists – Good Practice Guidelines (3rd Edition)*.
Bat Conservation Trust, London.

DEFRA (2017). *The Conservation of Habitats and Species Regulations 2017*. Statutory Instrument
no. 1012. (SI 2017/1012) Department for Environment, Food & Rural Affairs, TSO, London.

Institution of Lighting Professionals (2018). *Bats and artificial lighting in the UK*. Guidance Note
08/18.

JNCC (2010). *Handbook for Phase 1 Habitat Survey - a Technique for Environmental Audit*.
England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.

MHCLG (2018). National Planning Policy Framework (NPPF) 2018.

ODPM (2005). *Planning Policy Statement 9: Biodiversity and Geological Conservation Government
Circular 06/2005*. TSO

OPSI 2006. *Natural Environment and Rural Communities Act 2006*. TSO, London

APPENDIX

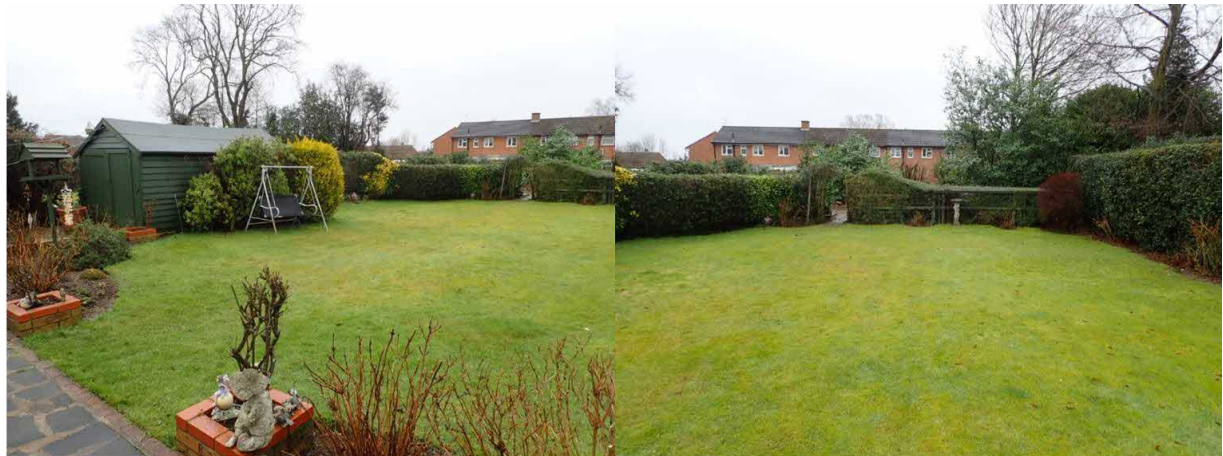
Photographs

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PHOTOGRAPHS



1 and 2: 45 Chesham Rd –Front (northern aspect); and Rear (southern aspect) respectively



3 & 4: 45 Chesham Road –Rear garden showing the extent of lawn and holly hedges.



5 & 6: 45 Chesham Rd –Front garden hedge; and works to remove Cherry Laurel at the rear.



7 & 8: 46 Chesham Road –Front (northern aspect); and Rear (southern aspect) respectively.



9 & 10: 46 Chesham Road –Loft; and front garden hedge (with Holly tree to the right).



11 & 12: 46 Chesham Road –Rear garden and works to remove 'Leylandii' hedge and Cherry Laurel at the rear.