Imprint Ecology

Date of issue: **20/10/2023**

Ecological Impact Assessment

50 Lewes Road, Ditchling, Hassocks, BN6 8TU

On behalf of Rob Beacroft

Version 02

Contents

1. Executive Summary

Site Details

- 50 Lewes Road, Ditchling, Hassocks, BN6 8TU (OS Grid Reference: TQ 32860 14927)

Scope of Works

- Imprint Ecology was commissioned to undertake an Ecological Impact Assessment at a detached bungalow which is required to inform a planning proposal to extend the existing detached dwelling and demolish the single detached garage on site.

Key Ecological Constraints

- All British bat species and their roosts are fully protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended).

Results

- In accordance with Bat Conservation Trust guidelines (Collins, J. 2016) the bungalow was categorised as having low suitability to support roosting bats.
- One dusk emergence survey for bats was carried out on 23rd August 2023. No evidence of roosting bats was found.
- No other protected species surveys have been recommended.

Mitigation

- The proposed development can proceed lawfully with minimal impact to bats at this time following mitigation measures to safeguard local wildlife.
- A sensitive lighting plan will be designed to ensure the site is not well-lit at night, avoiding disturbance to foraging and commuting bats.

Recommendations for Biodiversity Net Gain

- Enhancements for bats on site with integrated/external bat boxes.
- Enhancements for birds on site with integrated/external bird boxes.
- Planting suggestions to support local wildlife including reptiles, hedgehogs, nesting birds, and invertebrates.

2. Introduction

2.1 Background and Proposed Development

Imprint Ecology was commissioned by Rob Beacroft to undertake an Ecological Impact Assessment at 50 Lewes Road, Ditchling, Hassocks, BN6 8TU (OS Grid Reference: TQ 32860 14927), hereafter referred to as 'the site'. The proposals include the extension of the existing bungalow and demolition of the existing single garage.

2.2 Experience of Ecologists

George Sayer (BSc (Hons) (Environmental Sciences), PgDip, (Endangered Species Recovery), MCIEEM, MArborA) holds a Level 2 Bat Licence from Natural England WML-CL18 – number 2018-34434. George is an ecological consultant with 10 years' experience surveying and monitoring bats and other protected species.

Emily Sabin BSc (Hons) (Wildlife Conservation) AMRSB, Accredited Agent under George Sayer's Natural England WML-CL18 Level 2 Bat Licence 2018-34434. She is an ecologist with four years' experience in ecological consultancy and a background in conservation research. She is a Volunteer Bat Rescuer for Sussex Bat Group and experienced in carrying out a range of protected species surveys. She is also the Water Vole Officer at the People's Trust for Endangered Species.

2.3 Purpose of the Report

This report contains the findings of an ecological assessment of the building and surrounding habitat. It seeks to identify potential ecological constraints that the proposals may have upon bats or other protected species and provides recommendations for further survey, impact avoidance, mitigation and enhancements where required. This report is valid for a maximum of 24 months from the date of issue. Should the proposals or site alter in any way, an ecologist should be consulted to re-inspect the site and confirm that this report is still accurate.

2.4 Site Description

The site is located off the south of the B2116, in the village of Ditchling. The surrounding landscape is predominantly semi-rural residential houses and gardens, pasture fields, hedgerows, lines of mature trees, and woodland. The entire plot covers 0.4 acres. Eight ponds lie within 500m of the site. A map showing the geographical location of the site can be seen in Figure 1 and Figure 2.

Figure 1 - Site location - ©OpenStreetMap contributors 2023.

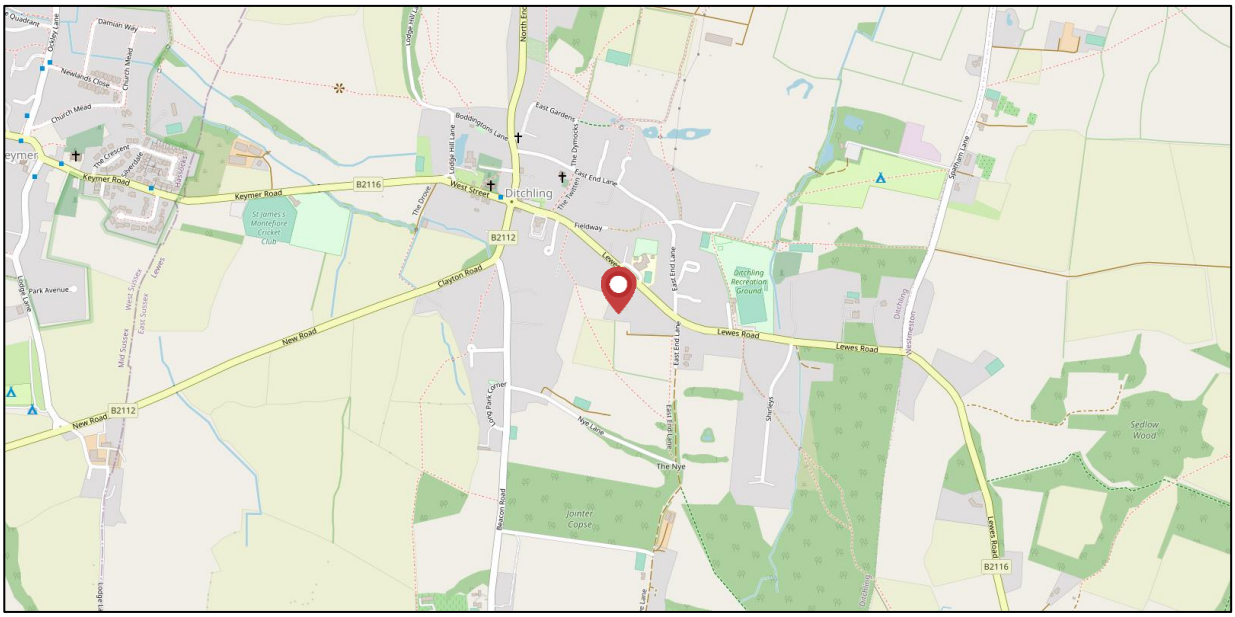

Figure 2 - Aerial image showing the location of the site indicated in red. Source: Google Earth (2023)

3. Methods

3.1 Desk Study

A desk study was undertaken to obtain ecological information about the site in context within the surrounding area.

The following data was requested from Sussex Biodiversity Record Centre (SXBRC), with data received on the 4th August 2023:

- Records of bats within 2km of the site

The Multi-Agency Geographic Information for the Countryside (MAGIC) website was accessed on 26th July 2023 to identify local statutory designated sites, priority habitats and European Protected Species Licences (EPSLs).

Satellite imagery from MAGIC, Google Earth. and Ordinance Survey maps were used to locate nearby ponds and understand the site's connections to surrounding countryside.

3.2 Site Assessment

A visual inspection of the site and its buildings was undertaken during daylight hours by ecologists George Sayer (qualifications in Section 2.2) on 27th July 2023, commencing at 11:00 hrs.

An endoscope, camera, binoculars and high-powered torches were used to search for evidence of bats and determine the suitability for the building to support bats and other protected species.

The presence of potential roosting features (PRFs) and access/exit routes which bats could use to enter these features were surveyed. Evidence of use by bats was also looked for, such as scratch marks, urine stains, lack of cobwebbing, feeding remains e.g. moth wings, droppings, and actual bats. An assessment of potential commuting routes and surrounding habitat was also undertaken to determine their potential to support bats.

Bat PRFs are usually found in specific areas, such as joints, cracks, gaps and cavities within structures like mature trees and buildings. These were prioritised as areas to check for bat evidence. Roosting bat evidence is not easy to find and not always visible, so any potential roosting locations were also noted.

Following inspection, the buildings were categorised as having either 'high', 'moderate', 'low' or 'negligible' suitability to support bats or as a 'confirmed roost or resting place for bats'. These categories are based on observations made during the survey and in the context of the descriptions laid out in Table 1.

Table 1 - Categorisation of bat roosting potential of structures (adapted from Collins, J. 2016.)

Suitability	Description
Confirmed bat roost or resting place	Presence of bats or evidence of bats.
High	Structure with many areas suitable for large numbers of roosting bats, with numerous potential access points. With good connectivity to high-quality foraging habitat, such as hedgerows, woodland and/or waterbodies. No evidence of current use by bats. E.g. large, uncluttered, draft-free loft spaces with access point or gaps beneath hanging tiles in a rural location.
Moderate	Structure with features suitable for moderate numbers of roosting bats, with good connectivity to the wider countryside. No evidence of current use by bats. E.g. cracks in walls, wooden soffit box with holes, gaps beneath fascia boards, under lifted roof tiles or lead flashing in a suburban or rural setting.
Low	Structure that offers a low number of roosting opportunities which could be used opportunistically by individual bats. Unlikely to be used by large numbers of bats on a regular basis. No evidence of current use by bats. E.g. small gaps under roof tiles, fascia boards or lifted lead flashing, with limited connectivity to fair-quality foraging or commuting habitat.
Negligible	Structure with no or very limited roosting opportunities for bats and/or where the structure is isolated from foraging habitat. No evidence of use by bats.

3.3 Bat Emergence/Re-entry Surveys

One dusk emergence survey was undertaken on 23rd August 2023. Surveys were completed in accordance with guidelines outlined in Bat Surveys for Professional Ecologists: Good Practice Guidelines (BCT 2016). Three surveyors were assigned a position to observe signs of bats emerging from their roosts (see Appendix 4 Bat Survey Results Plan). The surveys started 15 minutes before sunset and ended 1.5 hours after sunset.

Bats were identified using Peersonic RPA3, BatLogger M, and Echometer Touch 2 Pro full spectrum recording bat detectors. The surveys were led by Aidan Bird, Accredited Agent under George Sayer's Natural England WML-CL18 Level 2 Bat Licence 2018-34434.

The two surveyors were supported by infrared cameras (Canon XA50, Canon XA60, Canon XA40 and Nightfox Whisker) with high-powered infrared illuminators to improve spatial and temporal coverage. Footage was subsequently reviewed at 1.0x speed and any findings added to the survey results. Identification of bat species and sonogram analysis was undertaken using Wildlife Acoustics Kaleidoscope.

Table 2: Bat survey dates, times and weather conditions

Dusk Emergence – Survey 1			
Date	23/08/2023	**Sunset time**	20:06
Start time	19:46	**Finish time**	21:36
Start temperature	21.6°C	**Finish temperature**	18.3°C
Start cloud cover	30%	**Finish cloud cover**	60%
Start wind speed	Wf0	**Finish wind speed**	Wf1

3.4 Ecological Impact Assessment

The methodology for Ecological Impact Assessment (EcIA) follows best practice guidelines set by the Chartered Institute of Ecology & Environmental Management (CIEEM): 'Guidelines for Ecological Impact Assessment' (CIEEM, 2018). This includes identifying the baseline conditions on the site and rating the potential impacts of the development based on the sensitivity and importance of the ecological resource affected, combined with the magnitude, duration and scale of the impact (or change). This is assessed initially without mitigation measures, and then assessed again after allowing for the proposed mitigation measures, providing the residual impacts. The assessment is separated into construction effects and longer-term effects. Each ecological feature within the site has been considered within a defined geographic context such as:

- International and European
- National
- Regional
- County
- District
- Local
- Site Level
- Negligible

The ecological impacts resulting from the proposals were then outlined according to a defined set of characteristics as defined within 'Guidelines for Ecological Impact Assessment in the UK and Ireland' (CIEEM, 2018). This assessment considers the residual impacts after mitigation measures have been accounted for, highlighting any significant effects. A significant effect is "*an effect which either supports or undermines biodiversity conservation objectives for 'important ecological features' or for biodiversity in general*".

4. Baseline Ecological Results

4.1 Desk Study

The site is located within the South Downs National Park (SDNP). Designated sites information is summarised in Table 2.

Table 3 - Designated sites within 4km of the site. Source: MAGIC.

Site Name	Designation	Proximity to site	Reason for designation
South Downs	National Park	Within	1,600km2 of high-value lowland landscape, including farmland, river valleys, ancient woodland and lowland heaths containing a number of small villages and market towns.
Clayton to Offham Escarpment	SSSI	1.4km south	422.5-hectare linear biological SSSI. The chalk grassland is rich in flowering plants including burnt orchid *Orchis ustulata*, fragrant orchid *Gymnadenia conopsea*, frog orchid *Coeloglossum viride*, musk orchid *Herminium monorchis*, green-winged orchid *Orchis morio* and bee orchid *Ophrys apifera*. Breeding birds in Ashcombe Bottom include nightingale, all three British woodpeckers, tawny owl and a variety of warblers and tits.
Wolstonbury Hill	SSSI	3.7km west	The chalk downland of Wolstonbury Hill is rich in flowering plants and includes a number of uncommon species. Woodland is established in parts of the site. Chalk grassland has developed on thin rendzina soils on steep slopes. Rarer plants include round headed rampion *Phyteuma tenerum,* bee orchid *Ophrys apifera*, fly orchid *Ophrys insectifera*, pyramidal orchid *Anacamptis pyramidalis*, early purple orchid *Orchis mascula* and the only known Sussex locality for one other species: Dyer's greenweed *Genista tinctoria.*
Ditchling Common	SSSI	2.9km north	164-acre biological SSSI the common has several different types of acidic heath grassland, together with areas of bracken, scrub, woodland, streams and a pond. The rich butterfly and moth fauna includes several uncommon species. It is in this area of the middle Sussex Low Weald that the old clay land community of herbs and sub-shrubs, grasses and sedges, on the spectrum from marsh to dry slope, is at its most complete.

4.2 Habitats

There was one detached bungalow and a detached garage on site. The property sits in the centre of the plot and the driveway in the northern section. The gardens are managed and mainly laid to a frequently mown lawn of negligible ecological value with boundaries of hedgerow, ornamental shrubs and small trees.

Also present are areas of hardstanding and unsealed surfaces of negligible ecological value.

Ancient and Semi-Natural Woodland, Deciduous Woodland, Lowland Meadows, Chalk River, and Good quality semi-improved grassland lie within 2km of the site. These habitats of Principal Importance are listed in Section 41 of the NERC Act, 2006. Section 40 places a duty on Local Planning Authorities to have due regard to biodiversity.

4.3 Species

4.3.1 Bats

Desk Study

The SXBRC data search returned records of at least 13 bat species recorded within 2km of the site between 2013 and 2023. Species recorded in the 2km search area are summarised in Table 4 below.

Table 4: SXBRC data search results: bat species records within 2km of the site.

Number of records	Scientific name	Common name
1	*Barbastella barbastellus*	Western Barbastelle
1	*Chiroptera*	Unspecified bat species
7	*Eptesicus serotinus*	Serotine
1	*Myotis bechsteinii*	Bechstein's
1	*Myotis daubentonii*	Daubenton's
2	*Myotis mystacinus*	Whiskered
12	*Myotis mystacinus/brandtii*	Whiskered/Brandt's
2	*Myotis nattereri*	Natterer's
1	*Nyctalus leisleri*	Lesser Noctule
3	*Nyctalus noctula*	Noctule
3	*Nyctalus/Eptesicus agg.*	Noctule/Serotine
2	*Pipistrellus*	Unspecified pipistrelle
1	*Pipistrellus nathusii*	Nathusius's pipistrelle
10	*Pipistrellus pipistrellus*	Common pipistrelle
6	*Pipistrellus pygmaeus*	Soprano pipistrelle
3	*Plecotus*	Unspecified long-eared
1	*Plecotus auritus*	Brown long-eared

The most notable record is of a Western barbastelle bat 1.6km southeast of the site in 2021. Barbastelle bats are considered rare and afforded extra protection under Annex II of the European Union Council Habitats Directive 92/43/EEC. They are generally found in deciduous woodland and areas with water, like woodland streams and ponds, in central and southern England and Wales.

One European Protected Species Licences has been granted by Natural England within 2km of the site allowing the purposeful destruction or disturbance of bat roosts or resting places. This was at a site located 560m west and for the purpose of the destruction of a resting place of a roost containing common pipistrelle and brown long-eared bats, licence number EPSM2011-3479, granted in 2012.

Preliminary Bat Roost Assessment

The building affected by the proposals consists of a detached single-storey bungalow (B1) and a detached garage (B2) on a medium-sized plot.

B1:

The bungalow is of brick-built L-shaped construction with a simple pitched roof and gabled sides. The roof is clad with concrete slab tiles which are in good condition. The rear (southern) aspect contains a raised valley tile and a raised ridge tile, which could allow access for individual crevice-dwelling bats to roost.

The gables are clad with clay hanging tiles which are in good condition with a limited number of gaps beneath the tiles that could allow access for crevice-dwelling bats. There is a chimney emerging from the roof of the western gable and a small gap was noted beneath the flashing which was lifted away where the chimney adjoins the roof.

There are soffits and fascia of modern uPVC material and together with the doors and windows appeared to be well-sealed in excellent condition with no visible damage.

The brick work appeared in good condition with no cracks, splits, missing mortar or other features that would support roosting bats.

Internally, a large loft void was inspected for evidence of bats. The loft was partially boarded and insulated with large amounts of loose fibre insulation. The timber rafters were exposed throughout the loft and it was lined with a Breathable Roofing Membrane. Very small tears were noted in the felt but otherwise the lining was well-sealed and did not allow in daylight suggesting numerous potential access points for bats.

B2:

The garage was of brick-built construction with a simple pitched roof clad with concrete slab tiles and gabled sides, the northern gable was blocked by vegetation. The southern gable was clad with clay hanging tiles which appeared in good condition. A limited number of gaps were noted that could allow access for crevice-dwelling bats.

No roof tiles or other potential roost features were identified on the garage.

Overall, in accordance with Table 1, B1 and B2 were assessed as having low suitability for roosting bats.

Dusk Emergence Survey

One dusk emergence survey was undertaken during the optimal survey period for bats in good weather conditions. No constraints which would cast doubt on the results of this survey were encountered. The results of the survey are presented in Table 3.

Table 3: Dusk bat survey results.

<table>
<tr><th>Survey Date</th><th>Emergence/Re-entry Results</th><th colspan="3">Bat activity</th></tr>
<tr><td rowspan="8">23/08/2023</td><td rowspan="8">No bats were recorded emerging from the building.</td><td>Species</td><td>First pass</td><td>Last pass</td></tr>
<tr><td>Common pipistrelle</td><td>20:19</td><td>21:29</td></tr>
<tr><td>Soprano pipistrelle</td><td>20:26</td><td>21:21</td></tr>
<tr><td>Noctule</td><td>20:30</td><td>21:32</td></tr>
<tr><td>Serotine</td><td>20:31</td><td>20:49</td></tr>
<tr><td>Myotis</td><td>21:00</td><td>21:22</td></tr>
<tr><td colspan="3">Activity overview:

Moderate levels of bat activity were recorded and observed.

Common and soprano pipistrelles were recorded frequently passing over the site during the first hour after sunset and using the garden and field boundaries as a commuting corridor. Individual</td></tr>
</table>

		common pipistrelles were infrequently using the rear garden for foraging. Infrequent serotine calls were heard during the first 30 minutes after sunset and seen passing across the site. Distant noctule calls were recorded throughout the survey. A single Myotis sp. was recorded making two passes across the site. Infrared camera footage review revealed no bats displaying emergence/re-entry behaviour around the building.

4.3.2 Reptiles and Amphibians

The buildings and hard ground are of negligible value for reptiles. The modified grassland is very well-maintained and frequently mown and considered of negligible value for reptiles and amphibians. There are eight ponds within a 500m radius of the site but there are no suitable waterbodies on site that would support great crested newts (GCN) during their breeding phase. The ornamental shrubs on site may offer shelter and foraging opportunities for reptiles/amphibians. Subsequently, colonisation of the site by reptiles and amphibians is considered unlikely and the site is considered to be of **site value** for occasional reptiles and amphibians.

4.3.3 Hedgehogs

Hedgehogs mainly feed on invertebrates such as earthworms, earwigs and beetles and earthworms. They thrive in a mosaic habitat of grassland, deadwood and hedges/trees. Hedgehogs are considered to be locally abundant and widespread. The boundary ornamental shrubs and lines of trees are of low value to hedgehogs. Overall the site is considered to be of **site value** for hedgehogs.

4.3.4 Nesting birds

Overall the site is of low value to nesting birds, in the form of hedges, shrubs and trees which are mostly outside of the construction impact zone. The grassland is too small and enclosed

and managed too frequently to support ground nesting birds, such as skylarks. Such birds however, may use the adjacent fields. The habitats suitable to support birds on site make up a very small percentage of suitable nesting habitat within the local landscape. The site is considered to be of **site value** for nesting birds.

4.3.5 Invertebrates

The site offers a nectar resource for invertebrates. However, due to the site's maintained small size, it is highly unlikely that notable species and assemblages rely on it. Overall, the Site is assessed to be of **site value** for invertebrates.

4.3.6 Dormice

Dormice are well recorded in this area but the hedges and shrubs on site are too isolated to support dormice, either foraging, nesting or commuting. Dormice are not considered further in this report.

4.3.7 Badger

Badger records in Sussex are confidential however they are anticipated to be present in this area. The site is not well-connected to suitable woodland habitat and is of negligible value for foraging and commuting badger due to its manicured nature. Badgers are not considered further in this report.

5. Impact Assessment, Mitigation and Enhancements

The proposed development must adhere to the mitigation measures outlined in this report to prevent committing an offence. The development has an opportunity to enhance habitats for bats, birds and insects. Such enhancement measures are in line with the National Planning Policy Framework (NPPF) (2021) and with the relevant South Downs Local Plan Policies SD2 and SD9.

Paragraph 179 of the NPPF states that "*To protect and enhance biodiversity and geodiversity, plans should:/… promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity*."

5.1 Designated Sites

Given the intervening distances and the small scale of the proposals, impacts upon local designated sites are anticipated to be of minor magnitude and highly unlikely to occur. Indirect impacts from traffic pollution during construction might cause degradation of the protected sites. This increase in pollution would be minimal, with no increase in such impacts arising in the future. No impacts upon bats or flightlines would occur, assuming basic avoidance measures are incorporated into proposals. The site does not have to demonstrate nitrate neutrality.

Mitigation

All construction will be undertaken in accordance with best practice advice with regards to control of dust, noise and emissions. Specific avoidance measures below will be put into place to ensure that the proposals make no impacts beyond site level, to avoid affecting nearby designated sites and protected/priority habitats.

Residual Impacts

The overall impact of this proposal on designated sites will be **negligible**.

5.2 Habitats

Potential Impacts

In the absence of mitigation, the proposals would increase the dust, noise and light pollution of adjacent garden habitats. These impacts would be no greater than site level and would be minimal and short term.

Mitigation

- Trees on site to be retained will be protected from works. As a minimum, construction works will avoid the Root Protection Areas (RPA) of individual trees. Ideally, heavy machinery will give trees a 10m buffer. RPAs will be established around the trees proposed for retention. The RPA buffer zone is the full area of a tree's canopy size on the ground below. This should be in place during construction works to prevent machinery, chemicals, heat and dust from damaging roots and foliage. A temporary hoarding-type fence could be erected for the duration of works to protect hedges/trees closest to the works, these protection measures should be made in accordance with British Standard 5837:2012.

- Any shrubs removed to accommodate the development must be replaced with new native plants.

- Artificial grass will not be fitted anywhere on site. No vegetation will be burned anywhere on site. Silt and water run-off must be managed so that it does not pollute the site.

Residual Impact

Once mitigation and enhancements have been taken into account, the resulting impacts of this proposal on habitats will be **negligible** and **non-significant**.

5.3 Species

5.3.1 Bats

Potential Impacts

Artificial lighting may impact bats commuting across the site. No impacts upon bat roosts are expected, as a detailed dusk survey in August 2023 revealed the building to not be currently supporting roosting bats.

Mitigation for Bats

- Lighting – Artificial Light At Night (ALAN) adversely affects bats, invertebrates and other nocturnal animals (Bat Conservation Trust and the Institute of Lighting Professionals, 2023). ALAN creates a barrier for bats and disturbs their natural foraging and commuting patterns, and it must be avoided across the site.

  If exterior lighting is to be installed on site, this will be kept to a minimum and the following measures will be taken:

  - No exterior lighting, including during construction, will be directed at bat boxes, vegetation, hedgerows, trees, waterbodies, and other key habitat features.
  - Red spectrum lighting to be considered in place of white lighting. (Bats are more sensitive to white light compared to red light).
  - Luminaires will face downwards and mounted horizontally, with no light output above 90° and no upward tilt.
  - Security lighting will be set on motion sensors and set to a short timer. For residential purposes, a 1 or 2 minute timer is likely to be appropriate.
  - All luminaires will lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used.
  - LED luminaires will be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
  - A warm white light source (2700Kelvin or lower) will be adopted to reduce blue light component.

- Roof Lining – Breathable roofing membrane (BRM) should ideally not be installed in new roof voids. The use of BRMs such as '*Tyvec'*, along with other bitumen that contain polypropylene filaments e.g. type 5U, are recommended to be avoided in general, as

bats could gain access to the roof in the future. BRMs can cause fatal harm to bats through entanglement and by creating unfavourable climatic conditions within a roosting area. Roofing spaces should be lined with traditional 1F hessian-backed bitumen felt which complies with BS EN 13707:2013 and BS 5250:2011 (as amended). See more at bats.org.uk/breathable-roofing-membranes.

- The use of sticky fly paper, pesticide treatment and wood preservatives in roof voids can also be harmful to bats (see gov.uk/bat-roosts for further advice and a list of approved bat safe treatments, if required).

Residual Impacts

Once mitigation and enhancements have been taken into account, the residual impacts for bats will be **negligible.**

5.3.2 Hedgehogs

Potential impacts

The construction phase is unlikely to harm hedgehogs as it is focused on the existing buildings and sealed surfaces, but the following mitigation measures will protect hedgehogs (and other ubiquitous mammals including mice, rabbits and voles which are protected under the Mammals Act 2006) from harm that may occasionally use the site.

Mitigation for Hedgehogs

All holes/excavations left open overnight will be covered or provided with an appropriate safe escape route for small animals to escape from, such as a gently sloping, solid wooden ramp with a rough surface. Open pipework must be checked they are empty and then closed off at the end of each working day.

Residual Impacts

Once mitigation and enhancements have been taken into account, the residual impacts for hedgehogs will be **negligible.**

5.3.3 Invertebrates

Potential Impacts

A non-significant reduction of nectar resources during construction phase.

Mitigation for Invertebrates

Plants that are toxic to insects must be avoided and avoidance of pesticides will be considered across the site.

Residual Impacts

Once mitigation and enhancements have been taken into account, the residual impacts for invertebrates will be **negligible.**

5.3.4 Nesting birds

Potential impacts

The building has low potential to support nesting birds and renovations may remove nesting opportunities. Clearance of any vegetation to accommodate the new proposals may disturb nesting birds.

Mitigation for Birds

Any clearance of vegetation will be carried out outside of the nesting bird season (1st March - 31st August). If vegetation clearance is proposed within the nesting bird season, the shrubs must be first checked for presence of bird nests immediately prior to works starting. If a nest is found during construction works or during vegetation removal, it will be left and a 5m buffer will be in place until the young have fledged.

Residual Impacts

Once mitigation and enhancements have been taken into account, the residual impacts for nesting birds will be **negligible.**

5.3.5 Reptiles and Amphibians

Potential impacts

There is negligible-low potential for impacts upon reptiles and amphibians during the construction phase as the site contains insufficient habitats to support any significant populations and the works are focused on the existing buildings and sealed surfaces although occasional commuting reptiles/amphibians could be affected.

Mitigation for reptiles

- Any piles of rubble, brick, timber and other materials will be dismantled carefully by hand.

- Areas of short grass near the construction zone will continue to be kept short to prevent reptiles colonising this area.

Residual Impacts

Once mitigation and enhancements have been taken into account, the residual impacts for bats will be **negligible.**

6. Ecological Enhancements

Development proposals will be expected to demonstrate an overall positive impact on the natural environment as set out in SDLP Policy SD2. The following ecological enhancements are to be considered to result in a net gain in biodiversity.

6.1 Enhancement for Habitats

- Use peat-free compost, compost and use rainwater to maintain new planting.

- If any new trees are planted on site, they should be native to England, and selected carefully based on their high value for wildlife. For example:
    - Bird cherry *Prunus padus*
    - Common beech *Fagus sylvatica*
    - Crab apple *Malus sylvestris*
    - Elder *Sambucus nigra*
    - Field maple *Acer campestre*
    - Hawthorn *Crataegus monogyna*
    - Hazel *Corylus avellana*
    - Rowan *Sorbus aucuparia*
    - Silver birch *Betula pendula*
    - Wild cherry *Prunus avium*

- The existing lawn could be enhanced by sowing wildflowers or laying wildflower turf within the garden. Creating a mosaic of grassland habitat can be aesthetically pleasing, as shown in Figure 1 below:

Figure 4 - Example of phased cutting and wildflower meadow creation with mown path

6.2 Enhancement for Protected Species

- An integrated bat box, external bat box or tiles with suitable gaps (or readymade 'bat tiles') will be incorporated into the new designs. Bat boxes/tiles will be erected at least 3-5m high, facing south or south-west receiving sunlight for several hours a day. No artificial lighting will shine on new bat roosting features. See Figures 5-10 for examples.

Figure 5 – 'Chillon' Woodstone Bat Box

Figure 6 - 'Vivara' Pro Woodstone Bat Box

Figure 7 – 'Tudor' Bat access tiles

Figure 8 – BirdBrickHouses
Integrated brick bat box

Figure 9 – BirdBrickHouses
Integrated mesh-fronted bat box *(suitable to install behind cladding)*

- A solid wooden hedgehog house will be installed on site in a quiet corner of the site hidden within vegetation (See Figure 10).

Figure 10 - Solid wooden hedgehog house

- One integrated tit box (Figure 11) or an integrated sparrow terrace box (Figure 12) is recommended. Bird boxes must face north/north-east, avoid direct sunlight and prevailing winds. Alternatively, an external bird box such as Figure 13 could be installed 3m high on a tree on site, facing north. An open-fronted bird box (Figure 14) could be installed within a shrub/hedgerow, surrounded by foliage.

Figure 11: Integrated tit box. Source: BirdBrickHouses

Figure 12: Integrated sparrow terrace – mesh-fronted for behind cladding. Source: BirdBrickHouses

Figure 13: Vivara Pro Woodstone Bird Box

Figure 14: Vivara Pro Open-fronted Bird Box

- Bee bricks could be incorporated into the walls of the new designs; these bricks support small numbers of solitary bees such as the red mason bee. Installed 1-2m high, facing south, receiving several hours of sunlight per day. (Figure 15).

Figure 15: Bee brick for solitary bees - Green and Blue

- A small log pile could be created in a quiet area with the first layer partially buried to attract a variety of invertebrates, reptiles and amphibians. Even a single log buried in a border/bed provides value for stag beetle larvae.

7. Conclusion

Overall, the proposals are considered to have a negligible impact upon bats and other ecology and no further surveys are recommended.

When the mitigation measures have been taken into account, the proposals are considered to have a negligible impact upon local ecology with no significant impacts expected on any protected/priority habitats or protected species or designated sites.

Once ecological enhancements are taken into account, the proposals would result in a positive net gain in biodiversity. The proposals therefore accord with relevant legislation and local and national planning policies.

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Appendix 1: Site Photographs

Photo 1 – Internal loft void

Photo 2 – Internal loft void

Photo 3 – Internal loft void

Photo 4 – Internal loft void, torn felt

Photo 5 – North facing elevation

Photo 6 – South facing elevation

Photo 7 – Hanging tiles on gable

Photo 8 – Soffit and fascia made of modern uPVC

Photo 9 – Concrete slab roof tiles and hanging tiles on gable

Photo 10 – Chimney with lifted flashing

Photo 11 – Rear garden

Photo 12 – Rear garden passageway

Photo 13 – Rear garden

Photo 14 – Rear garden

Photo 15 – Single detached garage

Photo 16 – Single detached garage

Appendix 2: Planning Policy

The latest National Planning Policy Framework (NPPF) (Defra, 2022) was published in July 2021. The National Planning Policy Framework (2021) outlines the government's responsibility to minimise adverse impacts on biodiversity and bestow biodiversity net gains where possible.

Paragraphs of relevance within the NPPF include: Paragraph 174 of the NPPF states that "*Planning policies and decisions should contribute to and enhance the natural and local environment by:/… minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*."

Paragraph 179 of the NPPF states that "*To protect and enhance biodiversity and geodiversity, plans should:/… promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity*."

Paragraph 180 of the NPPF states that "When determining planning applications, local planning authorities should apply the following principles:

a) *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;*
b) *development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
c) *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 reasons1 and a suitable compensation strategy exists; and*
d) *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments*

should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

The NPPF is also complemented by the Circular 06/2005: Biodiversity and Geographical Conservation – Statutory Obligations and Their Impacts Within The Planning System (Office of the Deputy Prime Minister, 2005). Paragraph 99 states that "*It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision*."

The site sits within the South Downs National Park. The South Downs Local Plan (2014-2033) includes the following relevant policies:

- Core Policy SD2: Ecosystem Services 1. Development proposals will be permitted where they have an overall positive impact on the ability of the natural environment to contribute goods and services. This will be achieved through the use of high quality design, and by delivering all opportunities to: a) Sustainably manage land and water environments; b) Protect and provide more, better and joined up natural habitats; c) Conserve water resources and improve water quality; d) Manage and mitigate the risk of flooding; e) Improve the National Park's resilience to, and mitigation of, climate change; f) Increase the ability to store carbon through new planting or other means; g) Conserve and enhance soils, use soils sustainably and protect the best and most versatile agricultural land; h) Support the sustainable production and use of food, forestry and raw materials; i) Reduce levels of pollution; j) Improve opportunities for peoples' health and wellbeing; and k) Provide opportunities for access to the natural and cultural resources which contribute to the special qualities. 2. Development proposals must be supported by a statement that sets out how the development proposal impacts, both positively and negatively, on ecosystem services;

- Strategic Policy SD9: Biodiversity and Geodiversity 1. Development proposals will be permitted where they conserve and enhance biodiversity and geodiversity, giving particular regard to ecological networks and areas with high potential for priority habitat restoration or creation. Prior to determination, up-to-date ecological information should be provided which demonstrates that development proposals: a) Retain, protect and enhance features of biodiversity and geological interest (including supporting habitat

and commuting routes through the site and taking due account of any use by migratory species) and ensure appropriate and long-term management of those features; b) Identify and incorporate opportunities for net gains in biodiversity; c) Contribute to the restoration and enhancement of existing habitats, the creation of wildlife habitats and the creation of linkages between sites to create and enhance local and regional ecological networks; d) Protect and support recovery of rare, notable and priority species; e) Seek to eradicate or control any invasive non-native species present on site; f) Contribute to the protection, management and enhancement of biodiversity and geodiversity, for example by supporting the delivery of GI and Biodiversity Action Plan targets and enhance Biodiversity Opportunity Areas (BOA); and g) Comply with the mitigation hierarchy as set out in national policy.

- Development Management Policy SD11: Trees, Woodland and Hedgerows 1. Development proposals will be permitted where they conserve and enhance trees, hedgerows and woodlands. 2. Development proposals that affect trees, hedgerows and woodland must demonstrate that they have been informed by a full site survey, including an Ecological Survey, Arboricultural Method Statement and associated Tree Protection Plan, and include a management plan. 3. The removal of protected trees, groups of trees woodland or hedgerows will only be permitted in exceptional circumstances and in accordance with the relevant legislation, policy and good practice recommendations. Where protected trees are subject to felling, a replacement of an appropriate number, species and size in an appropriate location will be required. 4. Development proposals must provide adequate protection zones and buffers around hedgerows and other woodland and trees to prevent damage to root systems and taking account of future growth. A minimum buffer of 15 metres will be required between the development and ancient woodland or veteran trees. 5. A proposed loss or damage of non-protected trees, woodland or hedgerows should be avoided, and if demonstrated as being unavoidable, appropriate replacement or compensation will be required. 6. Development proposals must demonstrate that appropriate protection measures are in place prior to any work on site throughout the development process as part of a comprehensive landscaping plan, and that suitable opportunities for the restoration, enhancement or planting of trees, woodland, and hedgerows are identified and incorporated. 7. Opportunities should be identified and incorporated for planting of new trees, woodlands and hedgerows. New planting should be suitable for the site conditions, use native species and be informed by and contribute to local character, and enhance or create new habitat linkages.

- Strategic Policy SD45: Green Infrastructure 1. Development proposals will be permitted where they demonstrate that they: a) Maintain or enhance GI assets, GI links and the overall GI network; and b) Provide new GI, or improvements to existing green assets and green linkages, which are integrated into the development design, that meets the needs of communities both within and beyond the site's boundaries. 2. GI proposals must contribute to multifunctional landscapes which: a) Strengthen connectivity and resilience of ecological networks; b) Incorporate GI measures that are appropriate to the type and context of the development proposal as part of an overall landscape design; c) Maximise opportunities to mitigate, adapt and improve resilience to climate change; d) Maximise opportunities for cycling and walking, including multi user routes and, where possible, facilitate circular routes; and e) Support health and wellbeing and improve opportunities for understanding and enjoyment of the National Park and its special qualities. 3. Development proposals that will harm the GI network must incorporate measures that sufficiently mitigate or offset their effects. 4. Where appropriate, the Authority will seek to secure via planning condition or legal agreement provision for the future management and/or maintenance of GI.

Appendix 3: Legislation of Relevant Species/Habitats

The following legislation is relevant to survey findings and is only a summary.

Statutory Designated Sites

Designation	Relevant legislation
SSSI (Site of Special Scientific Interest)	Wildlife and Countryside Act 1981 (as amended)
SPA (Special Protection Area)	Conservation of Habitats and Species Regulations 2017 (as amended)
SAC (Special Areas for Conservation)	Conservation of Habitats and Species Regulations 2017 (as amended)
Ancient Woodland	National Planning Policy Framework (2021)
Habitats of Principal Importance	Section 41 of the NERC Act 2006 and National Planning Policy Framework (2021)

Protected/Priority Species and Habitats of Principal Importance

Bats

All UK bats are European Protected Species. All British bat species are defined in UK law as 'Protected Species' under Schedule 2 of the Conservation of Habitats and Species Regulations, 2017 (as amended). All bat species in England are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), which confers additional protection under Section 9 of the act, and through the Countryside and Rights of Way (CRoW) Act, 2000.

All UK bats are listed in Appendix II and III of the Bern Convention. Bats and their habitats are listed in Appendix II of the Bonn Convention. Seven bat species are listed under Section 41 of the NERC Act 2006.

This combined legislation means that it is a criminal offence to:

- Deliberately kill, injure or capture bats

- Deliberately disturb bats, including in particular any disturbance which is likely to impair their ability to survive, to reproduce or to rear or nurture their young, or their ability to hibernate or migrate, or which is likely to affect significantly their local distribution or abundance
- Damage or destroy a breeding site or resting place of a bat
- Damage or destroy, or obstruct access to, any structure or place which any bat uses for shelter or protection
- Disturb bats while occupying a structure or place used for that purpose.

If proposed development work is likely to destroy or disturb bats or their roosts a license may need to be obtained from Natural England which would be subject to appropriate measures to safeguard bats. With suitable approved mitigation, exemptions can be granted from the protection afforded to bats under regulation 39 by means of a European Protected Species Licence (EPSL).

Natural England, for the Secretary of State for the Department for Environment, Food and Rural Affairs (DEFRA) is the appropriate authority for determining license applications for works associated with developments affecting bats. In cases where licenses are required, certain conditions should be met under the Habitats Regulations 2017 (as amended) to satisfy Natural England. These are:

1. Regulation 55(2)(e) states that licenses may be granted to 'preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.
2. Regulation 55(9)(a) states that a license may not be granted unless Natural England is satisfied 'that there is no satisfactory alternative'.
3. Regulation 55(9)(b) states that a license cannot be issued unless Natural England is satisfied that the action proposed 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Natural England expects the planning position to be fully resolved as this is necessary to satisfy tests 1 and 2. Full planning permission, if applicable, will need to have been granted and any conditions relating to bats fully discharged. For test 3, Natural England should be satisfied that sufficient survey effort has been carried out and that the impact assessment and

proposed mitigation measures (submitted with the license application) are adequate to maintain the species concerned at a favourable conservation status.

Nesting birds

All wild bird species, nests and eggs, are protected under the Wildlife and Countryside Act 1981 (as amended). It is illegal to intentionally kill, injure or take wild birds, damage or destroy their nest while in use or being built, possess, control or transport live/dead wild birds, parts or eggs, or sell or offer them for sale. 79 birds are fully-protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to disturb them and their dependent young while nesting or building nests. Some birds including kingfisher and house sparrow are listed under Section 41 of the NERC Act 2006.

Reptiles

Common reptiles (adder, grass snake, common or viviparous lizard and slow worm) are protected under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill or injure a reptile. Smooth snakes, sand lizards and pool frogs also receive this protection and are designated and protected as European protected species (EPS). EPS are protected under The Conservation of Habitats and Species Regulations 2017. All native reptiles are listed as rare and most threatened species under Section 41 of the Natural Environment and Rural Communities Act (2006). You must have regard for the conservation of Section 41 species as part of your planning decision.

Hedgehogs

Hedgehogs are protected by law under Schedule 6 of the Wildlife and Countryside Act 1981, making it illegal to kill or capture them using certain methods. They are also protected in Britain under the Wild Mammals Protection Act (1996), prohibiting cruelty and mistreatment. They're listed as a Species of Principle Importance in England under the Natural Environment and Rural Communities (NERC) Act 2006 Section 41. These laws make hedgehogs a material consideration for Local Planning Authorities (LPAs) during the planning process.

Appendix 4: Bat Survey Results Plan

Project: 50 Lewes Road	
August-September 2023	Author: Emily Sabin
For: Rob Beacroft	Scale: Approximate
Imprint Ecology	

Legend

- S1 — Surveyor positions
- Sight lines
- Infrared camera positions
- Location of bat emergences