Imprint Ecology

Date of issue: 14 November 2023

Ecological Impact Assessment

37 Plainwood Close, Chichester, West Sussex, PO19 5YB

On behalf of Mr Downham

Version 01

Contents

1. Executive Summary

Site Details

- 37 Plainwood Close, Chichester, West Sussex (OS Grid Reference: SU 85559 06990)

Scope of Works

- Imprint Ecology was commissioned to undertake an Ecological Impact Assessment at a detached house in Chichester which is required to inform a planning proposal for alterations and a two-storey extension to the existing dwelling.

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

- The site is assessed as having:
  - One building with moderate suitability to support roosting bats
  - Confirmed day roosts of brown long-eared bat (occasional use) and a single common pipistrelle bat
  - Moderate suitability to support foraging and commuting bats, with six species recorded onsite
- The site supports habitats of very low suitability at site value for common birds, hedgehogs and slow worms. These habitats will be unaffected by the proposed development.
- The site is likely absent of great crested newt and other rare/notable amphibians or invertebrates due to a lack of suitable habitat.

Mitigation

- A Method Statement of Works has been designed for the proposals at this site, because the bat roosts within the building will be retained. The Method Statement of Works will protect the roosts from any reckless or intentional destruction, damage or disturbance during works.
- The proposed extension affects the northern section of the main house which is located away from the emergence points and void space containing the bat roosts. Works will not impact the main loft void nor are they expected to alter the current conditions of the loft void that are suitable for roosting and/or hibernating bats.
- All roofers and contractors working on site will be given a copy of this Method Statement before works commence.

- No works will affect the existing, unconverted main roof void. Roof tiles on the main roof will not be removed or disturbed.
- Across the building, any “destructive works” i.e. removal of roof tiles, soffit, fascia will be removed carefully by hand to minimise risk of harming any bats using other areas of the building opportunistically.
- If a bat is found during works, all work will stop and a bat licenced ecologist will be contacted immediately. The ecologist will apply for a European Protected Species Licence (or a Bat Mitigation Class Licence, also known as the “low impact” licence) for from Natural England before works can resume. The initial destructive works should take place between mid-March and early-November, avoiding the winter hibernation period for bats.
- External Artificial Light At Night (ALAN) will be avoided at all costs.

Recommendations for Biodiversity Net Gain

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

2. Introduction

2.1 Background and Proposed Development

Imprint Ecology was commissioned by Mr Downham to undertake an Ecological Impact Assessment at 37 Plainwood Close, Chichester, PO19 5YB hereafter referred to as 'the site'. The proposals comprise alterations to the northern section of the house and a two-storey extension.

2.2 Experience of Ecologists

Emily Sabin BSc (Hons) (Wildlife Conservation) AMRSB, Accredited Agent under 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 Sussex Bat Group bat rescuer and experienced in leading 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 detached house is located on a large plot in the northern outskirts of Chichester. The site contains habitats that are ornamental in nature comprising sealed surfaces for parking and patio, modified grassland (mown lawn) and introduced shrubs. The surrounding environ is typified by semi-urban residential houses and gardens, cultivated arable fields, pasture fields, ancient and semi-natural deciduous woodland and lines of mature trees. It is worth noting that the site's western boundary runs along a dismantled railway line now known as Centurion Way. This supports a number of trees and hedgerows including mature oak trees. See Figure 1 for the site location and Figure 2 for an aerial view of the site.

Figure 1 - Site location - ©OpenStreetMap contributors 2023.

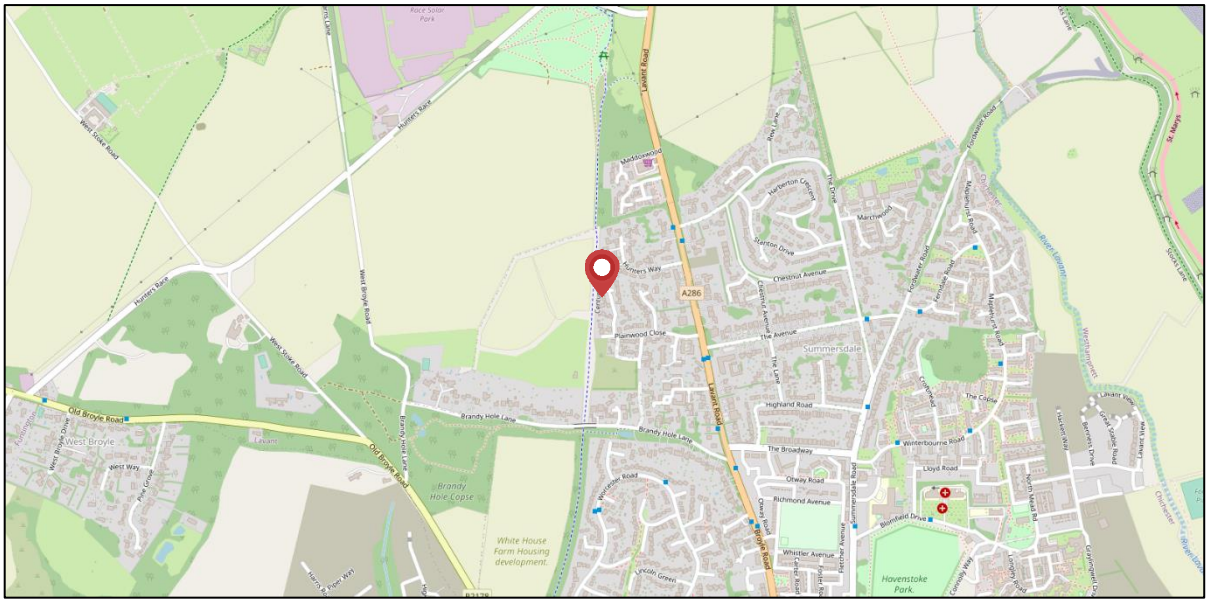


Figure 2 - Aerial image showing the location of the site indicated in red. Source: Google Earth (2023)

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 Multi-Agency Geographic Information for the Countryside (MAGIC) website was accessed on 31st July 2023 to identify local statutory designated sites, priority habitats and European Protected Species Licences (EPSLs). The Chichester District Council Interactive Map was also used to search for non-statutory designated sites.

Satellite imagery from MAGIC and Ordinance Survey maps were used to understand the site's connections to surrounding countryside.

3.2 Site Assessment

A thorough visual inspection of the site and its buildings was undertaken during daylight on 31st July 2023, commencing at 12:00 hrs. A camera, telescopic inspection mirror, telescopic ladders, binoculars and a high-powered torch was 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 suitability 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

Two dusk emergence surveys were undertaken on Thursday 24th August and Monday 18th September 2023. All visits were completed in accordance with guidelines outlined in Bat Surveys for Professional Ecologists: Good Practice Guidelines (BCT, 2016) which were the most up to date bat survey guidelines at the time of the surveys.

Two surveyors were assigned a position to observe signs of bats emerging from their roosts (see Appendix 2 for Bat Survey Results Plan). The surveys started 15 minutes before sunset and ended 1.5 hours after sunset.

The surveys were led by Emily Sabin (qualifications in Section 2.2) and Natural England Registered Consultant, Frances King-Smith BSc (Hons) CEcol MCIEEM (Natural England Level 2 Class Licence ref. 2020-48552-CLS-CLS). Frances is a Chartered Ecologist and has 16 years' experience in bat surveys, licensing and mitigation. The lead surveyors were assisted by a suitably trained and experienced bat surveyor.

Bats were identified using a Pettersson D240X time expansion detector with an Edirol R-05 solid state digital recorder and a Wildlife Acoustics Echo Meter Touch Pro 2 to record bats and identify species through call frequencies. On 24th August 2023, surveyors were supported by infrared cameras (Sony AX53, Nightfox Red, and Canon XF105) supported by high-powered Nightfox XB5 infrared illuminators to improve spatial and temporal coverage. Walkie-talkie radios were used by surveyors to confirm bat flight directions and emergences. Footage was subsequently reviewed at 0.5-1.0x speed to confirm findings. Sound analysis was undertaken using Wildlife Acoustics Kaleidoscope.

Table 2: Bat survey dates, times and weather conditions

Dusk Emergence – Survey 1			
Date	24/08/2023	**Sunset time**	20:06
Start time	19:51	**Finish time**	21:36
Start temperature	18°C	**Finish temperature**	16°C
Start cloud cover	30%	**Finish cloud cover**	80%
Start wind speed	Wf1	**Finish wind speed**	Wf1
Dusk Emergence – Survey 2			
Date	18/09/2023	**Sunset time**	19:11
Start time	18:56	**Finish time**	20:41
Start temperature	17°C	**Finish temperature**	16°C
Start cloud cover	0%	**Finish cloud cover**	0%
Start wind speed	Wf4	**Finish wind speed**	Wf2

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

4.1.1 Statutory/non-statutory designated sites and protected/priority habitats

The site is not located within any designated sites or protected/priority habitats. The site falls within the impact risk zones for Chichester Harbour Site of Special Scientific Interest (SSSI). It is within the 5.6km buffer for the Chichester and Langstone Harbours Special Protection Area (SPA). 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
Brandy Hole Copse	Local Nature Reserve (LNR)	356m SW	6-hectare ancient and semi-natural woodland with three wildlife ponds. Locally important habitat for birds, bats, and other animals.
Chichester Harbour	Area of Outstanding Natural Beauty (AONB)	2.9km S	Chichester Harbour is a large estuarine basin. At low tide, extensive mud and sandflats are exposed, drained by channels which unite to make a common exit to the sea. The site is of particular significance for wintering wildfowl and waders and also breeding birds both within the harbour and in the surrounding permanent pasture fields and ancient woodlands. The harbour boasts a wide range of habitats, most of which are nationally and internationally important for supporting high numbers of migrating and breeding birds.
Chichester Harbour	SSSI	2.9km S	
Chichester and Langstone Harbours	SPA; Ramsar	2.9km S	
Solent Maritime	Special Area of Conservation (SAC)	2.9km S	

Singleton and Cocking Tunnels

The Singleton and Cocking Tunnels SSSI, SAC lie 6.7km north. Therefore, the site lies within the 12km “Wider Conservation Area” for the SAC. All impacts to bats must be considered given that habitats within this zone are considered critical for sustaining local bat populations.

The Singleton and Cocking Tunnels are considered the most important site for hibernating bats in south-east England. During the winter months, the two disused railway tunnels support

very high numbers of hibernating bats, and are the only known location in Britain for the Greater mouse-eared bat *Myotis myotis*. Eight species have been found in all, and give a good representation of the diversity of bat species within the local area. Those best represented include: Natterer's *Myotis nattereri*, Daubenton's *Myotis daubentoni*, Brown long-eared *Plecotus auritus* and Brandt's *Myotis brandt*i/Whiskered *Myotis mystacinus*. Other species regularly occur in small numbers. The tunnels are also important for rare barbastelle *Barbastella barbastellus* and Bechstein's bat *Myotis bechsteinii*. Significant impacts upon bats and breaking of flightlines must be considered in line with South Downs Policy SD10.

4.2 Habitats

The site contains ornamental habitats comprising sealed surfaces for parking and patio, modified grassland (frequently mown lawn), and introduced shrubs. The garden lawn is well-managed and dominated by perennial rye-grass *Lolium perenne*. Other common forbs were identified in the low cut sward including trefoil sp. *Trifolium sp*, daisy *Bellis perennis*, yarrow *Achillea millefolium*, selfheal *Prunella vulgaris*, creeping cinquefoil *Potentilla reptans,* dandelion *Taraxacum sp.*, and ribwort plantain *Plantago lanceolata*. The site's western boundary beyond the client's ownership contains a large mature oak tree. More similar sized trees of varying ages lie beyond the site to the north and south connecting the site to the wider countryside. No protected/priority habitats are located on or adjacent to the site.

Overall, the habitats on-site are assessed to be no greater than site value.

4.3 Species

4.3.1 Amphibians

The site does not contain any waterbodies to support GCN or other amphibians. There are two ponds within 500m of the site located 209m south and 364m south. Research has concluded that in terms of distance travelled by great crested newts (GCN) from breeding ponds, they have been found at highest densities within terrestrial habitats of up to 200m and many studies have concluded a maximum migratory range of approximately 250m from a pond (Franklin, 1993) (Jehle, 2000) (Oldham, 1986). Further research has also been attained that suggests GCN are rarely found greater than 100m from their breeding ponds (Cresswell, 2004).

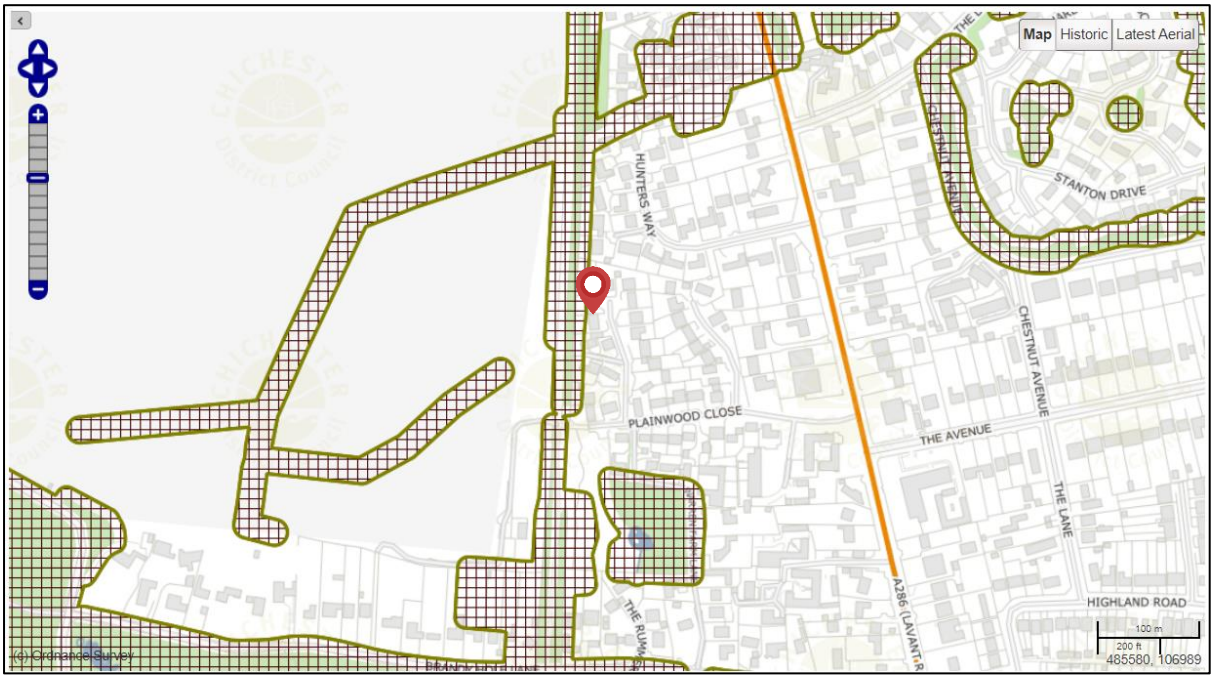
Given the intervening distances between ponds, it is unlikely that GCN would migrate across the site. Subsequently, colonisation on to site is considered highly unlikely.

4.3.2 Bats

Desk Study

The site is bound on its west border by the Bat Movement Network. This means it is connected to the wider countryside by natural corridors such as lines of mature trees, ancient woodland, deciduous woodland, and hedgerows. These features support roosting, foraging and commuting bats. Linear features like these act as navigational landmarks and can also provide

Figure 3: Bat Movement Network around the site. Source: Chichester District Council 2023



some protection from predators when bats are commuting between their roosts and their preferred foraging grounds (see figure 3).

Eight European Protected Species Licences (EPSLs) have been granted by Natural England within 2km of the site. allowing the purposeful destruction or disturbance of bat roosts or resting places. These are summarised in Table 4 below.

Table 4: Details of EPSLs within 2km. Source: MAGIC.

Species	Licence number	Proximity to site
Common pipistrelle Soprano pipistrelle	2018-37276-EPS-MIT	125m E
Soprano pipistrelle	2014-1891-EPS-MIT	250m E
Common pipistrelle Soprano pipistrelle Brown long-eared Serotine	EPSM2013-6117	295m S
Soprano pipistrelle	EPSM2013-6143	300m NE
Soprano pipistrelle	2020-45816-EPS-MIT	340m N
Common pipistrelle Soprano pipistrelle Brown long-eared	EPSM2012-5085	730m SE
Common pipistrelle Soprano pipistrelle Brown long-eared Natterer's	2020-49354-EPS-MIT-1	1.2km SE
Common pipistrelle	2014-4721-EPS-MIT	1.4km SE

Preliminary Bat Roost Inspection

37 Plainwood Close is set in a large plot with a front garden to the east and rear garden to the west. A small brick outbuilding with a slate tiled roof is present to the northwest of the house set within the garden. The main house is a brick-built dwelling with a hipped roof and garage to the north. The main roofs across the building are clad with overlapping slate tiles. There was no soffit, fascia or bargeboards present. The extension above the garage had been converted and two rooflights were set into the roof at the rear. A single chimney stack emerged from the centre of the main roof. The following potential roost features (PRFs) were identified:

- Minor lifting of tiles throughout the main roof of the property offering suitable crevices for bats to roost
- Minor lifting of the roof tiles on the conservatory roof and the small outbuilding/shed

- Gap at the apex of the north-facing gable
- Lifted lead flashing

Internally, there was a large loft void above the main section of the house accessible from the hallway. c.20 bat droppings morphologically similar to long-eared bat droppings were found scattered across this void. The void was lined with Type 1F bituminous roofing felt behind exposed timber rafters. The void was partially boarded above loose fibreglass insulation. No daylight was visible from within the void save small gaps at the eaves. The roof felt was torn and folded back in a few places. DNA analysis of droppings found within the loft established the presence of brown long-eared bat droppings. No sign of a maternity colony was identified.

In accordance with Table 1, the dwelling was assessed as a confirmed bat roost with 'moderate' suitability for roosting bats. See photos 1-12.

Photo 1: Interior loft void

Photo 2: Interior loft void

Photo 3: Interior loft void

Photo 4: Interior loft void, scattered bat droppings

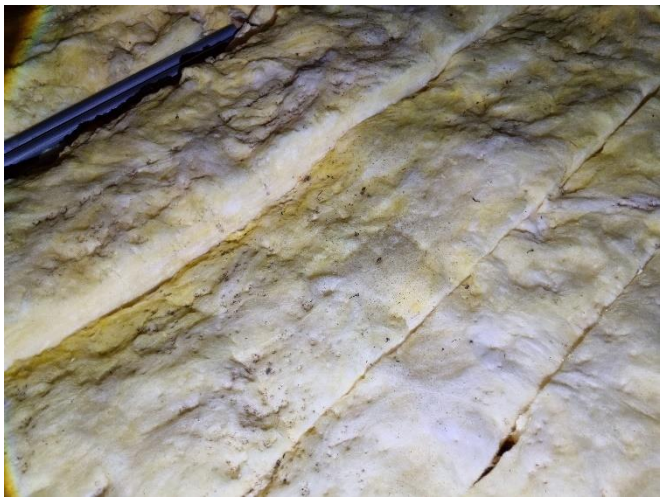


Photo 5: West facing elevation

Photo 6: West facing elevation. (Yellow circle shows common pipistrelle bat emergence location)

Photo 7: North facing hipped roof joining lower roof over garage. West facing skylight.

Photo 8: West facing elevation of converted room above garage with skylights and small outbuilding.

Photo 9: East facing elevation.

Photo 10: East facing elevation

Photo 11: Rear garden looking west.

Dusk Emergence Surveys

The results of the surveys are presented in Table 6.

Table 6: 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="9">24/08/2023</td><td rowspan="9">No bats seen or recorded emerging from the main dwelling.</td><td>Species</td><td>First pass</td><td>Last pass</td></tr>
<tr><td>Common pipistrelle</td><td>20:10</td><td>21:27</td></tr>
<tr><td>Noctule</td><td>20:14</td><td>21:12</td></tr>
<tr><td>Soprano pipistrelle</td><td>20:29</td><td>20:52</td></tr>
<tr><td>Barbastelle</td><td>20:31</td><td>-</td></tr>
<tr><td>Serotine</td><td>20:36</td><td>21:03</td></tr>
<tr><td>Brown long-eared</td><td>21:01</td><td>21:15</td></tr>
<tr><td colspan="3">Activity overview:
Moderate levels of bat activity were recorded and observed by all surveyors. Common and soprano pipistrelles were frequently recorded foraging and commuting along the west boundary. Common pipistrelles were seen foraging in the garden of the property.

Nine faint brown long-eared calls were detected but the bats were not seen. Infrared footage was reviewed at the time of the calls but did not reveal any emergences. A single barbastelle bat call was detected faintly. Individual noctule and serotine bats were recorded commuting past the site throughout the survey, presumably using the Centurion Way as a corridor.

Four common pipistrelle bats and one brown long-eared bat emerged from the roof of the neighbouring property immediately north of the site.

No bats were recorded to have emerged from the property at 37 Plainwood Close during this survey.</td></tr>
</table>

<table>
<tr><th>Survey Date</th><th>Emergence/Re-entry Results</th><th>Bat activity</th></tr>
<tr><td>18/09/2023</td><td>One common pipistrelle was recorded emerging from the dwelling.</td><td>
<table>
<tr><th>Species</th><th>First pass</th><th>Last pass</th></tr>
<tr><td>Soprano pipistrelle</td><td>19:34</td><td>20:29</td></tr>
<tr><td>Brown long-eared</td><td>19:36</td><td>20:20</td></tr>
<tr><td>Common pipistrelle</td><td>19:40</td><td>20:41</td></tr>
<tr><td>Brandt’s</td><td>19:41</td><td>-</td></tr>
<tr><td>Noctule</td><td>19:43</td><td>20:17</td></tr>
<tr><td>Serotine</td><td>20:31</td><td>-</td></tr>
</table>
Activity overview:
Moderate levels of bat activity were seen and heard by all surveyors. One common pipistrelle emerged from the west facing elevation of the property at 37 Plainwood Close from around eaves height above a window (Photo 6). The emergence location is also shown on Appendix 1: Bat Survey Results Plan.

One brown long-eared bat emerged from the roof of the neighbouring property immediately north of the site quite early on in the survey.

Individual noctules passed over the site throughout the survey. A serotine made one pass and a Brandt’s bat made one pass over the site. An individual barbastelle bat made two passes over the site.
</td></tr>
</table>

A maximum count of one common pipistrelle bats were recorded emerging from the main dwelling. The roof above the garage proposed with extension did not contain any bat roosts.

Taken together, the surveys made the following findings:

- The main building supports an occasional brown long-eared bat roost and a single common pipistrelle non-breeding roost.

4.3.3 Reptiles

The construction impact zone consists of buildings and hardstanding only which is of negligible value to reptiles. The areas of modified grassland and areas beneath introduced shrubs offer very low potential for individual reptiles such as slow worm. The site is considered to be of **site value** for reptiles.

4.3.4 Hedgehogs

The construction impact zone consists of buildings and hardstanding only which is of negligible value to hedgehogs. Hedgehogs mainly feed on invertebrates such as earthworms, earwigs and beetles. They thrive in a mosaic habitat of grassland, deadwood and hedges/trees. The modified grassland and ornamental shrubs have very low suitability to support foraging and commuting hedgehog. The site is considered to be of **site value** for hedgehogs.

4.3.5 Nesting birds

The ornamental shrubs and trees on the boundary of the site offer shelter and protection from predators and offer low suitability for nesting birds. There are no habitats within the proposed construction impact zone suitable to support nesting birds. The habitats suitable to support birds on site make up a very small percentage of suitable nesting habitat within the local landscape, therefore the site is considered to be of **site value** for nesting birds.

4.3.6 Invertebrates

The site offers a minor nectar resource for invertebrates. Due to the site's ornamental nature and small size, it is unlikely that notable species and assemblages rely on it. Overall, the site is assessed to be of **site value** for invertebrates.

4.3.7 Hazel dormice

Dormice may use nearby ancient woodland and species-rich hedgerows for nesting, foraging and commuting between habitats. No hedgerows are present on site and no ornamental shrubs are suitable to support dormice. Overall, the site is assessed to be of **negligible value** for dormice and they are not considered further in this report.

4.3.8 Badger

The site is subject to too much human disturbance and is therefore of negligible value for badger sett building opportunities, and the lawn outside of the construction zone is of very low value for foraging and commuting badger. Overall, the site is assessed to be of **negligible value** for badgers and they are not considered further in this report.

5. Impact Assessment, Mitigation and Enhancements

The proposed development has a responsibility to avoid and mitigate impacts upon protected species. Such measures are in line with the National Planning Policy Framework (NPPF) (2021) and within policy 49 of the Chichester District Local Plan.

> Policy 49 of the Chichester Local Plan states that: *"Planning permission will be granted for development where it can be demonstrated that:/… 1. the biodiversity value of the site is safeguarded; 2. Demonstrable harm to habitats or species which are protected or which are of importance to biodiversity is avoided or mitigated."*

5.1 Designated Sites

Potential Impacts

The potential for this development to have an impact upon local designated sites is considered highly unlikely given the intervening distances and small residential scale of the proposals. Dust, fumes and emissions from machinery and higher pollution levels due to construction traffic would be minimal and short-term if strict mitigation measures are followed. The proposed development will not result in an increase in accommodation or the local population.

Mitigation and Compensation

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 on adjacent habitats. The impacts are expected to be minimal and short term.

Mitigation

- All construction will be undertaken in accordance with best practice advice with regards to control of dust, noise and emissions.

- Any chemicals or fuel will be stored appropriately, fully sealed and kept on existing hard surfaces.

- Any ornamental planting lost or damaged during works will be replaced post-construction with species from the RHS 'Plants for Pollinators' lists.

Residual Impact

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

5.3 Species

5.3.1 Bats

Potential Impacts

In the absence of mitigation, the proposed works may result in the disturbance or loss of known non-breeding roosts for common pipistrelle and an occasional non-breeding roost for brown long-eared bats.

The main roof of the house and main loft void containing the common pipistrelle and brown long-eared bat roosts will not be affected by the proposals. Some short-term disturbance is inevitable such as vibrations and noise but otherwise the existing bat roosts will be structurally unaffected and not exposed, damaged or destroyed.

Method Statement of Works for Bats

The proposed works should be lawfully possible without an EPSL from Natural England if the following Method Statement of Works is followed. This will ensure that continuing ecological function for bats is retained within the site.

- All contractors and roofers working on site will be shown a copy of this report and this Method Statement of Works.

- All areas of roof that will be impacted by “destructive” works e.g. removal of roof tiles, soffit, fascia, brickwork etc, will have these features removed carefully by hand. The underside of each roof tile will be checked for any bats that may opportunistically be using the other parts of the building. This destructive work will take place between mid-March and early-November to avoid the winter hibernation season for bats.

- If a bat is found, a licenced bat ecologist will be contacted immediately to determine how to proceed. An EPSL would be applied for. This site is also eligible for the Bat Mitigation Class Licence (BMCL) or “low impact” licence which can be obtained by a qualified ecologist, usually within a matter of days.

- No new external lighting should be installed on site. Barbastelle, brown-long-eared and many Myotis species including Brandt’s actively avoid well-lit areas (Bat Conservation Trust and the Institute of Lighting Professionals, 2023). These species were recorded during the dusk bat surveys. Therefore, it is important that the potential for disturbance to these bats from Artificial Lighting At Night (ALAN) is considered.

If exterior lighting is to be installed on site, e.g. security lighting, 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, known bat roosts, vegetation, hedgerows, trees, and other key habitat features.
- Install lighting at the lowest possible height.
- 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 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.

- Lining – Breathable Roofing Membrane (BRM) such as *Tyvec*, along with other bitumen membranes that contain polypropylene filaments, e.g. type 5U, will not be used in the new extensions. Bats are easily caught in the fine fibres of BRMs as the outer membrane fluffs up like cotton wool entangling bat claws which is usually fatal. 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 and must be avoided (see gov.uk/bat-roosts for further advice and a list of approved bat safe treatments, if required).

Residual Impacts

Once mitigation has been taken into account, the development will result in a **neutral** effect on bats.

5.3.2 Nesting birds

Potential Impacts

The proposed works are not expected to have an impact on nesting birds unless any shrubs or other vegetation to accommodate the new extensions is being removed.

Mitigation for Birds

- Any clearance of garden shrubs or other dense vegetation will be undertaken outside of the nesting bird season which runs 1st March–31st August. If vegetation clearance is proposed within 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 alone 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 development is likely to result in a **neutral** impact on nesting birds.

5.3.3 Other species

Potential impacts

Other wildlife that may opportunistically use or cross the site could be injured during the construction phase in the absence of mitigation. The following measures will protect hedgehogs, slow worms and ubiquitous mammals like wood mice and voles (protected under the Mammals Act 2006) from harm.

Mitigation

- 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.

- The lawn immediately surrounding the construction zone shall continue to be kept cut to ensure small animals are not be sheltering within the construction zone. The wider grassland can remain long provided materials are not stored within this.

- Any construction materials must be stored on hard surfaces or on pallets to elevate them off the ground.

Residual Impacts

Once mitigation and enhancements have been taken into account, the residual impacts for other species will be **neutral.**

6. Ecological Enhancements

Development proposals are expected to demonstrate an overall positive impact on the natural environment as set out in local and national planning policies.

> Policy 49 of the Chichester Local Plan states that: "Planning permission will be granted for development where it can be demonstrated that:/…t*he proposal has incorporated features that enhance biodiversity as part of good design and sustainable development."*

The following ecological enhancements will be considered on this site in order 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.

- Pollinator-friendly flowers grown around the garden in beds, pots, or in hanging baskets will improve its ecological value greatly. Always try to choose organic, pesticide-free plants and seeds. Plants should be chosen from the RHS 'Plants for Pollinators' lists. The following list of low-maintenance flowering plants has been recommended by the ecologist for 37 Plainwood Close which receives a mix of sun and shade:

    - Borage *Borago officinalis*
    - Bugle *Ajuga reptans*
    - Catmint *Nepeta spp.*
    - Chives *Allium schoenoprasum*
    - Comfrey *Symphytum officinale*
    - Cranesbill geranium *Geranium spp*.
    - English *lavender Lavandula angustifolia*
    - Flowering currant *Ribes sanguineum*
    - Greater knapweed *Centaurea scabiosa*
    - Nasturtium *Tropaeolum majus*
    - Rosemary *Rosmarinus officinalis*
    - Sunflower *Helianthus annuus*
    - Thyme *Thymus spp.*
    - Winter-flowering heather *Erica carnea*

- If any new trees are planted on site, they should comprise species native to England, and be 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 garden lawn or the paddock field could be enhanced by sowing wildflowers or laying wildflower turf. Creating a mosaic of grassland habitat can be aesthetically pleasing, as shown in Figure 4 below:

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

6.2 Enhancement for Protected Species

- One bat roosting feature is recommended to enhance the site for bats. An integrated bat box, external* bat box or tile with a suitable gap (or readymade 'bat tile^') could be incorporated into the designs. Erected 3-5m above ground, facing between southwest and southeast, receiving several hours of sunlight during the day. No artificial lighting will shine on these new bat roosting opportunities. See Figures 5-8 for examples.

***WoodStone/Woodcrete boxes are recommended rather than timber boxes. They safeguard against attacks from predators and the material insulates the box which creates a more consistent internal temperature.*
^Bat tiles must not be used alongside Breathable Roofing Membranes.

Figure 5 – Chillon Woodstone Bat Box

Figure 6 - Beaumaris Woodstone Bat Box

Figure 7 – Tudor Bat Access Tile

Figure 8a (left) and 8b (right) – BirdBrickHouses Integrated Bat Boxes
(8b suitable to install behind timber cladding)

- One bird nesting feature is recommended to enhance the site for birds. An integrated bird box or external WoodStone/Woodcrete bird box could be incorporated into the designs. Erected at eaves height, facing between northwest and northeast, avoiding direct sunlight and prevailing winds. Alternatively, an open-fronted external bird box could be installed, sheltered within a shrub. See Figures 9-12 for examples.

Figure 9 – Vivara Pro Woodstone Standard External Bird Box

Figure 10 – Vivara Pro Woodstone Open-Fronted External Bird Box

Figure 11a (left) and 11b (right) – BirdBrickHouses Integrated Bird Boxes (11b suitable to install behind timber cladding)

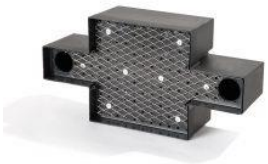


Figure 12 – Vivara Pro Woodstone House Sparrow Terrace External Bird Box

- A 13x13cm hole in the garden fence or gate could be installed. This size gap is sufficient for hedgehogs to pass through and is too small for most dogs/cats. A small solid wooden hedgehog house (Figure 13) could also be installed in a quiet corner of the garden beneath a shrub. Information for providing a hedgehog friendly garden can be found online here.

Figure 13 – Solid Wooden Hedgehog Box

- A small log pile could be created in a quiet corner, 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 invertebrates including stag beetle larvae.

7. Conclusion

Imprint Ecology Limited was commissioned by Mr Downham to undertake an Ecological Impact Assessment at 37 Plainwood Close in Chichester, West Sussex.

A preliminary bat roost assessment in July 2023 established the presence of a non-breeding occasional day roost for brown long-eared bats confirmed by DNA analysis. Two further dusk bat surveys were undertaken in August and September 2023. The survey effort confirmed the additional presence of a non-breeding day roost for a single common pipistrelle bat.

A Method Statement of Works has been devised to allow the proposed development to proceed lawfully without an EPSL from Natural England. This will ensure that continuing ecological function for bats is retained within the site. The main roof and loft void supporting the bat roosts are unaffected by the current proposals.

This report presents detailed mitigation to protect roosting bats, foraging and commuting bats, nesting birds and other species like hedgehogs and slow worms. It will ensure that through compensation and enhancement measures the development increases the amount of habitat available for biodiversity in line with the NPPF and local planning policies.

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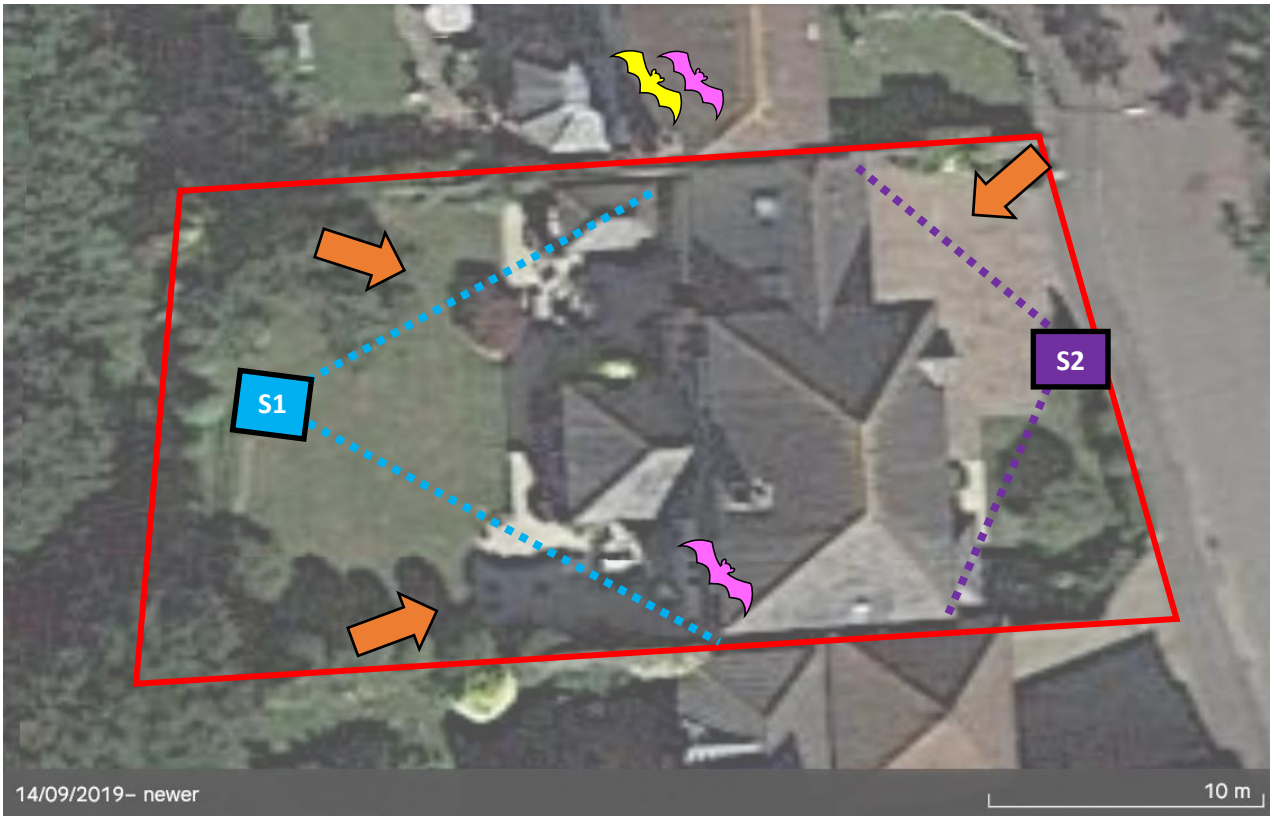
Appendix 1: Bat Survey Results Plan

Project: 37 Plainwood Close	
August and September 2023	Author: Emily Sabin
Client: Mr Downham	Scale: Approximate
Imprint Ecology	

Legend

- S1 — Surveyor positions
- Sight lines
- Infrared camera positions on 24/08/23
- Common pipistrelle bat emergence location
- Brown long-eared bat emergence location
- Site boundary



Appendix 2: Planning Policy

National 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*."

Local Planning Policy

The site is within the Chichester District; the proposals should be assessed against the Chichester District Local Plan – Key Policies 2014-2029. Policy 49 covers Biodiversity; the following criteria must be met for planning applications to be supported:

1. *The biodiversity value of the site is safeguarded;*
2. *Demonstrable harm to habitats or species which are protected or which are of importance to biodiversity is avoided or mitigated;*
3. *The proposal has incorporated features that enhance biodiversity as part of good design and sustainable development;*
4. *The proposal protects, manages and enhances the District's network of ecology, biodiversity and geological sites, including the international, national and local designated sites (statutory and non-statutory), priority habitats, wildlife corridors and stepping stones that connect them;*
5. *Any individual or cumulative adverse impacts on sites are avoided;*
6. *The benefits of development outweigh any adverse impact on the biodiversity on the site. Exceptions will only be made where no reasonable alternatives are available; and planning conditions and/or planning obligations may be imposed to mitigate or compensate for the harmful effects of the development.*

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.

Amphibians

All life stages of great crested newts are fully protected under UK and EU law, making it an offence to kill, injure, capture, disturb or sell them, or to damage or destroy their habitats. More specifically, this species is protected under the Wildlife and Countryside Act, 1981 (as amended) and under the Conservation of Habitats and Species Regulations 2017. In addition, great crested newt is listed as a Species of Principal Importance under the provisions of the NERC Act 2006.

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: DNA analysis results:

Ecotype Genetics

Results

Sample ID: EG-1172-1

Sample information:

Sample type: Faecal **Species group:** Bats

Suspected species: **Site Location:** SU8556006992

Comments: 37 Plainwood Close. Scattered bat droppings in loft void.

Laboratory information:

DNA Extraction Code: EG-2023-1309 **Identification method:** qPCR

Analysis Procedure Notes:

All UK bat species tested for - only a single species detected in this sample.

Laboratory Comments:

None

Species Identified:

Species 1: Plecotus auritus (Brown long-eared bat) **qPCR Ct Value:** 22