

The Old Vicarage, Heytesbury

Ecological Assessment

On behalf of Francise Tieman

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Contents

1 Executive Summary 2

2 Introduction 4

3 Methodology..... 7

4 Results 12

5 Impact Assessment and Recommendations 24

References 29

Appendices 30

1 Executive Summary

Avondale Ecology completed a Preliminary Ecological Appraisal including desk study, habitat survey and protected species audit in June 2025, for the construction of three detached dwellings and subdivision of the main house with associated access at The Old Vicarage, Heytesbury.

The site comprises a large house and garage and vegetated garden including ornamental hedge and scattered trees and shrubs. The house has high potential to support roosting bats; the garage has negligible bat roost potential. Three bat emergence surveys were completed throughout the summer months and non-maternity roosts for individual brown long-eared and *Myotis* (likely natterers) bats and a peak count of seven common pipistrelle bats were recorded. Although repairs will be completed, the external structure and loft space will not be significantly altered. Seven reptile presence/absence survey visits were also completed, with a low population of common lizard recorded. Nesting birds, hedgehog and common toad are also likely to use habitats within the site. A hedgehog was seen during two of the bat emergence surveys. It is unlikely that great crested newt or hazel dormouse will be present on site.

The site achieves a baseline of 2.95 habitat units and 0.05 hedgerow units under the Defra Biodiversity Net Gain metric. The proposals for soft landscaping include private vegetated gardens, five retained trees and 16 planted small trees within shared areas, species-rich flowering lawn in shared gardens around the subdivided house and shade tolerant wildflower grassland under the retained trees in the north-west corner. A 25m long native hedgerow will also be planted along the southern boundary of the shared gardens. This will result in 1.23 habitat units (i.e. a 58.34% net loss) and 0.14 hedgerow units (i.e. a 157.89% net gain). The deficit of 2.02 habitat units will need to be purchased from a habitat bank.

Avoidance/Mitigation Measures

- Drainage design to inform nutrient neutrality requirements in relation to the River Avon SAC.
- Minimise tree removal, particularly of mature trees of high ecological value.
- Protection measures for retained trees and hedgerows in accordance with BS5837.
- Natural England bat mitigation licence to be in place before repairs or alterations to the hanging tiles on the exterior of the main house or any works to roof coverings, soffits, gable ends or within loft spaces commence.
- Sensitive lighting design.
- Clearance of dense vegetation (trees, scrub and shrubs) to take place between September and February, outside nesting bird season or immediately after a pre-commencement check by a suitably qualified ecologist. Any active nests to be retained and protected, along with an appropriate buffer zone until chicks have fledged.
- Phased clearance of existing habitats (scrub and grassland) under ecological supervision, with protected and notable species found moved to safety.
- Works to cease immediately and an ecologist contacted for advice if any protected species such as bats, nesting birds, hazel dormouse, great crested newt or reptiles are unexpectedly found or

suspected to be present when an ecologist is not present on site. Hedgehog and common toad to be moved to safety into nearby undisturbed habitats if found.

Enhancement Measures

- Native and beneficial planting in addition to BNG measures.
- Bat and bird boxes to be incorporated on the new buildings.
- Hedgehog connectivity measures to be included in solid boundary features.
- Hedgehog box to be installed in the north-east corner.
- 2 x habitat piles to be created in the north-eastern and north-west corners within shared spaces.

Please be aware that a survey of this nature can only provide a snapshot of the site's ecological importance. Please note that the survey results and any recommendations contained within this report will remain valid for two years following the date of survey.

2 Introduction

2.1 Introduction and Aims

Avondale Ecology was commissioned by Francise Tieman to undertake a Preliminary Ecological Appraisal (PEA) for The Old Vicarage, Little London, Heytesbury, BA12 0ES (central Ordnance Survey grid reference ST92324270). The site location and latest plan of the proposed development are shown in Figure 1. The proposals comprise the construction of three detached dwellings and conversion of the main house into residential apartments.

Figure 1 Proposed Site Plan



2.2 Objectives

The survey included the following objectives:

1. To identify any designated nature conservation sites on or in the vicinity of the site;
2. To record any habitats of ecological importance;
3. To identify whether there is any evidence of, or potential for, protected or notable species to be present;

4. To detail potential requirements for further surveys, and to complete any surveys necessary to inform a planning application;
5. To make recommendations for avoidance, mitigation, compensation measures and working practices to meet legislative and best practice requirements;
6. To identify ecological enhancement opportunities; and
7. To complete a Biodiversity Net Gain Assessment compliant with Defra methodology and the Environment Act 2021.

2.3 Legislation

There are several different Acts of legislation and regulations which refer to the protection of wildlife of relevance to the site. The regulations of direct relevance to the site are summarised below.

There are 18 species of bats in the UK, all of which are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). They are also included in Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). The Wildlife and Countryside Act, the “Habitats Regulations” and the CRow Act 2000 together make it an offence, among other things, to recklessly, intentionally or deliberately:

- Disturb roosting bats or obstruct access to their roosts;
- Disturb a significant number of bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts;
- Kill, injure or capture (or take) bats.

A bat roost is defined as “any structure or place (including trees) which any bat uses for shelter or protection”. Because bats tend to re-use the same roosts, legal opinion is that the roost is protected whether or not the bat(s) are present at the time. Hazel dormouse *Muscardinus avellanarius* and their habitats and great crested newt *Triturus cristatus* and their habitats, including breeding ponds and terrestrial habitats, are similarly protected.

Statutory protection is given to nesting birds in the UK under the Wildlife and Countryside Act (WCA) 1981 (as amended). It is an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition, it is an offence to intentionally or recklessly disturb species listed on Schedule 1 of the Act while they are nest building or at/ near a nest with eggs or young, or to disturb the dependent young of such a bird.

Reptiles are protected from deliberate killing or injury under the Wildlife and Countryside Act 1981 (as amended).

Badgers are protected from harm and disturbance and their setts are protected from damage and obstruction of access under the Protection of Badgers Act 1992.

Hedgehogs *Erinaceus europaeus* are not protected by law but are afforded due consideration in the planning process as a result of being Species of Principal Importance (priority species) on

Section 41 of NERC Act 2006. Other Species of Conservation Concern which have also experienced significant recent declines are also listed on Section 41. This includes common toad *Bufo bufo*.

Habitats of Principal Importance (HPI) (formerly called 'priority habitat' under the UK BAP process) are afforded consideration in the planning process through Section 40 and 41 of the NERC Act 2006, although they are not given statutory protection in their own right.

It is an offence to deliberately cause the spread in the wild of non-native, invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

Under the Environment Act 2021, all qualifying sites must achieve at least 10% biodiversity net gain as calculated through habitat, linear or river units in the Defra metric spreadsheet. More information is available at [Biodiversity net gain - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/biodiversity-net-gain). It is understood that the site is exempt from Biodiversity Net Gain requirements as it will be for a single self-build development on a site which is under 0.5 hectares.

Local planning policy also incorporates biodiversity considerations – including Wiltshire Local Plan Core Policy 50.

This is a brief summary of the legislation and is not to be regarded as a definitive legal opinion. When dealing with individual cases, the client is advised to consult the full texts of the relevant legislation and obtain further legal advice.

3 Methodology

3.1 Desk Study

A Wiltshire and Swindon Biological Records Centre (WSBRC) data search was submitted for records of protected and notable species and locally designated sites within 1km. Internationally and nationally designated sites up to 1km from the site and Special Areas of Conservation (SAC) designated for bat species up to 10km from the site were identified using MAGIC maps¹. MAGIC was reviewed for Natural England mitigation licence applications and eDNA records or survey licence return records for great crested newt (GCN) *Triturus cristatus* within 1km. Natural England's GCN Risk Zones Map for Wiltshire were reviewed². Recent planning applications within the immediate area were reviewed using Wiltshire Council's online planning portal for information of relevance to habitats and protected species. Aerial photographs and Ordnance Survey maps were reviewed to assess the site in context of surrounding habitats.

3.2 Extended Phase 1 Habitat Survey/UK Habitat Survey Classification

An Extended Phase 1 Habitat survey i.e. habitat survey and protected species audit was completed in accordance with best practice guidance including *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2018), *Guidelines for Ecological Impact Assessment in the UK and Ireland* (CIEEM, 2024) and Handbook for Phase 1 Habitat Survey (JNCC, 2010) on 2nd June 2025. Vegetation type, structure and dominant species were noted. Types of habitat present were also assessed using UK Habitat Code classifications (V2, 2023). The presence of any invasive species subject to legal controls was recorded. The habitats were also assessed for their potential, and any evidence, to support legally protected or otherwise notable flora and fauna such as roosting bats, badger, reptiles and nesting birds. Botanical nomenclature in this report follows that laid out by Stace (2010). The survey was completed by Sarah Dale MCIEEM, an experienced ecologist with 19 years' professional practice, accompanied by Gillian Challis, an assistant ecologist with three years' experience.

3.3 Preliminary Bat Roost Assessment

An external and internal building inspection of the main house and garage was undertaken in accordance with *Bat Surveys for Professional Ecologists - Good Practice Guidelines* 4th Edition (Collins Ed., 2023), *Bat Mitigation Guidelines* (Reason and Wray, 2023) and the *Bat Workers Manual* (Mitchell-Jones and McLeish, 2004). The survey was completed on 2nd June 2025 by Sarah Dale (MCIEEM and Natural England bat survey Class 2 licence holder 2018-36720-CLS-CLS), accompanied by Gillian Challis. All features were assessed, including internal lofts and voids and

¹ www.magic.gov.uk

² [GCN Risk Zones \(Swindon and Wiltshire\)](#)

external features, using a 4m extendable ladder, close-focus binoculars and high-powered torch for evidence and potential for use by roosting bats, and potential bat access into the buildings. Signs of bats include live animals, corpses, noises, droppings, urine staining, feeding remains (e.g. moth and butterfly wings) and scratches. Where present, evidence, bat access and potential roost features (PRFs) were recorded and mapped. Any evidence of nesting birds was also recorded. The buildings were categorised using the criteria in Table 1.

Table 1: Bat Roost Potential Categories for Buildings
(Category descriptions drawn from Collins, 2023 and Mitchell-Jones, 2004)

Roost Potential	Description
Confirmed	Confirmed signs of bat presence/ occupation (droppings, oily staining around entry points, insect remains, odour, scratching) or actual bat presence (live or dead bats).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions (for example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance) and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions (for example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance) and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions (for example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance) and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site but could be used by individual hibernating bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion. (Note: Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute).

A ground level tree inspection was also undertaken of trees within the site, completed in accordance with *Bat Surveys for Professional Ecologists - Good Practice Guidelines*. 4th Edition (Collins, 2023), *Bat Mitigation Guidelines* (English Nature, 2004 and Reason and Wray, 2023) and *The Bat Workers Manual* (Mitchell-Jones and McLeish, 2004). Any features of the tree which may provide roosting opportunities were recorded. The assessment noted any features on trees such as decay pockets and cavities, crevices around pruning wounds, cracked or flaking bark or woodpecker holes. Evidence of roosting bats such as live/dead bats, droppings, staining/smooth surfaces around roost

entrances, audible noise and feeding remains was also assessed. All trees within the site and within 10m were assessed and categorised in accordance with the criteria in Table 2.

Table 2: Bat Roost Potential Categories for Trees

(Category descriptions drawn from Collins, 2023)

Roost Potential	Description
NONE	Either no PRFs in the tree or highly unlikely to be any
FAR	Further assessment required to establish if PRFs are present in the tree
PRF-I	Suitable for individual or very small numbers of bats due to the type of feature or nature of surrounding habitats
PRF-M	Suitable for multiple bats and possibly a maternity roost.

3.4 Bat Emergence Surveys

Three dusk bat emergence surveys were undertaken spaced between July and September 2025. Weather conditions are detailed in Table 3 and constraints are detailed in Section 3.7. Four surveyors were positioned around the building for each survey so all potential bat features could be observed. Two Axion Pulsar XG35 cameras were also used focusing on features on the north and east elevations, which had the most likely bat roost features for use. The surveyors were:

- Sarah Dale (as above);
- Gillian Challis (as above);
- Georgie Hayworth, with 12 years of bat survey experience;
- Jenny Poole, who has one season of bat survey experience; and
- Kai Sweet, who has one season of bat survey experience.

The dusk surveys started 10-15 minutes before sunset and continued until at least 90 minutes after sunset in accordance with *Bat Surveys for Professional Ecologists - Good Practice Guidelines* 4th Ed. (Collins Editor, 2023). The species and behaviour of bats seen or heard by the surveyor were recorded. Echometer Touch, Duet and Batlogger detectors were used, with all bat calls recorded (all surveyors had at least an Echometer Touch to record). Sonograms were analysed to confirm species identification. Video recordings were also analysed. Surveyor and camera locations are shown in Figure 3.

Table 2 Survey Information and Weather Conditions

Date	Weather Conditions					Time Start	Time End	Sunset/ Sunrise
	Temp start	Temp End	Cloud cover (%)	Wind (Beaufort scale)	Rain			
08/07/25	19°C	17°C	20	1B	No recent rain	21:10	22:55	21:22
11/08/25	19°C	16°C	100	1B	Rain to 21:30, light drizzle from 21:48	20:20	22:10	20:37
04/09/25	14°C	14°C	0-15	1-2B	No recent rain	19:35	21:17	19:47

3.5 Reptile Presence/Absence Survey

Seven survey visits were completed during August and September 2025 to assess whether reptiles are present or likely absent at the site in accordance with best practice guidance including the *Herpetofauna Workers Manual 2nd Edition* (Gibson and Gent, 2003). A total of 24 artificial refugia (0.5m x 0.5m squares of roofing felt) were installed on 8th July 2025 in suitable habitat, focused on the areas with grassland and scrub edges and avoiding very dense areas of shrubs and scrub. The density is more than sufficient to meet best practice guidance. The locations of the refugia are shown in Figure 4. The refugia were left to 'bed in' for at least two weeks before surveys commenced. The survey visits were completed in suitable weather conditions; 12-20°C, no recent rain and no strong winds (less than 3 Beaufort). The site was visited at different times of day. Any reptiles found were recorded including species, life stage and sex. Other species found such as amphibians and small mammals would also have been recorded. Details of the survey dates and weather conditions are shown in Table 4.

Table 4 Survey Information

Visit	Date	Start time	Temp (°C)	Conditions	Rainfall	Wind - Beaufort
1	11/8/25	19:30	17	Cloudy, 80% cloud cover	None, rain due later	1
2	22/8/25	10:30	18	Intermittent sunshine. 40% cloud cover.	None	1-2
3	28/8/25	9:30	17	Intermittent sunshine/showers. 60% cloud cover	Dry during survey. After overnight rain	1
4	9/9/25	11:00	18	Intermittent sunshine. 50% cloud cover.	None	1
5	11/9/25	11:00	17	Intermittent sunshine. 50% cloud cover.	After overnight rain	2-3
6	15/9/25	11:00	17	Sunny. 60% CC	Immediately after a rain shower	1
7	19/9/25	11:00	19	Sunny, 20% CC	None	1

3.6 Biodiversity Net Gain

A Biodiversity Net Gain assessment was completed following statutory Defra methodology as set out in *The Statutory Biodiversity Metric – User Guide* (Defra, July 2025). Habitats were assessed using *UK Habitat Classification* methodology (as above). Habitat areas were mapped and then measured using qGIS. Shapefiles are available on request. Standard Defra condition assessments were completed for relevant habitats and were used to inform target condition. Conservative assumptions were made to provide a realistic estimation of likely target habitat quality for newly created habitats, and to minimise challenges with long-term management and delivery.

3.7 Constraints

Environmental record centre data is not strategically or systematically sourced. It can be useful to indicate likely presence, but should not be used as a confirmation of absence.

The survey was completed at an optimum time for botanical identification, and all areas of the site were accessible.

The main loft space was accessible and inspected in its entirety. The smaller loft space could not be accessed for inspection due to the presence of an active wasps nests but was assessed for suitability for bats and any obvious evidence from the hatch. Bat surveys are only a sample of evidence and actively which can vary widely across and between years. Some species such as long-eared and horseshoe bats can be difficult to record on bat detecting equipment due to directionality and volume of calls. The weather during the second survey was sub-optimal for bats. As bats were recorded emerging, and similar patterns of behaviour were recorded to the other surveys, the survey results were considered valid and the survey was not repeated. Due to the size of the building, two night vision aids (NVAs) were not sufficient to cover all elevations of the building (which would have required 10+ NVAs). The NVAs were used for the most high-risk features, where visibility was the most challenging, such as in the shadow under overhanging trees and soffits on the northern gable end. NVAs were located as far as possible from the building to provide the maximum field of vision possible. Surveyors were located so that all elevations were observed.

Reptile surveys were completed in optimum weather conditions, at a suitable time of year. Usually, refugia are left to bed in for two weeks, but one week was considered sufficient in this instance, to ensure that valid surveys could be completed at a suitable time of year.

Wildlife use habitats in a dynamic manner and use may change from year to year or between different seasons. Wildlife can also colonise new areas, and surveys only provide a snapshot of use.

qGIS has been used to estimate the areas for Biodiversity Net Gain. As this is based on translation of a redline boundary and site layout plan into a georeferenced format, this is a best estimate of areas.

4 Results

4.1 Desk Study

4.1.1. Designated Sites

Scratchbury and Cotley Hills Site of Special Scientific Interest (SSSI) lies 245m north. The SSSI is designated for unimproved chalk grassland, supporting notable plants and invertebrate species, particularly Lepidoptera (butterflies). The River Avon Special Area of Conservation (SAC) and SSSI lies 180m south. The River is designated for riparian and wetland habitats, and associated notable plants, invertebrate and fish species. There are four areas which require nutrient neutrality measures within Wiltshire including the Hampshire Avon. Unfortunately, Wiltshire Council's interactive map showing catchments where this applies was unavailable at the time of this assessment. Based on non-interactive maps such as within [TIN208 Edition 3 River Avon SAC - Catchment Map June 2024.pdf](#), the site appears to fall within the catchment. Depending on the drainage proposals, and capacity of local foul drainage provision, nutrient neutrality measures may apply. The scheme does not appear to meet the threshold for consultation with Natural England during the planning process under their SSSI Impact Risk Zone criteria.

LOCAL WILDLIFE SITES TO BE ADVISED BY LRC RETURN.

There are various priority habitats/Habitats of Principal Importance within 500m including lowland mixed deciduous woodland 100m north, lowland calcareous grassland 245m north and coastal and floodplain grazing marsh 250m south. There is existing development and roads between all of these habitats and the site.

4.1.2 Protected and Notable Species Records

LRC results to advise.

There is a 2021 Natural England hazel dormouse *Muscardinus avellarius* mitigation licence record from 710m north-west. There are no other Natural England mitigation licence records from within 1km.

There are no great crested newt records shown on MAGIC mapping within 1km. There are no ponds within 250m shown on Ordnance Survey mapping, although unmapped garden ponds are likely to be present. The site falls within a Green i.e. low risk Zone on Natural England's GCN District Licence mapping for Wiltshire.

There are swift *Apus apus* records within Heytesbury³ for screaming parties as shown on the RSPB Swift Mapper.

³ RSPB Swiftmapper: <https://www.swiftmapper.org.uk/>

4.1.3 Additional Information

There are no planning applications with ecological information from the postcode area within the past decade. Most of the recent applications are for tree works within a Conservation Area, or for single storey/small-scale extensions.

4.2 Site Description

The site comprises a large detached two storey property, with surrounding mature gardens and an attached single-storey garage. There are ornamental and native shrubs and small areas of scrub, numerous scattered mature trees and an ornamental beech *Fagus sylvatica* hedgerow. The site is totally surrounded by similar residential properties within the village of Heytesbury. There is open countryside 100m to the north, and the River Avon lies 250m to the south of the village.

4.3 Habitats

Figure 2 shows the pre-development habitat map within the redline boundary. Photographs of the site are provided in Appendix A. Habitats found within the site boundary, and adjacent to the site boundary are described below.

4.3.1 Vegetated Garden with Scattered Scrub and Trees (g4, 10, 32)

The majority of the site comprises vegetated garden. The garden is mature with a range of management and mowing regimes. The lawn immediately to the south of the main house is regularly mown, and had a sward of less than 3cm at the time of the survey. Elsewhere, particularly towards the western boundary, the grassland is less frequently managed, and is starting to form tussocks with a sward of up to 100cm in height.

Grasses are dominant including false oat grass *Arrhenatherum elatius*, perennial ryegrass *Lolium perenne*, red fescue *Festuca rubra*, Yorkshire fog *Holcus lanatus* and meadowgrass *Poa* species. Herbaceous and ruderal species include hedge bindweed *Calystegia sepium*, dock *Rumex* sp., creeping buttercup *Ranunculus repens*, germander speedwell *Veronica chamaedrys*, dandelion *Taraxacum* agg., broadleaved willowherb *Epilobium montanum*, mullein *Verbascum* sp., comfrey *Symphytum officinale*, hedge woundwort *Stachys vulgaris*, wild strawberry *Fragaria vesca*, wood avens *Geum urbanum*, catsear *Hypochaeris* species, majoram *Origanum majorana*, common toadflax *Linaria vulgaris*, ground elder *Aegopodium podagraria*, primrose *Primula vulgaris* and cowslip *Primula veris* as well as scattered bramble *Rubus fruticosus* agg. and common nettle *Urtica dioica*. There is also occasional oxeye daisy *Leucanthemum vulgare* within the lawn. This is a broader range of species than would be expected in a species-poor, regularly managed lawn. A few of the species are present within unimproved calcareous or neutral grasslands (e.g. wild strawberry, oxeye daisy and mullein), but these can also persist in lawns or regularly/more intensively managed grasslands, and di

not occur widely within the site. There was also Spanish bluebell *Hyacinthoides hispanica* in places, which is a non-native invasive species, but is not subject to legal controls.

There are scattered ornamental shrubs in planting beds which have been infrequently managed, forming dense stands. Species include multiple roses *Rosa* sp., honeysuckle *Lonicera* sp., box *Buxus sempervirens*, ornamental and native dogwood *Cornus* sp. and *Cornus sanguinea*, hawthorn *Crataegus monogyna*, hazel *Corylus avellana* and elder *Sambucus nigra*. Bramble is also colonising in places.

There are 19 scattered trees within the garden with species including non-native species such as honey locust *Gleditsia triacanthos*, laurel *Laurus* sp., ginkgo *Ginkgo biloba*, Indian bean tree *Catalpa bignonioides* and *Sorbus* species as well as native species such as yew *Taxus baccata*, hazel, crab apple *Malus sylvestris*, beech, willow *Salix* sp. and elder. A detailed schedule of the trees is provided in the appended Defra metric condition sheets. A separate tree survey has also been completed. A plan showing the location of trees is shown in Appendix B. Only trees above 7.5cm diameter at breast height have been included for BNG purposes.

4.3.2 Buildings (u1b5)

There are two adjoining buildings within the site. The Old Vicarage is a two-storey building of brick construction, with an L-shaped pitched roof covered with clay peg tiles. There are clay hanging tiles on the exterior. There are multiple slipped and missing roof and hanging tiles. There are also gaps under the wooden soffits and barge boards, particularly on the gable ends. There are also occasional gaps under mortar in ridge tiles. It is understood to have been retiled approximately 15 years ago. The adjoining garage to the north is fully sealed and covered with a flat, felted roof.

4.3.3 Artificial, Unvegetated Unsealed Surface (u1c)

There is a small area of gravelled driveway and parking area around the site entrance in the north.

4.3.4 Ornamental Hedgerow (h2b)

There is a beech hedgerow of 3m high and 2m wide along the southern boundary. This is a monoculture just of beech and so, although this is a native species, has been classified as an ornamental hedgerow based on form and function.

Figure 2 Pre-Development Habitat Plan

4.4 Protected and Notable Species

4.4.1 Bat Species

The main house has multiple features suitable for roosting bats on the exterior, including slipped and missing hanging and roof tiles and gaps around wooden soffits. Internally, there are two loft spaces. The main loft is 12m x 4m and 2.8m high. It is open and uncluttered. The tiles are underlaid with bitumen felt and lath and plaster. There was potential access for bats under the eaves and around the wall plate on gable ends. Approximately 200 mid-sized bat droppings (typical of long-eared bats or similar) were recorded mostly under the central ridge beam. They were scattered rather than being piled in dense accumulations, suggesting that regular use by relatively low numbers of bats may be more likely. The droppings were a range of ages, with less than 50 fresh droppings. There were some smaller droppings, suggesting that pipistrelle bats could also be accessing the loft. The outcome of the DNA analysis of the droppings is included in Appendix C and confirmed that brown long-eared bats were present. The second loft space is approximately 6m x 4m, but could not be inspected fully

due to presence of an active wasp nest. No obvious evidence of roosting bats was seen within the loft.

Overall, the main house has high bat roost potential. There were no suitable bat roost features on the garage. The garage has negligible bat roost potential. There is a low risk of hibernating bats. Use of the loft or external features is unlikely, although long-eared bats do sometimes persist in loft spaces throughout winter. Access to cavity walls by hibernating bats cannot be ruled out.

None of the trees within the site had any obvious potential features for roosting bats.

Nearby properties are also likely to be used by roosting bats.

The site is likely to support invertebrate prey for a range of foraging bat species. The vegetated boundaries could also be used by dispersing bat species. The site is relatively dark at night, although there some localised light spill from street lights along the northern boundary. The site could support foraging and dispersing light-sensitive bat species.

Three bat emergence surveys were completed with the results as follows:

8 July 2025 (Sunset 21:22)

Overall, two pipistrelle bats were recorded emerging from the eastern gable and a *Myotis* (likely natterers) bat emerged from the western elevation.

The first bat pass was recorded at 21:39 (17 minutes after sunset), which was a common pipistrelle recorded commuting nearby (heard, not seen). At 21:41 (21 minutes after sunset), a common pipistrelle was seen emerging from under the soffit on the eastern gable end. At 21:44, a non-echolocating bat was recorded emerging from the eastern gable end. It had a flight pattern and size which would be consistent with a pipistrelle bat. There were regular common pipistrelle commuting passes, and occasional foraging passes. A *Myotis* bat (likely natterers) was also recorded emerging from the western gable end at 22:30. There were additional *Myotis* passes at 22:16, 22:25 and 22:32. There were also occasional soprano pipistrelle bat passes at 21:43, 21:44 and 21:57, and a Nathusius' pipistrelle pass at 22:34. Leisler's passes were recorded at 21:54 and 22:31 and noctule passes were recorded at 22:11 and 22:18. A serotine pass was also recorded at 22:37. There was also a long-eared bat pass at 22:38.

11 August 2025 (Sunset 20:37)

Overall, six common pipistrelle bats emerged in small numbers from the eastern gable, northern gable and western gable. A *Myotis* bat emerged from the southern elevation.

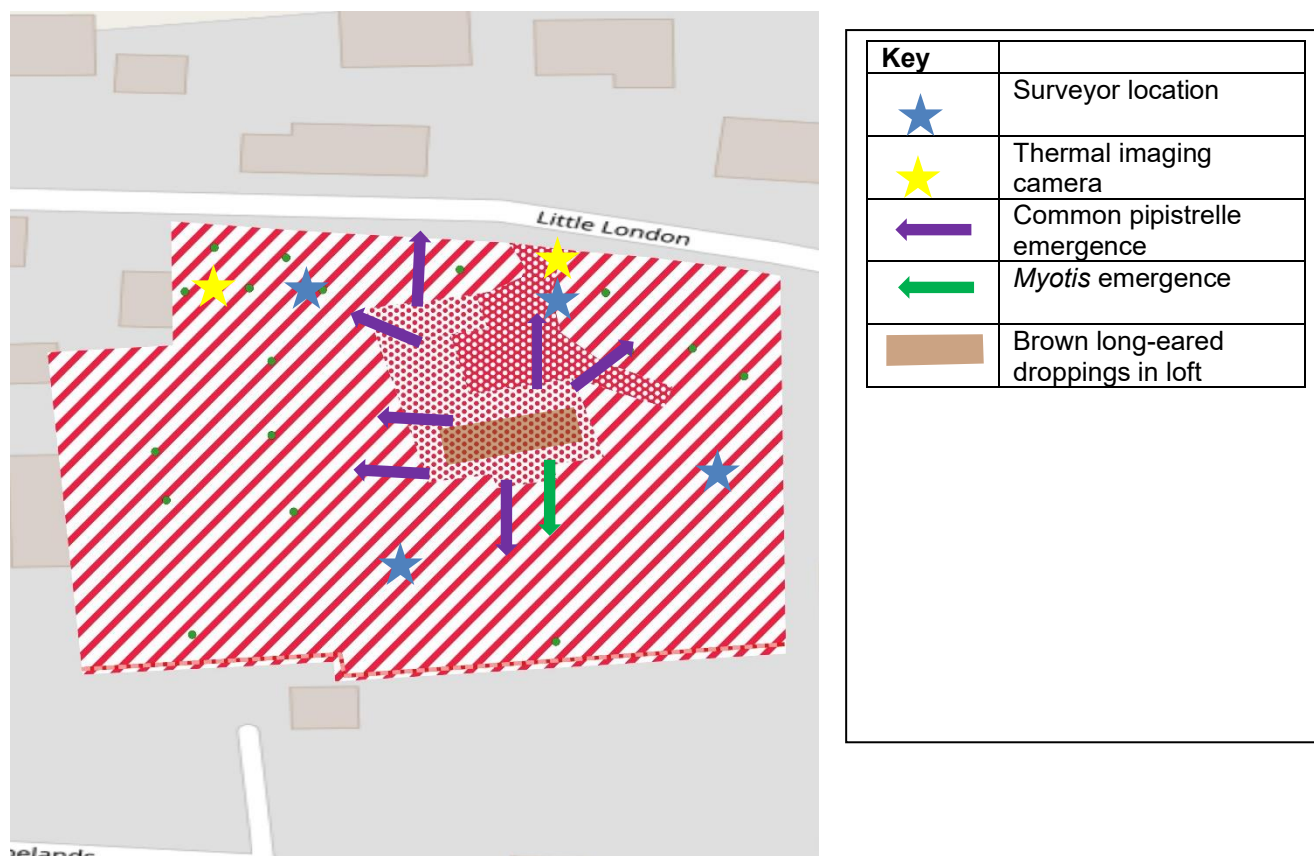
The first bat was a noctule recorded at the start of the survey before sunset at 20:25. There were further noctule bat passes between 20:35-21:58. At 20:29, before sunset, a non-echolocating small bat flying like a pipistrelle species emerged from the same location on the eastern gable end as in the first survey. A common pipistrelle bat was heard shortly after. At 20:45 (8 minutes after sunset), two common pipistrelle bats emerged from under the eaves on the northern gable end. At the same time,

two common pipistrelle bats emerged and one re-entered from under the eaves on the western gable end. A second pipistrelle bat emerged from the eastern gable end at the same location as the first pipistrelle bat at 20:50. At 20:47, a *Myotis* bat emerged from the lowest courses of tiles in the valley on the southern elevation. There were regular common pipistrelle passes and occasional soprano pipistrelle passes. There were also regular noctule commuting passes during the survey. *Myotis* passes were also recorded at 20:49, 20:50, 20:53, 21:02 and 21:23. There were also a serotine passes at 20:47, 21:01, 21:14 and 21:19. There were also long-eared passes to the west of the house at 21:52, 21:54 and 22:02.

4 September 2025 (Sunset 19:47)

Overall, seven common pipistrelle bats emerged from small or individual roosts on the south, west and north-east elevations. The first bat pass by a common pipistrelle was heard at 19:54. There were regular foraging and commuting common pipistrelle bats. At 19:53, a common pipistrelle bat emerged from near the valley on the western elevation. At 20:04, one common pipistrelle emerged from the southern gable end closest to the western corner. At 20:05, another common pipistrelle bat emerged from the central southern gable end. At 20:07, one common pipistrelle emerged from under roof tiles close to the north-west ridge on the western elevation. Two common pipistrelle bats emerged from the north-east elevation under hanging tiles at 20:10. At 20:12, one common pipistrelle emerged from the south-west gable end. There were also regular noctule bat commuting passes from 20:09 onwards. A serotine pass was also recorded at 20:24. There were also occasional soprano pipistrelle passes at 20:22, 21:10. A long-eared bat pass was also recorded at 21:05 to the south of the building, with several additional passes from 21:10-21:17 to the west. One *Myotis* pass was also recorded at 20:27.

Surveyor locations and bat survey results are shown in Figure 3. Overall, the main loft space appears to be used intermittently as a brown long-eared summer day roost for a small number/individual bats. Features under slipped or missing roof tiles, hanging tiles and soffit boxes on gables on the exterior of the building are used by non-maternity roosts of small numbers of pipistrelle bats. The bats are using the features dynamically – a peak count of seven common pipistrelle bats was recorded, with a total of seven different roosting locations across all three surveys. One *Myotis* (likely natterers) bat also emerged on two occasions from the valley on the southern elevation. This species may also use loft spaces. Limited light spill was recorded; the site is mainly dark at night.

Figure 3 Bat Survey Results and Surveyor Locations

4.4.2 Other Mammals

There were occasional mammal trails but no other evidence of use by badger. There was no evidence of any sett building or digging by badger within the site or immediate area.

Hazel dormouse has been recorded within 1km, but is very unlikely to occur within the site. The site does not have any native boundary hedgerows or connected extensive areas of shrubs or scrub. The closest area of woodland is 100m north, but this lies across the busy A36 road without direct connectivity to the site. The site is entirely surrounded by housing of a similar nature, with scattered shrubs and trees in gardens, but not connecting hedgerows as many adjacent houses have boundary walls. There is considered to be negligible potential for hazel dormouse to be present and impacted.

Individual hedgehogs were seen during the second and third bat emergence surveys, mostly emerging from shrub beds along the eastern boundary and foraging in the grassed areas.

4.4.3 Nesting Bird Species

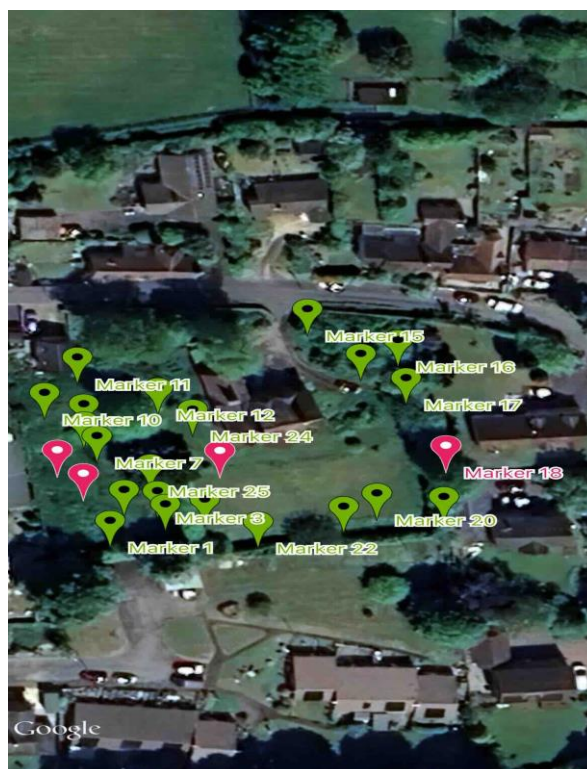
There was no evidence of use of buildings by nesting birds, although there is potential under the eaves and loose tiles. The first surveys commenced from June onwards, so species such as house sparrow, which often nest earlier in the spring, may already have raised broods. The dense shrubs and scattered trees within the garden are likely to be used by a range of garden bird species.

4.4.4 Reptile Species

The infrequently managed areas of grassland and scattered scrub are suitable for use by reptile. There are also scattered brash, log and compost piles throughout the year which may support sheltering reptiles, as well as other species such as hedgehog. The results of the seven reptile presence/absence survey visits are shown in Table 5, with locations where reptiles were found shown in red in Figure 4. A peak count of four common lizard *Zootoca vivipara* (two adults and two juveniles) was recorded. This is classed as a low population under best practice guidance (Froglife Advice Sheet 10, 1999). Common frog *Rana temporaria* was also found sheltering under reptile refugia.

Table 5 Reptile Survey Results

Visit	Date	Species found	Location	Habitat
3	9/9/25	1 x Female Common lizard	See map (Marker 18)	Long grass adjacent to garden hedge and lawn
4	11/9/25	2 x F Common lizard	See map (18 & 24)	Long grass adjacent to garden hedge and lawn Long grass bank adjacent to lawn.
5	15/9/25	2 x F and 2 x Juvenile Common lizard	See map (18, 24, 5 and 6)	Long grass adjacent to garden hedge and lawn Long grass bank adjacent to lawn. Long grass in unkempt part of garden
6	19/9/25	1 x J Common lizard	See map (24)	Long grass bank adjacent to lawn.

Figure 4 **Reptile Survey Findings** (image from Google Maps)

4.4.5 Amphibian Species

Great crested newt (GCN) typically occupies terrestrial habitats for at least nine months of the year. GCN are generally associated with breeding ponds located within 100m (Cresswell & Whitworth, 2004), although dispersal distances of 500–1000m have been recorded. Major roads, built environments and large watercourses can act as a dispersal barrier for the site. The site offers suitable terrestrial habitat including sheltering and foraging opportunities, such as scattered scrub, tussocky grassland and garden debris. Some construction sites can also offer potential refugia for GCN in the form of disturbed ground, excavations and stored waste and materials. However, given the lack of records and potential breeding ponds in the area, and no GCN being found under refugia during reptile surveys, the species is considered likely to be absent. Other amphibian species, including the notable species common toad, may be present. Common frog were recorded during the reptile surveys.

4.4.6 Invertebrates

The site is unlikely to support notable or rare invertebrate species due to its limited size and limited habitat types. A range of more widespread invertebrates are however likely to use the varied habitat structures within the site. The nearby SSSI supports a wide range of uncommon and notable butterfly species, but habitats within the site are unlikely to be of high value for these species.

4.4.7 Other Species

No other protected or notable species are likely to be present and impacted. No non-native invasive species subject to legal controls were recorded.

4.5 Biodiversity Net Gain

The site qualifies under the Environment Act 2021 for requirements for at least 10% measurable biodiversity net gain to be demonstrated. An assessment has been completed based on the mapped habitats within qGIS. The pre-development habitat areas are shown in Figure 2 and the BNG metric spreadsheet and condition sheets are appended. The BNG calculations will need to be revised if soft landscaping plans and specifications are revised.

The calculations are based on Drawing 2054-CMS-XX-XX-DR-A-PL01 Revision A *Proposed Site Plan* and areas of habitat as shown in Figure 2. As stated in Section 3.7, areas on the GIS plan are estimates. The site achieves a baseline of 2.95 habitat units and 0.05 hedgerow units.

To minimise the loss of units within the site the following is proposed:

- Retention of five trees and planting of 16 new small trees within shared garden and access areas. The small trees can be planted at any diameter, but will need to comprise species which are capable of growing to at least 7.5cm diameter at breast height over a 30 year period. Trees must be allowed to grow to maturity and criteria met for 'Moderate' condition (see appended condition sheet).
- Vegetated gardens to be created. Habitat creation including new tree planting within private gardens has not been included as this is not allowed under the current BNG metric guidance.
- Retention of the beech hedgerow along the southern boundary and planting of a new 25m long native hedgerow (comprising native shrub species such as hawthorn, blackthorn, field maple, etc.) along the southern boundary of the shared garden around the main house.
- Seeding the shared garden areas around the main house with flowering lawn (g3c – other neutral grassland) seeded with Emorsgate EL1 mixture (wildseed.co.uk) or [Flowering Lawn Meadow Mix | Meadow Grass & Wildflower Seed Mix – Meadowmania UK](#). To be seeded and managed as per manufacturer's instructions with 'Poor' condition realistically targeted. It can be regularly cut with arisings removed to at least 5cm above ground level, with mowing relaxed during May to July, especially around the margins to allow plants to seed and flower. Paths can be mown through the lawn in a more regular basis.
- The area of approximately 140m² under the retained trees in the north-west corner (outside of garden boundaries) to be seeded with a shade tolerant wildflower grassland mixture such as Emorsgate seeds EH1 mix. To be sown as per manufacturer's instructions and to

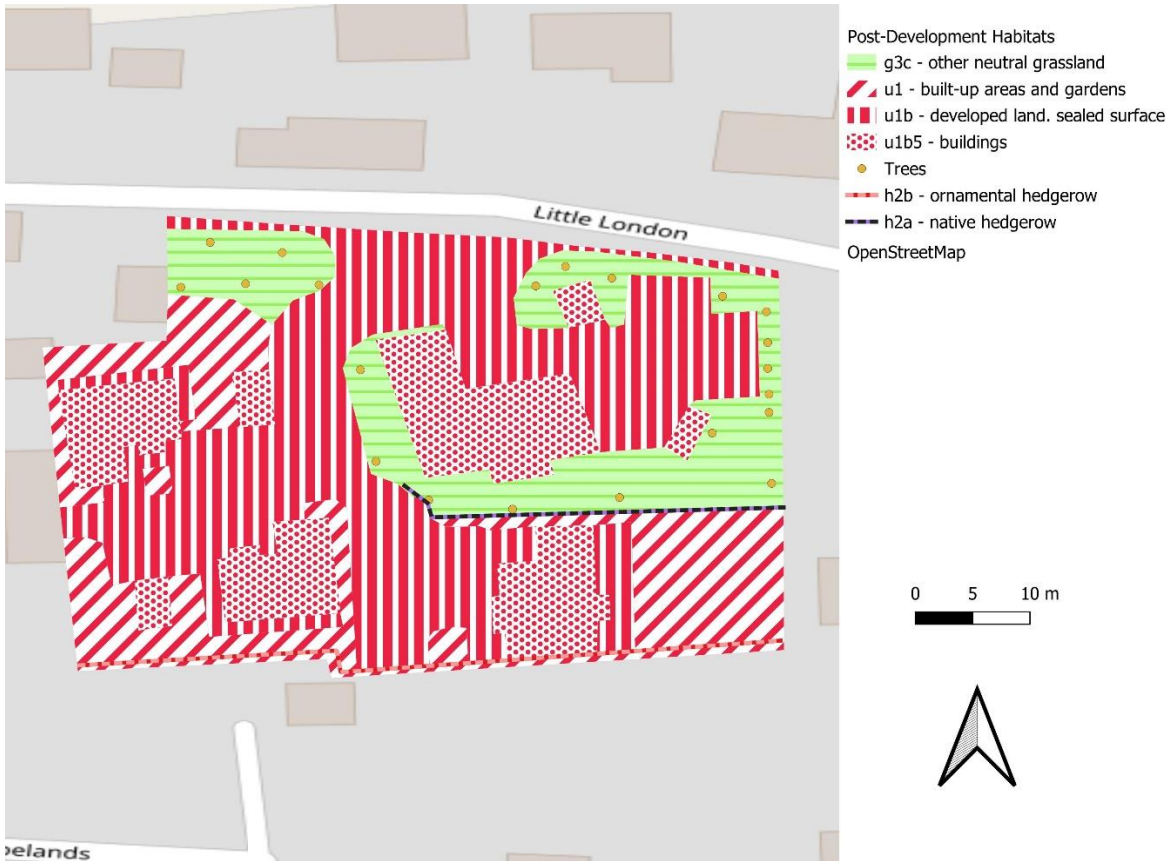
be left to flower between April to July inclusive. To be cut in late July/August annually and arisings removed. Up to two further cuts can be taken over autumn and winter with arisings removed.

Post-development habitats are shown in Figure 5. The soft landscaping proposals will achieve 1.23 habitat units (58.34% net loss) and 0.14 hedgerow units (157.89% net gain). Habitat creation measures will need to be managed in target condition and retained for at least a 30 year period. Defra metric condition sheets are appended to demonstrate how target condition will be met. A Management Plan is likely to be required to secure appropriate establishment and management specifications for BNG applicable habitat in shared areas on-site.

The deficit of 2.02 habitat units will need to be purchased from an off-site habitat bank. Full details will need to be evidenced with a pre-commencement Biodiversity Gain Plan submission. Options include:

- Contacting to the Local Planning Authority to see if they are aware of any local habitat banks or landowners who would be interested in selling units.
- [Hartham Park](#)
- [Greenshank Environmental](#)
- [Natural Capital](#) : They offer BNG as well as nutrient credits
- [Wild Heritage Biodiversity](#)
- [Belmont Estate](#)
- Large-scale habitat banks such as Environment Bank, Farm Farm or Wild Capital.
- Purchasing statutory credits – see [Statutory biodiversity credits - GOV.UK](#).

Figure 5 Post-Development Habitat Plan



5 Impacts and Recommendations

The impact assessment is based on Drawing 2054-CMS-XX-XX-DR-A-PL01 Revision A *Proposed Site Plan*. If the proposals change, the ecologist will need to be notified and a revised impact assessment completed.

5.1 Avoidance and Mitigation Measures

5.1.1 Designated Sites and Habitats

Impacts on nearby SSSIs as a result of the proposals are unlikely, given existing development and infrastructure between the site and designated sites for nature conservation. Requirements for nutrient neutrality in relation to the River Avon SAC will need to be informed by drainage proposals. Mitigation may be required if significant adverse impacts as a result of pollution/foul drainage cannot be ruled out through scheme design. A Habitats Regulations Assessment (HRA) may need to be completed. This is often done by the Local Planning Authority, but sometimes a shadow HRA is requested from applicants.

A total of eleven trees (as defined with the BNG metric) will be removed to facilitate proposals. This includes the mature yew tree. Retained trees must be protected during works, including the Root Protection Zones, in accordance with BS5837 *Trees in relation to design, demolition and construction*. The retained beech hedgerow must also be protected using barrier fencing during construction.

5.1.2 Bat Species

Although there will be no conversion of the loft space, with only upgrading of insulation between the rafters on the loft floor proposed, various repairs to the exterior of the roof and hanging tiles are likely to be completed. This will cause removal of or disturbance to up to seven roosting locations for common pipistrelle bats. Repairs to all suitable features may risk impacts on roosts, as bats appear to be using external features dynamically and shifting between exact roost locations depending on weather conditions. Repairs to the main roof may also risk removing access into the loft or associated crevices for one *Myotis* (likely natterers) bat and for a small number of long-eared bats. The works may also cause disturbance to these species. No maternity roosts are present, and overall, the impact of the works will be of low conservation significance.

Bat roosts, defined as a 'place of rest or shelter', are protected from destruction, modification or obstruction under the Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended). Bats are protected from deliberate or reckless killing or injury. Bats are also protected from disturbance whilst in a roost or significant disturbance to their ability to survive or reproduce. Roosts are protected even if bats are not present at the time of works.

A Natural England bat mitigation licence will be required before works proceed to the hanging tiles, roof, loft space or under eaves structures of the main house. The licence allows a derogation to the law under a methodology approved by Natural England. A mitigation licence is usually obtained after planning consent is granted, and can take up to six weeks to process and approve.

The method statement for the works will need to be agreed with Natural England but is likely to comprise the following:

- A Toolbox Talk to be provided by an ecologist to the contractors before works commence.
- No seasonal timing restriction given no anticipated risk to maternity or hibernation roosts. Any works to cavity walls during December to February will need to proceed with caution, with an ecologist contacted if hibernating bats are unexpected found.
- Two bat boxes such as a [Improved Cavity Bat Box](#) to be installed on retained trees within the north-west corner of the garden before works commence.
- Pre-works inspection by a licensed ecologist before any works to lofts, roofs, hanging tiles or under eaves structures. Soft strip using hand tools of any hanging tiles to be repaired/replaced, soffits and fascia boards and high risk areas of the roof where roosting bats were found under supervision by the licensed ecologist.
- Any bats found during the inspection or soft strip (see below) to be captured by the licensed ecologist and moved into the bat boxes.
- At least seven x integrated roost features for bats to be incorporated into the final design for the main house. The features would be based on the final design and proposed methodology e.g. whether the main house will be totally re-roofed. Options for bat roost creation include:
 - Roost feature in new soffit/fascias created by leaving 2-3cm access gaps or holes or installing a soffit bat box (see [Soffit Bat Box \(wildcare.co.uk\)](#)). Ideally, the soffit would be wood or rough-surfaced (i.e. not uPVC) for this option to be most effective;
 - Bat tubes such as Schwegler 1FR incorporated into the building fabric;
 - Bat bricks such as Ibstock brick or Habibat box incorporated into the building fabric;
 - Attached bat boxes such as Schwegler 2FE or Beaumaris woodstone boxes on the existing or extended building, although these often degrade more rapidly or become detached over time.

Bat roost features are usually installed at least 3-4m in height to maximise their chance of use and ideally installed on south/west elevations.

- If repairs to the main roof are required, 3 x raised tiles/raised ridge tiles to be reinstated to enable bat access back into the main loft. This would be achieved by using an off-the-shelf design such as [Bat Access Tile Set | NHBS Practical Conservation Equipment](#) or leave a gap of 2cm x 5cm under a tile raised with additional mortar or using leadwork. A corresponding slot will need to be cut in the underfelt below the raised tile.

- Any membranes used during re-roofing of the main loft or hanging tiles to comprise bitumen type 1F underlay (or an approved product by Natural England) as bats can become entangled in breathable roofing membrane.
- There will need to be no additional light spill onto the roost features and entrances.
- If roosting bats are found or suspected to be present when an ecologist is not present on site, works will cease and the ecologist contacted for advice. Bats would not be handled by contractors.

The site is used by commuting and foraging bats including light-sensitive species. Best practice must be followed including designing lighting sensitively in accordance with *Bats and Artificial Lighting at Night* (ILP, 2023) to reduce light spill. Lighting measures include:

- Only using external lighting where necessary for safety reasons;
- External lighting to be fitted with PIR sensors and short-duration timers;
- Avoiding indiscriminate floodlighting and choosing downward-facing, wall-mounted directional fittings;
- Warmer light colours below 2700K to be used;
- Minimise large expanses of glazing facing onto boundary trees and hedgerows; and
- Use recessed internal light fittings and position light fittings away from windows.

5.1.3 Nesting Birds

If works commence during the peak nesting bird season of March to August, the pre-commencement check by a suitably qualified ecologist, will also include a detailed assessment of the main building for presence of nesting birds. Some features on the main building which may be suitable for roosting bats are also potentially suitable for nesting birds. Any dense vegetation such as ornamental shrubs, trees or bramble scrub should be cleared during September to February inclusive to avoid the main bird nesting season. If this is not possible, a suitably qualified ecologist will need to complete a nesting bird check within 48 hours of removal or demolition. If any evidence of active bird's nests is found or suspected to be present, all activities must cease within at least 5m of the nest. Active birds' nests plus the buffer would need to be retained and protected until chicks have fledged which can take up to six weeks.

5.1.4 Reptiles, Amphibians and Hedgehog

Habitat within the proposed scheme footprint is unlikely to be used by great crested newt, but may be used by common toad.

A low population of common lizard was recorded. Therefore, a trapping and translocation scheme would be disproportionate. Instead, the risk of killing or injuring reptiles will need to be minimised via the following precautionary approach:

1. Toolbox Talk to be provided to contractors by an ecologist before site clearance works commence, detailing legalities, identification of reptiles and amphibians, precautionary methodology and how to proceed if reptiles are unexpectedly found.

2. Vegetation within the site must be cleared in a two-stage approach under ecological supervision. An ecologist will supervise strimming of vegetation to approximately 15cm above ground level during the active season (March to October) or when temperatures are regularly above 10°C and removal of any log, compost, piles of stone/stone walls and brash piles by hand/hand tools.
3. Arisings will be removed and the area left for 48 hours before cutting to ground level. The site would be cleared sequentially from one end to the other to flush reptiles into suitable adjacent habitat.
4. If GCN are unexpectedly found, a Natural England licence would be required to proceed lawfully. Vegetation clearance would need to cease until the licence is in place.
5. If reptiles are found, they will be encouraged to disperse of their own accord, or captured and moved to a brash pile which will be created adjacent to retained habitat under trees in the north-west corner. If more than 10 reptiles are found (which is unlikely), a trapping and translocation scheme with a dedicated off-site receptor area would be implemented. This would be reported to the Local Planning Authority and Local Records Centre.
6. The site clearance will include a search for hedgehog and other wildlife. If hedgehog or other amphibians are found, they shall be moved outside of the construction zone into suitable nearby habitat.
7. Once the vegetation has been cut, it shall be maintained to less than 10cm above ground level by regular cutting until works commence.
8. All waste and materials to be stored above ground level e.g. in skips or on pallets during works.

5.1.5 Other Protected and Notable Species

All trenches must be covered overnight or fitted with escape ramps e.g. scaffold boards so that any wildlife which falls in can escape. Any open pipework with an outside diameter of greater than 120 mm must be covered at the end of each workday to prevent animals entering/becoming trapped. If other protected or notable species are unexpectedly found, an ecologist must be contacted for advice. Given that limited areas of scrub will be removed, and boundary habitats including woodland will be retained, the risk to hazel dormouse is considered to be negligible.

5.2 Enhancement Measures

5.2.1 Habitats

Measures to deliver Biodiversity Net Gain will also benefit a range of species. Consideration must be given to the use of native or beneficial fruit- and nut-bearing trees, such as apple *Malus domestica*, wild cherry *Prunus avium*, hazel *Corylus avellana*, and hawthorn *Crataegus monogyna* to provide nectar for pollinators, fruit and seeds for birds and small mammals, and foraging

opportunities for bats. Use of other planting (shrubs and flowering plants) which are nectar and pollen-rich would also benefit wildlife. Planting of additional native hedgerows comprising at least 4-5 native shrub species of local provenance would also be beneficial.

5.2.2 Species-Specific Measures

In addition to Biodiversity Net Gain, the following measures should also be included to provide habitat for particular species in accordance with national and local planning policy:

- As well as mitigation required on the main building, at least one feature for roosting bats should be incorporated into each new building. Options for bat roost creation include:
 - Roost feature in new soffit/fascias created by leaving 2-3cm access gaps or holes or installing a soffit bat box (see www.wildcareshop.com/soffit-bat-box.html). Ideally, the soffit would be wood or rough-surfaced (i.e. not uPVC) for this option to be most effective;
 - Bat tubes such as Schwegler 1FR;
 - Bat bricks such as Ibstock brick or Habibat box; or
 - Attached bat boxes such as Schwegler 2FE or Beaumaris woodstone boxes, although these often degrade more rapidly or become detached over time.

These features are fully enclosed and so would prevent bats accessing any inhabited spaces within the property. Bat roost features are usually installed at least 3-4m in height to maximise their chance of use and ideally installed on south/west elevations.

- Features for nesting birds such as a universal nest brick suitable for house sparrow and nesting swift as enhancement measures (see [Swift Bricks](#) or [RSPB Sparrow Terrace Nest Box - RSPB Shop](#)). If appropriate to be included, swift nest boxes should be sited at least 4m above ground level and with an open drop-zone i.e. without ledges or rooflines below. All boxes should be site in a location where it is unlikely to be disturbed or accessible to predators and ideally on a north, east or west facing elevation or out of direct sunlight as much as possible. Bricks should be clustered in groups of two to three.
- Hedgehog connectivity measures (13cm x 13cm gaps) to be incorporated into solid site boundaries.
- Hedgehog house such as [Hedgehog Home](#) to be installed in the north-east corner within the shared garden space.
- 2 x habitat (log or brash) piles of at least 1m x 0.5m to be created in the north-east and north-west corners.

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Appendices

Appendix A Site Photographs

Appendix C Bat DNA Results



7 August 25

Re: Identification Results for Sarah Dale, Avondale Ecology

Job number 21774, received 24 July 2025

Sample labelled: The Old Vicarage, Heytesbury

PCR amplification successful. DNA sequence:

ATGACCAACATTTCGAAAGTCCCACCCTCTCATAAAAATTATCAATGACTCATTTCATTG
ACTTACCTGCTCCCTCAAATATTCATCATGATGAAACTTTGGATCTCTTCTAGGCATT
TGCC

Phylogenetic analysis identification: *Plecotus auritus*

Confirmed by maximum likelihood, maximum parsimony, bootstrap 100%.

Best regards,

Professor Robin Allaby

The results and conclusions in this report are based on an investigation of mtDNA sequence analysis. The results obtained have been reported with accuracy. The interpretation represents the most probable conclusion for the DNA sequence obtained rather than the sample provided given current levels of species data. It should be borne in mind that different circumstances might produce different results. Therefore, care must be taken with interpretation of the results especially if they are used as the basis for commercial recommendations.

Professor Robin Allaby

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