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Ecological Impact Assessment

7, 8, 9 Nethercote Hill
Lacock
Chippenham
SN15 2LD

June 2024

Darwin Ecology Ltd
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Issue number		1
This report remains valid for 24 months from date of issue. Survey data are valid for 18 months from the date the survey was undertaken.		

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The views and opinions contained within the document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to works.

1. EXECUTIVE SUMMARY

1.1. Darwin Ecology Ltd was commissioned by Mr Mark Johns to undertake an EcIA of proposals for the building at at 7, 8, 9 Nethercote Hill, Lacock, Chippenham, SN15 2LD. The assessment was required to support a planning application for the erection of a rear single storey extension and the installation of solar panels on the western aspect of the roof and was informed by a desk study, internal / external building inspection and emergence / re-entry surveys for bats.

1.2. The building inspection assessed the house to hold a **moderate potential** to support roosting bats. Therefore, in line with the Bat Conservation Trust guidelines (2023) two dusk emergence surveys were conducted in May and June 2024.

1.3. During the emergence surveys, a peak count of a single common pipistrelle bat *Pipistrellus pipistrellus* was recorded emerging the underside of the verge tiles on the southern gable end of the property on the first survey, and from under the barge board on the northern gable during the second survey. Activity in the surrounding area was low, with recorded activity predominantly consisting of passes by common and soprano pipistrelles.

1.4. The proposed plans show the works will directly impact a confirmed low level roost for common pipistrelle within the building. An appropriate licence will required to permit the above actions.

1.5. Mitigation and compensatory measures to ensure the Favourable Conservation Status (FCS) of bats is maintained will include:

- Education of contractors on protection afforded to bats through a Tool Box Talk;
- Ecological supervision and soft strip of features suitable for use by bats by hand and using hand tools prior to the rest of the building works;
- Provision of 1 x Schwegler 1FD for use as safe release site. These are to be installed in a location determined by a licensed bat ecologist to ensure likelihood of uptake is increased ;
- Integration of 1 x Green and Blue Bat Block (or similar) into the southern gable of the new dwelling, to provide a compensatory roosting feature for individual pipistrelles; and
- Any new external lighting will be fitted with downward facing baffles and will be directed to avoid light spillage.

1.6. Recommendations for enhancements have also been made which include additional ridge tile crevice features suitable for pipistrelle species.

2. INTRODUCTION AND BACKGROUND

2.1. Darwin Ecology Ltd was commissioned by Mr Mark Johns to undertake an EcIA of proposals for the building at at 7, 8, 9 Nethercote Hill, Lacock, Chippenham, SN15 2LD[1]. The assessment was required to support a planning application for the erection of a rear single storey extension and the installation of solar panels on the western aspect of the roof and was informed by a desk study, internal / external building inspection and emergence / re-entry surveys for bats.

2.2. The proposed drawings on which this assessment is based are provided at **Appendix 1, Proposed Plans**.

2.3. The survey and report follow the Bat Conservation Trust (BCT) Good Practice Guidelines (2023).

2.4. The subsequent Ecological Impact Assessment (EcIA) follows the roost assessment methodology set out by Wray *et al*. (2010) and the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (2018).

Site Overview

2.5. The site is comprised of two adjoined cottages and garden in a rural setting. The habitats within the gardens include boundary and interior hedgerows, young and mature trees, discrete habitat features (included log piles and structures) and transitional vegetation mosaic habitats. A number of bat and tree boxes were located on mature trees present within the boundaries of the site which were installed to provide enhancement for a previous planning application.

2.6. The building on site is immediately bordered by residential gardens to the north, west and south, and by a lane to the east (see **Figure 1)**.

2.7. The wider landscape is a mixture of agricultural and residential, with the village of Lacock located approximately 200m to the south and the remainder of the habitat comprising allotments, pasture fields bordered by hedgerows and the grounds of Lacock Abbey. The river Avon is located 320m to the east of the site (see **Figure 2**).

Scope of Assessment

2.8. The process of EcIA aims to identify, quantify and evaluate the potential effects of development-related or other proposed actions on habitats, species and ecosystems.

2.9. Potential effects on the following ecologically sensitive receptors have been considered during the EcIA of 7,8,9 Nethercote Hill:

- Statutory designated sites; and

[1] Ordnance Survey (OS) grid reference ST 91674 68791.

- Features of potential importance (such as loft voids or external crevice features).

2.10. The aim of this report is to:

- Identify and describe bats roosts present within the site;
- Classify the the type of roost present (e.g. day roost, maternity roost etc);
- Carry out an impact assessment of the proposed works and how they will directly / indirectly affect bats and their roosts;
- Outline the relevant legislation and protection afforded to bats; and
- Provide avoidance, compensation, mitigation and enhancement measures recommended to avoid harm / injury to roosting bats.



Figure 1: Site location within the local landscape with the building surveyed highlighted in orange (Copyright Google Earth Pro, 2024)



Figure 2: Site location within the wider landscape (Copyright Google Earth Pro, 2024)

3. LEGISLATION & POLICY

General Wildlife Legislation

3.1. Wildlife in the United Kingdom (UK) is protected through European and national legislation, supported by national and local policy and guidance. Development can contribute to conservation and enhancement goals outlined by these various legislation and policy by retaining and protecting the most valuable ecological features within a site and incorporating enhancements to provide biodiversity net gain.

3.2. This section provides a brief summary of the principle legalisation and policy that triggers the requirement for PRA and further ecological assessments in the UK. The presence of protected species within a site are a material consideration during the planning process. PRAs and any necessary further ecological assessments provide an ecological baseline for a site and evaluation of the potential impact of proposals.

3.3. It is the responsibility of those involved with development works to ensure that the relevant legislation is complied with at every stage of a project. Such legislation applies even in the absence of related planning conditions or projects outside the scope of the usual planning process (i.e. permitted development projects or projects requiring Listed Building Consent only).

Bat Legislation

3.1. In England and Wales, all bat species and their roosts are legally protected under the European *Habitats Directive (1992)*; the *Conservation of Habitats and Species Regulations (2017)*; the *Wildlife and Countryside Act (1981) (as amended)*; the *Countryside and Rights of Way Act, 2000*; and the *Natural Environment and Rural Communities Act (NERC, 2006)*.

3.2. Barbastelle *Barbastella barbastellus*, Bechstein's *Myotis bechsteinii*, greater horseshoe *Rhinolophus ferrumequinum*, lesser horseshoe *Rhinolophus hipposideros*, brown long-eared *Plecotus auritus*, soprano pipistrelle, and noctule *Nyctalus noctula* bats are all species of principal importance in England under *Section 41* of the *Natural Environment and Rural Communities Act 2006*.

3.3. You will be committing a criminal offence if you:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat; or
- Intentionally or recklessly obstruct access to a bat roost.

3.4. The government's statutory conservation advisory organisation, Natural England, is responsible for administering EPS licenses that permit activities that would otherwise lead to an offence.

3.5. A licence can be obtained if the following three tests have been met:

- Regulation 53(9)(a) - there is "no satisfactory alternative" to the derogation, and;
- Regulation 53(9)(b) - the derogation "will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range" and;
- Regulation 53(2)(e) - the derogation is for the purposes of "preserving 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".

National Planning Policy

3.1. The *National Planning Policy Framework (2021)* aims to minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity. Chapter 15 'Conserving and enhancing the natural environment' details what local planning policies should seek to consider with regard to planning applications.

3.2. Planning policies and decisions should contribute to and enhance the natural and local environment by:

> *174 a)* Protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
>
> *174 b)* Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and eosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
>
> *174 d)* Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
>
> *175)* Plans should: distinguish between the hierarchy of international, national and local designated sites; allocate land with the lease environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement

of natural capital at a catchment or landscape scale across local authority boundaries;

176) Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and Broads. The scale and extent of development within all these designated areas should be limited, while development within their settings should be sensitively located and designed to avoid or minimize adverse impacts on the designated area.

3.3. Specific policies regarding habitats and biodiversity comprise:

179) To protect and enhance biodiversity and geodiversity, plans should:

a) identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation and

b) 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.

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

a) if significant harm to biodiversity resulting from a development cannot be avoid (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 of Sites 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 feature 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 r deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserved or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around development 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.

3.4. *Circular 06/05: Biodiversity and Geological Conservation* provides guidance on the application of the law relating to planning and nature conservation and complements the *National Planning Policy Framework*.

3.5. *Biodiversity 2020: A strategy for England's wildlife and ecosystem services* provides the *UK Biodiversity Action Plan* and country level biodiversity strategies for England, based on the list of habitats and species listed on *Section 41* of the *Natural Environment and Rural Communities Act 2006*. These are considered the habitats and species of principal importance requiring conservation action.

Local Planning Policy

3.6. The local planning policy for the site is the Wiltshire Core Strategy, adopted January 2015. It sets out a strategic spatial vision, key objectives and overall principles for development in the county for the period up to 2026. The relevant policies regarding ecology, nature conservation and development comprise:

Core Policy 50 Biodiversity and Geodiversity

Protection

Development proposals must demonstrate how they protect features of nature conservation and geological value as part of the design rationale. There is an expectation that such features shall be retained, buffered, and managed favourably in order to maintain their ecological value, connectivity and functionality in the long-term. Where it has been demonstrated that such features cannot be retained, removal or damage shall only be acceptable in circumstances where the anticipated ecological impacts have been mitigated as far as possible and appropriate compensatory measures can be secured to ensure no net loss of the local biodiversity resource, and secure the integrity of local ecological networks and provision of ecosystem services.

All development proposals shall incorporate appropriate measures to avoid and reduce disturbance of sensitive wildlife species and habitats throughout the lifetime of the development.

Any development potentially affecting a Natura 2000 site must provide avoidance measures in accordance with the strategic plans or guidance set out in paragraphs 6.75-6.77 above where possible, otherwise bespoke measures must be provided to demonstrate that the proposals would have no adverse effect upon the Natura 2000 network. Any development that would have an adverse effect on the integrity of a European nature conservation site will not be in accordance with the Core Strategy.

Biodiversity enhancement

All development should seek opportunities to enhance biodiversity. Major development in particular must include measures to deliver biodiversity gains through opportunities to restore, enhance and create valuable habitats, ecological networks and ecosystem services. Such enhancement measures will contribute

to the objectives and targets of the Biodiversity Action Plan (BAP) or River Basin/ Catchment Management Plan, particularly through landscape scale projects, and be relevant to the local landscape character.

Local sites

Sustainable development will avoid direct and indirect impacts upon local sites through sensitive site location and layout, and by maintaining sufficient buffers and ecological connectivity with the wider environment. Damage or disturbance to local sites will generally be unacceptable, other than in exceptional circumstances where it has been demonstrated that such impacts:

i. cannot reasonably be avoided

ii. are reduced as far as possible

iii. are outweighed by other planning considerations in the public interest

iv. where appropriate compensation measures can be secured through planning obligations or agreements.

Development proposals affecting local sites must make a reasonable contribution to their favourable management in the long-term.

Wiltshire Biodiversity Action Plan

3.7. The Wiltshire Biodiversity Action Plan (BAP) was published in 2002 and reviewed in 2008 by the Wiltshire Wildlife Trust and over 40 delivery partners who make up the Wiltshire BAP Partnership. It includes habitat action plans for 11 of the most significant of the UK Priority Habitats in Wiltshire which include woodland, wood-pasture, parkland and ancient trees, hedgerows, calcareous grassland, neutral grassland, traditional orchards, farmland habitats, built environment, standing open water and rivers, streams and associated habitats. In addition, a bat species action plan has also been included, covering all bat

species found in Wiltshire, while other priority species have been included under the appropriate habitat action plans.

3.8. The Wiltshire BAP species list includes both species having national priority under the UK BAP and also species having local importance in Wiltshire including county notables. A total of 260 species have been included on the Wiltshire BAP species list.

3.9. The Wiltshire BAPs aim to achieve the following:

- Enable prioritisation and define actions for priority habitats and species in Wiltshire.
- Create a plan of action that can be delivered through a partnership of statutory, private and third sector organisations.
- Provide a baseline of current knowledge and a tool to help monitor key habitats and species.
- To link objectives, targets and actions to report nationally and enable conservation work carried out in Wiltshire to contribute to national targets and reporting.

3.10. In 2012, a landscape scale framework for conservation in Wiltshire was developed, identifying 11 Landscape Biodiversity Areas across Wiltshire and Swindon, made up of a number of priority habitats, designated sites and other areas of conservation significance. This aims to encourage landscape scale planning for species and habitat conservation across Wiltshire.

3.11. Wiltshire County Council (WCC), Natural England (NE) and local experts and researchers have jointly prepared the *Bat Special Areas of Conservation (SAC) Planning Guidance for Wiltshire (2015)*. It is aimed at applicants, agents, consultants and planners involved producing and assessing development proposals in the landscapes surrounding Wiltshire's most sensitive bat roosting sites, which are protected by European wildlife legislation and applies to all types of developments that are subject to planning control.

3.12. The guidance gives details on how to mitigate any potential impacts on Wiltshire Bat SACs and to ensure that any potential issues are identified as early in the planning process as possible to prevent unnecessary delays to development projects. The guidance also outlines the ecological documents and plans, which should be submitted in support of planning applications, so as to ensure that the council has all the information required to undertake a reliable Habitats Regulations Assessment (HRA) should one be required.

4. METHODOLOGY

Desk Study

4.1. A desk study was undertaken for designated sites and bat species and habitat records within 2km of the site:

- The MagicMap website was reviewed, to obtain information on any designated sites of nature conservation interest within 2km of the site and details of any EPS licences issued within 1km;
- The Wiltshire County Council Planning Portal was searched for past and pending planning applications that may have associated ecological documents detailing results of bat surveys; and
- Google Maps and Ordnance Survey (OS) Leisure Maps was utilised to view aerial photographs, maps and mapnik data, and to assess the ecological context of the site within the wider landscape.

4.2. Natural England has developed a tool to help assess the potential risks to Sites of Special Scientific Interest (SSSIs) by proposed developments. These are known as 'Impact Risk Zones' (IRZs) and they define the area around a SSSI that could be sensitive to development, considering the particular sensitivities of the feature for which the site is designated.

4.3. The IRZs help inform whether a development proposal may affect a SSSI and if so, whether it is necessary for the Local Planning Authority (LPA) to seek pre-application advice from Natural England. Information on the IRZs was determined from the MAGIC website to determine if the LPA is required to seek consultation for the current development.

Building Inspection

4.4. Principal Ecologist Olatz Gartzia BSc MSc ACIEEM (Bat Class 2 Licence: 2015-16222-CLS-CLS) conducted a building inspection at the site at 7, 8 & 9 Nethercote Hill on 28th February 2024. The weather conditions at the time of the survey were overcast with light rain and a light breeze, and a temperature of approximately 8^{o}C. The following methodology was followed:

External Survey

4.5. An investigation was carried out of external features with potential for use by roosting bats, such as gaps under roof and ridge tiles, gaps at soffit boxes or fascias. A search for bat droppings was made beneath each potential entry/exit point identified where accessible. The surveyor used binoculars and powerful, low-heat LED torch.

Internal Survey

4.6. An investigation was carried out of the roof void (including the floor and walls) for signs of bats roosting and the access potential into the roof void for bats. The surveyor looked for

bats, bat droppings, likely access points, signs of feeding, dead bats, scratch marks and staining, and made a suitability assessment of the structure of the roof.

Potential to support roosting bats

4.7. Each building and tree was assessed for its potential to support roosting bats as detailed in **Table 1** below which is taken from the Bat Conservation Trust 2023 guidelines Table 4.1 and Table 7.3.

Table 1: Roost classification from the Bat Conservation Trust (2023) guidelines.

Category	Description of roosting habitat	Number of surveys required
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No further surveys
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.	No further surveys
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, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis by large numbers of bats.	Single survey between May to August
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, condition and surrounding habitat but unlikely to support a roost of high conservation status.	Two surveys with at least one survey between May to August.
High / Confirmed	A structure with one or more potential roost sites that are obviously suitable for use by a larger number of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts.	Three surveys with at least two surveys between May to August.

Emergence Surveys

4.8. Two dusk emergence surveys were conducted on the main building during the 2024 survey season. Surveys were undertaken in line with BCT Good Practice Guidelines (2023), with any limitations outlined below.

4.9. Surveyors were positioned strategically around the building in order to provide adequate coverage of all elevations. Surveyors focused on any features identified during the Preliminary Roost Assessment (PRA) as having potential to be used as bat access points. The location of the surveyors and building numbers / names are shown on **Figure 3, Bat Survey Results**.

4.10. Dusk surveys began 15 minutes prior to sunset and lasted 1.5 hours after sunset. Surveyors recorded bat activity using hand-held Echometer Touch detectors connected to Android or iPhone devices. Analysis of recordings was undertaken after the surveys to confirm species identification. Observations recorded during surveys included bat access

points, bat species, time, and type of activity (e.g. emergence, re-entry, commuting, foraging, etc.). Incidental records of bats within the vicinity of the building (but not necessarily roosting) were also recorded.

4.11. A Canon AX20 video camera and Black Sun 2 B502 infra-red illuminator were also used to film bat activity at a fixed position, covering an aspect of the building not visible to the surveyors. The video footage was reviewed following the survey to identify any bat activity captured and any significant activity patterns and access points were identified and recorded.

4.12. A summary of the survey dates and weather conditions are provided in **Table 2**.

Table 2: Emergence survey dates and weather conditions

Date	Survey type	Sunset/ sunrise time	Start weather conditions	End weather conditions	Surveyors
15/05/24	Dusk Emergence	20:54	Rain: 0 Wind: 1 Cloud cover: 0% Temperature: 14ºc	Rain: 0 Wind: 1 Cloud cover: 0% Temperature: 12.5ºc	Agnes Rutter Callum Daglish
04/06/24	Dusk Emergence	21:19	Rain: 0 Wind: 1 Cloud cover: 80% Temperature: 14ºc	Rain: 1 Wind: 1 Cloud cover: 70% Temperature: 12ºc	Agnes Rutter Callum Daglish

Evaluating Bat Roosts

4.13. The value of the bat roosts on site was assessed in accordance with the article published in the CIEEM, In Practice Magazine - *Valuing Bats in Ecological Impact Assessment* (Wray, *et al.*, 2010).

4.14. Roosts are assigned a relative ecological value based on the rarity of the species (**Table 3**) and categorisation of roost type (**Table 4**), informed by survey results. Once a value has been calculated, robust mitigation for any impacts identified from the proposed development can be determined.

Table 3: Categorising bat species by distribution and rarity

Rarest	Rare	Common
Greater horseshoe Bechstein's Alcathoe Greater mouse-eared Grey long-eared Barbastelle	Lesser horseshoe Whiskered Brandt's Daubenton's Natterer's Leisler's Noctule Nathusius' pipistrelle Serotine	Common pipistrelle Soprano pipistrelle Brown long-eared

Table 4: Valuing bat roosts

Geographic Frame of Reference	Roost Type
District, Local or Parish	Feeding perches (common species) Individual bats (common species) Small numbers of non-breeding bats (common species) Mating sites (common species)
County	Maternity sites (common species) Small number of hibernating bats (common and rarer species) Feeding perches (rarer/rarest species) Individual bats (rarer/rarest species) Small numbers of non-breeding bats (rarer/rarest species)
Regional	Mating sites(rarer/rarest species) including well-used swarming sites Maternity roosts (rarer species) Hibernation sites (rarest species) Significant hibernation sites for rarer/rarest species or all species assemblages
National/UK	Maternity sites (rarest species) Sites meeting Sites of Special Scientific Interest (SSSI) guidelines
International	Special Areas of conservation (SAC) sites

Limitations

4.15. The surveys were undertaken in accordance with the best practice guidelines within the peak bat activity period (May to August inclusive). The results are therefore considered to be an accurate representation of the general use of the building by roosting bats.

4.16. Two emergence surveys were conducted instead of three normally recommended on buildings with confirmed roosts. However, it is considered sufficient information has been collected from the site per BCT Guidance (Collins, 2023) and no additional surveys are deemed necessary to characterise the roost.

4.17. The desk study does not include data from the local environmental records centre (LERC). However, following Bat Conservation Trust guidelines a full data search is not necessary for smaller projects e.g. projects impacting a single house or barn and formal gardens. This is a small scale project where the proposed works are restricted to the single building on site. Therefore the lack of LERC data is not considered a limitation to the ecological assessment of the site.

4.18. Many species of bat in the UK are crevice-dwelling, and bats or signs of bats can be difficult to find within a building. In addition, there may be areas that are inaccessible to the surveyor, for instance the eastern roof aspect was difficult to observe from the ground.

4.19. No other limitations were encountered, or assumptions made during either the desk study or the field survey and it is considered that with the access gained and recording undertaken an accurate assessment of the site’s ecological importance has been made.

5. SURVEY RESULTS

Desk Study

5.1. The data search returned no statutorily designated sites within 2km radius of the site. The Bradford-on-Avon Bat Special Area of Conservation (SAC) is located 7.3km from the site, and therefore the site falls outside the sustenance zones for Bechstein's *Myotis bechteinii*, lesser *Rhinolophus hipposideros* and greater horseshoe *R. ferrumequinum* bats.

5.2. There were two records of EPS licences for bats within 2km, including one for the destruction of a resting place for common and soprano pipistrelle bats located 1.5km to the north of the site (2018-36586-EPS-MIT) and one for the destruction of a breeding place for brown long-eared bats 1.6km to the west of the site (2017-31337-EPS-MIT).

5.3. A search on the Wiltshire Council Planning Portal found applications from the last two years containing ecology documentation, however these only included records of sites with buildings with negligible potential for bats 200m south (PL/2023/02787) and 2.3km northeast (PL/2022/09164).

5.4. There are six areas of priority deciduous woodland sites located to the south of the site, the nearest of which is 80m from the site. The woodland areas present in Lacock Abbey Grounds are also within 500m of the site. Further priority habitats within 1km of the site comprise. Traditional orchards, wood pasture and parkland, and coastal and floodplain grazing marsh. There are no areas of ancient woodland within 1km of the application site.

Preliminary Roost Assessment

External Assessment

5.5. The building on site comprised two adjoined stone built residential properties with a pitched roof clad with interlocking clay tiles. Two brick chimneys were located within the roof, which appeared well sealed. The gable ends were made of stone, with a wooden barge boards present on the eaves. Several lifted tiles were recorded on the roof, including under ridge tiles as well as gaps under the lead flashing by the chimneys and vents. A crevice on the site wall was recorded on the western aspect by the guttering.

5.6. Two single storey flat roofed extension were present on the western aspect. The extension to the south, proposed to be demolished, had a corrugated metal roof and concrete breeze block walls. A gap was noted beneath the lead flashing on the southern end of the extension. The extension located to the north had a felted roof, with a wooden soffit box with was tightly fitted, and stone walls which appeared in good condition.

Internal Assessment

5.7. Internally, a single void was present measuring 15m long x 7m wide x 2m tall. The void was trussed and the two brick chimney breasts were blocking the internal space. The roof had exposed wooden beams and no roofing felt was present on the underside of the tiles. The

void appeared heavily cobwebbed along the ridge, around the chimneys and on the apex of either gable, however, several potential access points to the interior were recorded, including on several lifted tiles, the ridges and the eaves on the western and eastern aspects.

5.8. No evidence of bats was found, however, given the numerous access points and the presence of a small number of crevice features within the roof, the building was assessed as providing a **Moderate potential** for roosting bats.

Surrounding Habitats

5.9. The property is largely dominated by amenity grassland lawn with scattered ornamental trees adjacent to the west and south of the house, with areas of ornamental planting and hardstanding interspersed between. None of the trees within the garden on site were assessed as providing suitability to support roosting bats. A number of trees within the hedgerow had bat and bird boxes installed on them.



Image 1: Northern gable



Image 2: Rear of the building with flat roofed extensions



Image 3: Existing flat roofed extension with tight soffit box



Image 4: Gap beneath lead flashing on the extension to be demolished



Image 5: Internal roof structure



Image 6: Access recorded along the eaves

Emergence Survey Results

Emergence Survey 15.05.24

5.10. During the dusk emergence survey on the 15th May 2024 a single common pipistrelle bat was recorded emerging from under a verge tile on the southern gable. The bat emerged 22 minutes after sunset.

5.11. Low to moderate bat activity was recorded throughout the survey, with four bat species being recorded - common pipistrelle, soprano pipistrelle, Myotis species and noctule bat. Recorded activity predominantly consisted of passes along the garden and the hedgerow adjacent to the road, but some accounts of pipistrelle (soprano and common pipistrelle) feeding activity was noted.

Emergence Survey 04.06.23

5.12. During the dusk emergence survey on the 4th June 2024 a single common pipistrelle bat was recorded emerging from under the barge board on the northern aspect of the property. The bat emerged 28 minutes after sunset.

5.13. There was generally low levels of activity throughout the survey with single foraging and commuting passes of common and soprano pipistrelle bats and single passes from noctule bat.



Image 7 & 8: Snapshot of infrared camera footage at lightest (left) and darkest (right) points of the survey



***NOTE Areas are indicative and are not shown to exact scale.**

Building surveyed

Surveyor Location

Camera Location

Bat Emergence/ Re-entry Location and Flight Path (coloured by species)

Bat Species

Common Pipistrelle

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Project: 7, 8 & 9 Nethercote Hill

Figure 3: Emergence/ Re-entry Survey Results

Date: June 2024

6. IMPACT ASSESSMENT

Designated Sites and Desk Study

6.1. It is not anticipated that the proposed extension on the rear of the building will impact any statutory designated sites, priority habitats or ancient woodlands through land take or other direct effects. There will be no increase in residential dwellings and therefore no increased footfall on nearby designated site.

6.2. It is anticipated that, based on current proposal plans, the proposed development will result in temporary disturbance to amenity habitats and a permanent loss of small areas of amenity grassland and ornamental planting. Some trees are planned to be removed which will result in a loss of foraging resources suitable for bat and bird species, but the loss is anticipated to be minor due to the quality of retained and surrounding habitats.

Evaluation of Bat Roosts on Site

6.3. The dwelling at 7, 8, 9 Nethercote Hill is confirmed to support two separate day roosts for common pipistrelle bat. A peak count of one bat was recorded during the surveys.

6.4. See **Table 5** for value of each roost in accordance with Wrey *et al.*, 2010. Impact of works.

Table 5: Value of bat roosts at Nethercote Hill

Species	Rarity	Roost Type	Value
Common pipistrelle	Common	Day	Local

6.5. The roost has been confidently characterised based on the building inspection and two additional emergence surveys conducted during the peak activity season, and therefore no further surveys are required for the site.

Impact Assessment

6.6. The proposed plans at Nethercote Hill comprise the demolition of the exciting extension and replacement for a larger extension as well as the installation of solar panels on thee western aspect of the roof. The works will likely involve repairs to the roof.

6.7. Potential impacts to bats at 7, 8, 9 Nethercote Hill therefore include the destruction of a roosting site, with potential for disturbance, injury or killing of bats in their roosts during works.

6.8. In the absence of mitigation, the works would therefore result in an offence under the *Conservation of Habitats and Species Regulations (2017).*

Mitigation

6.9. The following mitigation strategy provides details of the mitigation measures to minimise the risk of killing or injury of individual bats during the works process. The compensation strategy demonstrates that compensatory roosts will be provided to replace the roosting opportunities present at the existing building, which will be lost.

6.10. In line with the Bat Mitigation Guidelines (Mitchell-Jones, 2004) the roost is of **low** conservation status. Therefore the mitigation and compensation is the provision of new roosting facilities, which don't need to be like-for-like but should be suitable based on species' requirements, and an appropriate licence is required. Due to the number of species and roosts present registration under the Bat Mitigation Class Licence (BMCL) will be required.

6.11. Registration under BMCL: Registration of the site can be submitted following planning approval by the Local Planning Authority (LPA) and the registration must be granted prior to any works commencing on site with potential to impact bats or their roosts. Whilst Natural England aim to provide licensing decisions within 10 working days, processing times may extend to 15 working days].[detail mitigation proposed here.

6.12. Under the BMCL, registered consultants can register a site, which permits the disturbance and / or capture of bats and / or damage / destruction of bat roost(s) of low conservation significance. Sites may be registered under the BMCL where there are:

- No more than three common species of bat;
- Only individual or small numbers of bats of each species; and
- No more than three roosts in total across all structures at the site.

6.13. Such licences will only be granted where it can be shown that there will be no detriment to the species of bat concerned. As such, suitable mitigation measures are will still be required. Mitigation measures will be proportionate to the level of use by bats on site and to the species roosting on site. Mitigation will include measures to ensure that bats are not harmed during the proposed works and to ensure that there is long-term provision of roosting opportunities on site. Input from a registered consultant (or their accredited agent) will be required during licensable activities at the site (such as roof removal).

6.14. *Timing of Works:* The majority of works affecting summer bat roosts can take place between March and October, avoiding the winter hibernation season (November to February inclusive).

6.15. *Toolbox Talk:* Before commencing any work on site, all contractors will be inducted by a licensed bat ecologist or accredited agent in a tool box talk, to ensure they are aware of the risks to wildlife on site, particularly the presence of bat roosts, their legal protection and of

working practices to avoid harming bats and other species in order to ensure working practices on site follow legal requirements.

6.16. *Ecological Supervision:* Immediately prior to any works on site, the buildings must be subject to an internal and external survey by a suitably qualified and licensed bat ecologist to ensure as far as possible that no bats are present. In addition, hand removal / soft strip of internal features suitable for use by bats must be done very cautiously and under supervision by a bat licensed ecologist.

6.17. Bat Boxes: Given most mature trees within the site already have a bat box installed, no additional bat boxes are recommended to act as a safe release site for bats during works.

6.18. Roofing Membrane: Breathable roofing membrane presents an entanglement hazard to bats. **You must provide a certificate that proves the roofing membrane has passed a 'snagging propensity test' if you're using a non-bitumen coated roofing membrane.**

6.19. A snagging propensity test checks that the membrane can stand the repeated snagging actions of roosting bats. To pass, a membrane must show no change in the average number of loops per cm2 as rotations are increased from 0 to 1000.

6.20. You do not need a certificate for bitumen 1F felt that has a non-woven, short fibre construction.

6.21. *Timber Treatment*: Any use of timber-treatment or pest control treatment must be selected from the approved lists for safe use in or near bat roosts which can be provided on request.

6.22. *Lighting:* Any new external lighting must be directed to avoid light spillage onto vegetation, particularly linear habitat features such as woodland edges or potential roosting sites within trees and buildings. Bats are sensitive to light and could potentially avoid the area if access points or the surrounding areas become lit. Appropriate lighting options will prevent a negative impact on bats potentially using the habitats on site and should be approved by a suitably qualified and licensed bat ecologist. Lighting plans should be approved and signed off by a licensed bat ecologist prior to submission, to ensure the scheme is suitable for bats. If appropriate measures are taken to reduce light spillage from the development, it is likely that there will be no negative impacts on local bat populations.

6.23. See **Appendix 1** for further information on designing lighting to minimise impacts on bats.

6.24. Habitats: The proposals do not result in significant loss of foraging habitat for bats, however, a wildlife friendly landscaping scheme is recommended to enhance the site for bats and other wildlife.

Compensation

6.25. To compensate for the loss of the pipistrelle roost at the existing building, a new roosting feature will be integrated into the new dwelling, comprising two ridge tile crevice features at the main ridge of the dwelling.

6.26. Wet or mortared ridges are always the preferred technique on buildings where bat features are being created, with breathable roofing membranes avoided where possible.

7. ENHANCEMENT RECOMMENDATIONS

7.1. National planning policy states that all developments should seek to enhance onsite biodiversity whether impacts on protected species are recorded or not. Incorporating enhancement features into new or renovated buildings should be carefully considered. These features can be simple and inexpensive, please see below for specific recommendations.

Bats

7.2. In addition to the compensatory ridge features described in the previous section, one Green & Blue Bat Block (or similar) will be integrated into the gable at the southern aspect of the new extension, which will also provide new roosting opportunities for pipistrelle species, known to be active in the local area.

Birds

7.3. To provide extra nesting opportunities, at least one bird box should be installed on the new building or any retained trees. Bird boxes should be installed at least 4m from ground level and with unobstructed air space in front.

Wildlife Beneficial Landscaping Scheme

7.4. Any future landscape planting should seek to enhance biodiversity, improve connectivity to the surrounding habitats and provide food and shelter for a wide range of wildlife. All amenity planting and formally landscaped areas should be designed using a variety of plant species beneficial for wildlife. These do not necessarily have to be native but should be chosen for their ability to provide nectar or fruit and should be non-invasive species. There are a number of specialist seed mixes available specific to certain soil types, growing conditions and designed to benefit different groups of species such as bees or butterflies and moths.

7.5. All habitats should be managed in a suitable way to encourage a wide variety of insects and other wildlife to use the site.

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APPENDICES

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Bats & Lighting



THE IMPACT OF LIGHTING ON BATS

Bats favour a dark environment for both roosting and foraging as they are adapted to low-light conditions. Artificial lighting will disturb bats if the lighting covers roost access points, flight paths or foraging habitats.

The main peak of nocturnal insect abundance occurs at dusk and a delay in emergence results in a lower foraging rate for bats.

Artificial lighting creates a 'vacuum effect' for nocturnal insects. During the night nocturnal insects use the light of the moon* to navigate. However, artificial lighting and even sky glow above cities obscures the natural moonlight as it is closer and radiates light in multiple directions.

Some species of bats have been recorded foraging around street lights such as Pipistrelle species and Nyctalus species. However, species that are less tolerant of artificial light are at a disadvantage when foraging as insects are drawn away from these species usual foraging grounds into the zones of artificial light.

Lighting must be considered in context to any development as increased lighting may cause roost abandonment, reduced reproductive success, and reduced foraging. Mitigation to reduce the impacts of lighting for bats is therefore of great importance in bat conservation.

Table 1: Summary of predicted impact of lighting for each species/genus

Impact / Behaviour	High	Medium	Low
Maternity roost	All species	-	-
Night roost	*Rhinolophus hipposideros* *Rhinolophus ferrumequinum* *Myotis* spp. *Plecotus* spp.	*Pipistrellus* spp. *Nyctalus* spp. *Eptesicus serotinus* *Barbastella barbastellus*	-
Emergence	All species	-	-
Foraging	*Rhinolophus hipposideros* *Rhinolophus ferrumequinum* *Myotis* spp. *Plecotus* spp.	-	*Pipistrellus* spp. *Nyctalus* spp. *Eptesicus serotinus* *Barbastella barbastellus*
Commuting	*Rhinolophus hipposideros* *Rhinolophus ferrumequinum* *Myotis* spp. *Plecotus* spp.	-	*Pipistrellus* spp. *Nyctalus* spp. *Eptesicus serotinus* *Barbastella barbastellus*
Swarming	All species	-	-
Hibernation	All species	-	-

*For more information see Warrant, E., and Dacke, M. (2016) Visual Navigation in Nocturnal insects. *Physiology*, 31, 182-196.

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Bats & Lighting

Sources of light that can disturb bats include; light spill via windows, sport floodlighting, car headlights, roadside lighting, security lighting, aesthetic lighting of waterways, and aesthetic illumination of buildings. Glare will affect bats over greater distance than the target area directly illuminated.

Avoidance is the most effective method, but if this is not possible the following measures should be considered.

What lighting should I use?

- Low pressure sodium lights or 'warm' LEDs
- Wavelength above 540nm
- Colour temperature below 2700K
- Shielded lights that prevent light spill above a 70 degree angle
- Passive infrared (PIR) motion sensors





What to avoid:

- Lighting roost entrances, flightpaths, and foraging or commuting routes
- Reflective surfaces beneath lighting
- High level lights
- Non-directional lighting

Lighting should be considered at an early stage allowing impacts to be minimised through the design of the site.

Key Points

- Keep lighting intensity to the minimum level required
- Limit the times that lights are on to provide some dark periods (e.g. switching installations off between midnight and 5am)
- Dim lighting according to demand
- As an alternative to lighting pathways use paving materials that reflect moonlight
- Low level lighting allows darkness to be retained within higher vegetation
- Set dark habitat buffers - lighting should always be a minimum of 25m from vegetated margins and 40m from waterbodies
- Incorporate dark corridors within the site
- Compensate for the loss of dark areas by enhancing other dark areas
- Consider building design - install internal lighting away from windows

Bat Conservation Trust guidance note 08/18 'Bats and artificial lighting in the UK & http://www.cost-lonne.eu/recommendations/

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