

18 Primrose Lane
Winnersh
Wokingham
Berkshire
RG41 5UR

Preliminary Roost Assessment

Report ref.: R2632_PRA_a

<i>Report Quality Control Information</i>	
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March 2024

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1 EXECUTIVE SUMMARY

- 1.1.1** John Wenman Ecological Consultancy LLP was instructed by Mr and Mrs Amara to undertake a Preliminary Roost Assessment (PRA) for bats at 18 Primrose Lane in Winnersh, Wokingham.
- 1.1.2** The aim of the PRA is to determine the actual or potential presence of bats in the property and whether further survey and/or mitigation would be required for future proposed development activities.
- 1.1.3** Whilst no evidence of void-dwelling bat species was observed within the roof voids of the cottage, external crevice roost features were identified including lifted roof tiles, gaps between roof tiles and timber battens above windows, crumbling hip mortar, gaps behind hanging tiles, gaps behind timber fascias and gaps between timbers and brickwork in the gables. The property has been assigned moderate potential suitability for bats.
- 1.1.4** Future development proposals could obstruct access to or result in the damage/destruction of bats roosts, lead to direct/indirect disturbance, injury and/or death of bats, and potentially result in the permanent loss of a bat roost which may have the potential to significantly affect the local distribution or abundance of a bat species.
- 1.1.5** If future development proposals cannot be altered to avoid the potential adverse effects on bats in the property, further survey is recommended to establish the presence or absence of bat roosts in the property, in order to be able to assess fully whether the development proposals will have an adverse effect on bats and design a mitigation strategy if necessary.
- 1.1.6** This report contains information regarding a mobile species so it will likely be valid for less than 12 months (CIEEM 2019b).

2 INTRODUCTION

2.1 Project Background

- 2.1.1** John Wenman Ecological Consultancy LLP was instructed by Mr and Mrs Amara to undertake a Preliminary Roost Assessment (PRA) for bats at 18 Primrose Lane in Winnersh, Wokingham.
- 2.1.2** The PRA was commissioned to accompany a householder planning application to be submitted to Wokingham Borough Council seeking consent for a part single-storey and part two-storey rear extension following the removal of the existing dormer window.

2.2 Site Location and Context

- 2.2.1** The Grade II listed cottage is located on the eastern side of Primrose Lane in Winnersh, situated northwest of Wokingham in Berkshire (central OS grid reference: SU 78371 71457).
- 2.2.2** The cottage is bordered by modern neighbouring properties and their associated gardens on Primrose Lane. Winnersh Meadows is situated less than 50 metres to the north with parcels of grassland bordered by mixed priority woodland and a treeline along the A329. In addition, the southwest boundary of Winnersh Meadows connects to a playing field, situated approximately 240 metres to the west of the property. A network of scattered trees, hedgerows and gardens provides connectivity through the nearby suburban landscape, connecting to a railway corridor situated approximately 700 metres to the southwest.

2.3 Report Objectives

- 2.3.1** The aim of the PRA is to ascertain if there is evidence of the presence of bats and/or potential for roosting bats to be present, and therefore whether further survey and/or mitigation would be required for future proposed development activities.

3 LEGISLATIVE AND POLICY BACKGROUND

3.1 Relevant Legislation

3.1.1 In England and Wales, all bat species found in the wild are fully protected under the Wildlife & Countryside Act 1981 (as amended) (WCA) and Conservation of Habitats and Species Regulations 2017 (as amended); the regulations are commonly referred to as the Habitat Regulations and hereafter referred to as such. The Habitat Regulations refer to European Protected Species (EPS) and all species of bats in the United Kingdom (UK) are EPS. Although the UK left the European Union on the 31st January 2020 and is therefore no longer tied to European legislation, the Habitat Regulations have been retained in their current format.

3.1.2 The legal framework underpinned by the WCA and Habitat Regulations makes these specific actions an offence as follows:

- Deliberately kill, injure, capture or take a wild bat;
- Deliberately, intentionally or recklessly disturb bats; in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, to rear or nurture their young, to hibernate or migrate, or to significantly affect local distribution or abundance;
- Damage or destroy a place used by a bat for breeding or resting; and
- Intentionally or recklessly obstruct access to any place used by a bat for shelter or protection.

3.2 Planning Policy

3.2.1 The biodiversity duty imposed through the Environment Act 2021 states that Local Planning Authorities (LPAs) must consider what action they can take to conserve and enhance biodiversity in England. Government planning policy, such as the ODPM Circular 06/2005, requires LPAs to account for the conservation of protected species when considering and determining planning applications.

3.2.2 The ODPM Circular 06/2005 states that *'the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.'* This policy means that in instances where there is a reasonable likelihood of bats being present and affected by a development, surveys must be undertaken to inform a mitigation strategy to be agreed prior to granting planning permission.

3.3 Mitigation Licensing

3.3.1 The government's statutory nature conservation body, Natural England, is responsible for issuing European Protected Species (EPS) mitigation licences that would permit activities that would otherwise lead to an infringement of the Habitat Regulations. An EPS mitigation licence can be issued if the following three tests derived from Regulation 55 have been satisfied:

- (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.'*
- (9)(a) – there is *'no satisfactory alternative'* to the derogation; and
- (9)(b) – *'the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.'*

3.3.2 LPAs have a statutory duty under Regulation 7(3)(e) of the Habitat Regulations to consider and determine whether these three tests are likely to be satisfied by planning proposals affecting EPS before granting planning permission. If an EPS mitigation licence is necessary, a licence can be sought once all the necessary planning consents have been granted. Natural England aims to issue a decision on licence applications within 30 working days of submission.

3.3.3 The Bat Mitigation Class Licence (BMCL) scheme allows ecologists to apply to become Registered Consultants to use this licence for low conservation status roosts, i.e. roosts comprising small numbers of seven commonly occurring species. A site registration form must be completed as a condition of the licence and submitted to Natural England at least three weeks before the licensable activities are due to start; Natural England aims to register sites within two weeks of submission.

3.3.4 Baseline survey information supporting EPS mitigation licence applications or BMCL site registrations must be up-to-date and have been completed within the current or most recent optimal season. A suitably experienced ecologist will be required to undertake a site walkover/check within three months prior to application/registration submission to confirm that conditions have not changed since the most recent survey.

4 SURVEY METHODOLOGY

4.1 Desk Study

4.1.1 A desk-based study for bats was undertaken to collate and review existing information about the site and the surrounding land. The study utilised the following open access resources:

- OS maps and Google Earth – maps and satellite imagery were used to identify potential flight-paths and foraging habitats for bats;
- DEFRA Data Services Platform and MAGIC – maps were used to locate relevant designated sites, habitats and granted European Protected Species licences; and
- existing bat survey reports – any available reports were obtained from the client or relevant planning portal.

4.2 Building Inspection

Survey Details

4.2.1 A detailed inspection of the exterior and interior of the property was undertaken on the 5th March 2024 by Sarah Foot MCIEEM registered under Natural England Bat Survey Class Licence CL18 (Registration no. 2015-11906-CLS-CLS) and assistant ecologist Jake Morgan (a qualifying member of CIEEM), in accordance with good practice guidance (Collins 2023). The equipment used during the inspection comprised binoculars, a high-power (1 million candlepower) LED torch, a headtorch, ladder and PPE (facemask, gloves etc.). The inspection involved a systematic search of the exterior and interior of the structure during daylight hours to compile information on potential and actual bat access points; potential and actual bat roost sites; and any evidence of bat presence.

External Survey

4.2.2 Frequently used bat access points and/or roost sites include (but are not limited to) spaces:

- behind hanging tiles, weatherboarding, soffit boxes and barge boards;
- under lead flashing (particularly around chimneys) and roof tiles/slates; and
- in existing bat boxes.

4.2.3 It is important to note that the two most abundant and widespread bat species, common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*),

typically only require gaps measuring 15mm by 20mm to gain access to a roost inside a building.

4.2.4 The external survey involved a systematic search for evidence of bats including:

- live or dead specimens;
- droppings;
- urine marks;
- fur-oil staining; and
- squeaking noises.

4.2.5 It should be noted that bats can be present in a building while leaving no visible signs externally and wet weather has the potential to wash any evidence away. The search for evidence was focused on (but was not limited to) the ground, windowsills, windowpanes and walls (including cladding and hanging tiles); particularly in places near to potential bat access points and/or roost sites.

Internal Survey

4.2.6 The internal survey comprised a systematic search for evidence of bats on the upper floors of the building (i.e. checking the exterior from windows) and inside the roof and eave spaces. Evidence of bats found during an internal inspection can include:

- live or dead specimens;
- droppings;
- urine marks;
- fur-oil staining;
- feeding remains (i.e. moth wings);
- squeaking noises;
- bat-fly (Nycteribiid) pupal cases; and
- odour.

4.2.7 It should be noted that only specimens or droppings can be relied upon in isolation to confirm the presence of a bat roost.

4.2.8 Frequently used roosting locations within the roof include (but are not limited to):

- the apex of the gable end or dividing walls;
- the top of chimney breasts;
- ridge and hip beams;
- mortise and tenon joints;
- behind purlins; and
- between tiles and roof lining.

Survey Limitations and Validity

- 4.2.9** There were no significant survey limitations because PRAs can be carried out at any time of year under any weather conditions and the building was fully accessible.
- 4.2.10** It should be noted that it is not always possible to inspect all potential roost sites during a survey, particularly for bat species which typically roost in hidden crevices. Therefore, an absence of bat evidence found during a survey does not necessarily equate to evidence of bat absence in a building.
- 4.2.11** This report contains information regarding a mobile species so it will likely be valid for less than 12 months (CIEEM 2019b).

5 SURVEY RESULTS

5.1 Desk Study

5.1.1 Neighbouring gardens on Primrose Lane and the local playing fields, hedgerows, scattered trees and tree lines provide continuous habitat that could be used as a flight path connecting the property to high-quality foraging habitats such as Winnersh Meadows to the north and the railway corridor to the southwest. In addition, whilst separated by the A329, Dinton Pastures Country Park is situated approximately 300 metres to the northwest which also provides high-quality foraging habitat for roosting bats in the local area.

5.1.2 Bat mitigation licences that have been granted within the last 15 years inside a 2-kilometre radius of the property are detailed in **Table 1** below.

Table 1. Bat mitigation licences granted within a 2km radius of the property (Source: MAGIC).

Case Reference of Granted Licence	Species on the Licence	Licensable Period	Licensable Works	Distance (m)
EPSM2009-1161	Common pipistrelle & brown long-eared	30/10/2009 – 30/09/2011	Destruction of resting place	1010 SW
2015-13607-EPS-MIT	Common pipistrelle	26/08/2015 – 05/08/2020	Destruction of resting place	1600 S
EPSM2009-899	Common pipistrelle	15/04/2010 – 14/04/2012	Destruction of resting place	1690 SW
2014-649-EPS-MIT	Common pipistrelle & soprano pipistrelle	02/05/2014 – 31/10/2014	Destruction of resting place	1790 NW
2017-32001-EPS-MIT	Common pipistrelle	01/01/2018 – 30/04/2018	Destruction of resting place	1960 NE

5.1.3 The client had no existing bat survey reports in their possession and none had been published on the Local Planning Authority's (LPA) online planning portal.

5.2 Building Inspection

Overview

5.2.1 The findings from the external and internal inspections carried out for the property are described with photographs, and annotated in a plan, as follows:

External Survey

5.2.2 The Grade II Listed property dates back to the early 16th century as an oak timber-framed cottage with evidence of renovations and repairs carried out both internally and externally. The cottage had a pitched roof and porch on the front elevation with two existing pitched extensions and a flat-roof dormer on the rear elevation (**Photographs 1 & 2**).



Photograph 1. Front of property viewed from southeast.



Photograph 2. Rear of property viewed from north.

- 5.2.3** The main pitched roof, front porch and existing two-storey extensions were covered in handmade clay tiles that were frequently lifted and naturally uneven, particularly on the rear elevation of the main roof (**Photographs 3 & 4; Target note 1**). Furthermore, tiles were frequently lifted on the catslide roof with further gaps between the tiles and timber battens situated above the windows (**Photographs 5 & 6; Target notes 2 & 3**).



Photograph 3. Frequently lifted/uneven clay roof tiles (rear elevation).



Photograph 4. Frequently lifted/uneven clay roof tiles (front elevation).



Photograph 5. Lifted and missing clay roof tiles on the catslide roof (west elevation)



Photograph 6. Gap between clay roof tiles & timber battens (rear elevation).

- 5.2.4** The ridge and verge mortar on the main roof, front porch and rear extensions were fully intact with the eastern and western-facing gables looking freshly mortared, however, the

hip mortar on the western roof elevation of the easterly rear extension was crumbling in places with a potential gap under the hip tile (**Photographs 7, 8 & 9; Target note 4**).



Photograph 7. Ridge mortar fully intact (front elevation)



Photograph 8. Recently mortared verge (east elevation).



Photograph 9. Crumbling hip mortar (west elevation of rear extension).

5.2.5 The lead flashing situated at the base of the chimneys and at the junction with the external wall on the single-storey western roof elevation was fully sealed to the brickwork and roof tiles (**Photographs 10 & 11**). Whilst the lead flashing was sealed at the base of the rear dormer, there were small gaps behind hanging tiles, particularly under the corner hanging tiles (**Photograph 12; Target note 5**).



Photograph 10. Lead flashing sealed to brick chimney and clay tiles (rear elevation)



Photograph 11. Lead flashing sealed along wall (west elevation).



Photograph 12. Dormer clad with hanging tiles (rear elevation).

- 5.2.6** Whilst the timber fascia was sealed to the rear and western gables, a slight gap was situated behind the timber fascia on the eastern gable of the original part of the house (**Photographs 13 & 14; Target note 6**). In addition, further crevices were situated around the window frame and timbers within the eastern gable with a large gap partially blocked by a bag (**Target note 7**). Chicken wire was situated at the eaves in places around the property potentially blocking internal access at the eaves (**Photograph 15**).



Photograph 13. Timber fascia sealed to the painted brickwork gable (rear elevation).



Photograph 14. Gaps behind the timber fascia and at the edges of the window & timbers within the painted brickwork gable (east elevation).



Photograph 15. Chicken wire situated at the eaves of in places (west elevation).

Internal Survey

5.2.7 The cottage had three accessible voids that covered the second-storey footprint of the building.

5.2.8 The existing two-storey rear extension on the eastern side of the cottage had a void accessible via a loft hatch with an approximate floor-to-ridge height of 0.5 metres (**Photograph 16**). The roof was insulated between timbers with polystyrene which had fallen in places showing the underside of clay roof tiles in which daylight was visible (**Photograph 17**; **Target note 8**). The floor was uninsulated with partial boarding to allow for a water tank that prevented access to the northern brick gable end. Fibreglass insulation was visible around the edges of both the northern and eastern gable ends (**Photograph 18**). Furthermore, the eaves were open to the wall plate and rat droppings were observed throughout the void (**Photograph 19**).



Photograph 16. Roof void 1.



Photograph 17. Roof tiles visible behind sections of missing polystyrene (Roof void 1).



Photograph 18. Fibreglass insulation at the edges of the eastern brick gable (Roof void 1).



Photograph 19. Rat droppings throughout the void (Roof void 1).

5.2.9 The eastern half of the central roof void that covered the main pitched section of the original cottage was accessible via a door on the first-floor and had an approximate floor-to-ridge height of 2.5 metres. A chimney was situated within the centre of the void which

was inaccessible due to a large amount of stored fibreglass insulation, however, the existing two-storey extension on the western elevation of the cottage had a void accessible via a first-floor loft hatch that allowed access to the other end of the central void (**Photographs 20 & 21**).



Photograph 20. Original roof trusses visible and allowing access to the western half of Roof void 2.



Photograph 21. Roof void 2 looking towards the central chimney.

5.2.10 The roof within the central void was covered by a fully intact breathable roofing membrane with a lightly cobwebbed ridge throughout (**Photograph 22**). Small gaps at the eastern gable end were situated around the window within the single-skin brickwork gable alongside a larger gap that was partially blocked by a plastic bag (**Photograph 23; Target note 9**). The western breezeblock gable end was sealed to the timbers and heavily cobwebbed (**Photograph 24**).



Photograph 22. Breathable roofing membrane fully intact throughout (Roof void 2).



Photograph 23. Gaps within the single-skin eastern brick gable with daylight visible (Roof void 2).



Photograph 24. Timbers sealed to the western blockwork gable (Roof void 2).

- 5.2.11** Whilst the floor within the eastern half of the central void was uninsulated with brickwork and daylight visible at the eaves, the western half was covered by fibreglass insulation that filled the eaves (**Photographs 24 & 25; Target note 10**).



Photograph 24. Brickwork and daylight visible with the eastern eaves (Roof void 2).



Photograph 25. Eaves filled with fibreglass insulation.

- 5.2.12** The roof within the rear extension on the western side of the property was used for storage and had an approximate floor-to-ridge height of 0.5 metres (**Photograph 26**). The roof was lined by horsehair felt covered by a wire mesh which was occasionally damaged with clay roof tiles and daylight visible (**Photograph 27; Target note 11**). Open gaps were situated between the timbers and northern brick gable (**Photograph 28; Target note 12**).



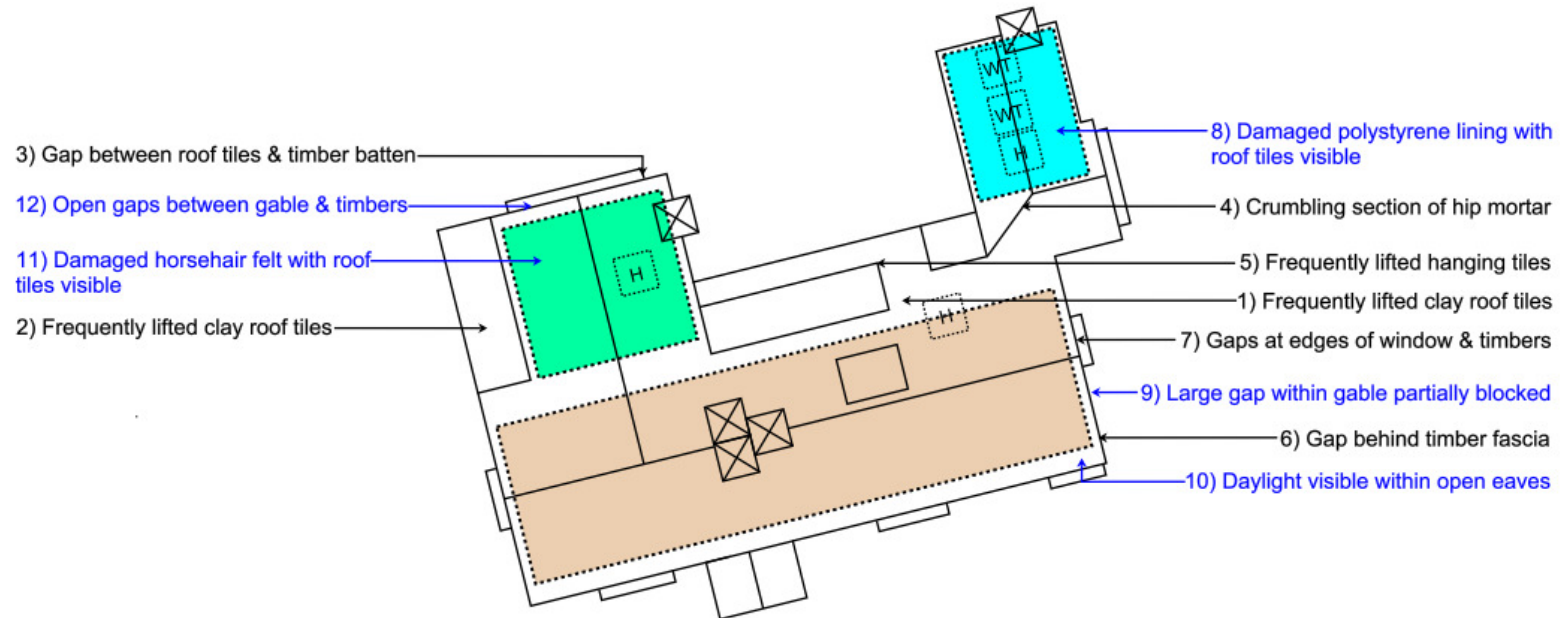
Photograph 26. Roof void 3.



Photograph 27. Torn horsehair felt covered by a wire mesh with roof tiles visible (Roof void 3).



Photograph 28. Gap between timbers and brickwork gable (Roof void 3).



Roof void 1
 Roof void 2
 Roof void 3
 Chimney
 Loft hatch
 Water tank
 n. External target note
 n. Internal target note

Drawn by:	Date:	Scale:	18 Primrose Lane, Wokingham	
JM	March 2024	Not to scale	Preliminary Roost Assessment Plan	

6 DISCUSSION

6.1 Assessment of Potential Roost Suitability

6.1.1 The suburban area surrounding the property with gardens, playing fields, hedgerows, scattered trees and tree lines provides continuous habitat that could be used as a flight-path connecting the property to high-quality foraging habitats at Winnersh Meadows and Dinton Pastures Country Park to the northwest or the railway corridor to the southwest. Furthermore, the search of granted bat mitigation licences identified three species known to be roosting within a 2km radius of the house: common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*) and brown long-eared bat (*Plecotus auritus*).

6.1.1 The house had the following suitable/potential bat access points:

- Lifted and uneven handmade roof tiles, particularly on the rear catslide roof (**Photographs 3, 4 & 5; Target notes 1 & 2**);
- Gaps between the handmade roof tiles and timber battens (**Photograph 6; Target note 3**);
- Crumbling hip mortar (**Photograph 9; Target note 4**);
- Lifted hanging tiles on the rear dormer (**Photograph 12; Target note 5**);
- Gaps behind the timber fascia on the eastern gable of the original cottage and around the edges of timbers (**Photographs 14 & 23; Target notes 6, 7 & 9**);
- Damaged roof linings and daylight visible (**Photograph 17 & 27; Target notes 8 & 11**);
- Open eaves with daylight visible (**Photograph 25; Target note 10**); and
- Gaps between internal rafters and the northern gable (**Photograph 28; Target note 12**).

6.1.2 No evidence of roosting bats was observed during the internal survey. Furthermore, roof void 1 and roof void 3 were small and cluttered which reduces the suitability for void-dwelling bat species such as the locally recorded brown long-eared bat (*Plecotus auritus*). The lack of evidence and limited suitable void space means that the presence of long-eared bat species (*Plecotus* spp.) is considered highly unlikely.

6.1.3 The features associated with the lifted and uneven roof tiles, crumbling hip mortar, lifted hanging tiles and eastern gable offer potential crevice roost sites for small numbers of

crevice-dwelling bats such as the locally recorded common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*). Evidence of crevice roosting species is typically hidden from view in areas such as gaps between tiles and internal linings/insulation.

- 6.1.4** The property has been assigned moderate potential suitability for bats (see **Appendix 1** for potential suitability categories).

6.2 Assessment of Potential Roost Status

- 6.2.1** The potential crevice roost sites in the property are considered to be suitable for use by typically crevice-dwelling bat species such as the abundant and widespread soprano pipistrelle (*P. pygmaeus*) and common pipistrelle (*P. pipistrellus*) and potentially the rarer Brandt's / whiskered bats (*Myotis brandtii* / *mystacinus*). The presence of a maternity colony is considered to be highly unlikely given the absence of roosting evidence and the scale and nature of the features observed.

- 6.2.2** The common pipistrelle (*P. pipistrellus*) and soprano pipistrelle (*P. pygmaeus*) are the most abundant and widespread bats in Great Britain. These species occur in almost any habitat type and are well adapted to the built environments; they are the species most regularly reported roosting in houses and churches (Mathews *et al.* 2018). Brandt's / whiskered bat (*Myotis brandtii* / *mystacinus*) are small *Myotis* species that are widespread and will roost in the same buildings as the much more abundant pipistrelle species (Mathews *et al.* 2018). Roosts supporting these species hold site to county level conservation importance subject to the roost type, i.e. non-breeding roosts supporting individual bat or small groups through to maternity roosts supporting large numbers of female bats (Reason & Wray 2023).

7 IMPACT ASSESSMENT

7.1 Potential Impacts of Development Proposals

Overview

- 7.1.1** The development proposals include a part single-storey and part two-storey rear extension following the removal of the existing dormer window. The impacts of the proposals have been assessed in accordance with the mitigation hierarchy during construction and post development as follows:

Construction Phase

- 7.1.2** The development proposals will involve the direct removal of lifted and uneven roof tiles and hanging tiles on the rear elevation as well as the section of crumbling hip mortar which may result in the damage and/or destruction of roost sites. In addition, the erection of scaffolding could obstruct access to points of bat ingress/egress for the potential crevice roost sites associated with the eastern gable and the northern rear extension. If roosting bats are present in the cottage, the associated noise and vibrations in the construction phase could cause disturbance of bats if present at the time of works. As such, the construction activities could lead to direct/indirect disturbance, injury and/or death of bats.

Post Development

- 7.1.3** In the absence of mitigation and/or compensation, the development proposals could result in the permanent loss of bat roosts. The loss of a roost has potential to significantly affect the local distribution or abundance of a bat species, subject to its conservation status.

7.2 Recommended Actions

- 7.2.1** The development proposals cannot be altered to avoid the potential adverse effects on bats in the house. Therefore, further surveys are recommended to determine the presence or likely absence of a bat roost(s) in the property, in order to be able to assess fully whether the development proposals will have an adverse effect on bats (see **Appendix 3** for further survey rationale). The recommended further surveys are detailed in **Section 8.1** below.

8 RECOMMENDATIONS

8.1 Further Surveys

- 8.1.1** Further surveys are recommended to determine the presence or likely absence of bat roosts in the property, in order to be able to assess fully whether the development proposals will have an adverse effect on bats.
- 8.1.2** A minimum of two dusk emergence survey visits should be undertaken in the period of May to September, with at least one of the surveys between May and August; the survey visits should be spaced at least three weeks apart. These survey visits form the roost characterisation necessary to inform an impact assessment and mitigation strategy.
- 8.1.3** Once roost characterisation is complete, an impact assessment with reference to the mitigation hierarchy will be made. In cases where the adverse effects caused by the development proposals are unavoidable, an application for a European Protected Species (EPS) mitigation licence or the registration of the site under the Bat Mitigation Class Licence (BMCL) would be required to permit the work to proceed lawfully. An EPS mitigation licence or BMCL can be issued by Natural England if the three licensing tests (detailed in **Paragraph 3.3.1**) have been satisfied by the proposals.
- 8.1.4** To satisfy one of the licensing tests, it would be necessary to demonstrate that the 'favourable conservation status' of the bat species using the house is maintained during the construction phase and post development. A mitigation strategy setting out avoidance, mitigation, compensation and enhancement measures would be required to achieve this. Indicative and provisional measures are summarised in **Section 8.2** below.

8.2 Indicative Mitigation Strategy

- 8.2.1** If further surveys and the impact assessment have demonstrated that an EPS mitigation licence or BMCL (if applicable) is required to permit lawful development, the commencement of construction activities impacting the bat roosts would be timed to avoid the periods when bats are most susceptible to disturbance, i.e. winter hibernation period if there is a reasonable likelihood of hibernating bats (mid-November to mid-March) and peak breeding season (May to August) in the unlikely event a maternity colony is present.
- 8.2.2** Alternative roost sites would be made available to bats prior to and throughout the

construction phase by installing at least one woodcrete bat box (suitable for the type of roost/species present) on a suitable mature tree or a pole mount. The bat box should be positioned at least 4 metres from the ground, away from artificial lighting and sheltered from strong wind while being exposed to sunshine (usually south, south east or south west facing).

- 8.2.3** Before the commencement of construction activities impacting the bat roost (i.e. the licensable works), a licensed ecologist or 'Registered Consultant' under the BMCL would provide a toolbox talk to all contractors working on site detailing how bats use buildings, legal protection, working methods (i.e. soft demolition/roof strip by hand), actual and potential roost sites, actions to be taken if a bat is found and personal safety procedures.
- 8.2.4** A soft demolition/roof strip approach to the works affecting the bat roosts would be adopted, i.e. careful removal of roof coverings by gloved hands and handheld tools under the direct supervision of a licensed ecologist or 'Registered Consultant'. In the event that a bat is found during the course of the works, the licensed ecologist or 'Registered Consultant' would capture the bat and transfer it directly to a woodcrete bat box installed in advance.
- 8.2.5** Replacement bat access points and roost sites may need to be created and/or reinstated into the cottage as part of an EPS mitigation licence or BMCL site registration. This compensation should aim for like-for-like roost sites with access points corresponding as closely as possible to the previous locations.
- 8.2.6** Where access is provided for bats, a bituminous roofing felt that does not contain polypropylene/polyethylene filaments (e.g. bitumen felt type 1F) or a non-bitumen coated 'breathable' membrane that has passed the snagging propensity test (e.g. TLX 'Bat Safe') should be used; other non-bitumen coated membranes are harmful to bats and must be avoided.

9 REFERENCES

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APPENDIX 1 – POTENTIAL SUITABILITY CATEGORIES FOR ROOSTING BATS

The categories detailed in **Table 2** below are derived from the '*Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition)*' (Collins 2023) and provide guidance for assessing the potential suitability of buildings (and other structures) for roosting bats. These categories are applied using professional judgement and irrespective of whether the presence of a bat roost has been confirmed during a survey, as additional bat roosts could be present which have not yet been discovered.

Table 1. Categories for potential suitability of buildings (and other structures) for roosting bats.

Potential Suitability	Category Justification
None	A building (or structure) that has no features likely to be used by any roosting bats at any time of the year (i.e. a complete absence of cracks, crevices or voids that could provide suitable shelter).
Negligible	A building (or structure) that has no obvious features likely to be used by roosting bats, but in this case a small element of uncertainty remains as bats will occasionally use small and apparently unsuitable features. This category may also be used where a bat could potentially roost due to one attribute, but it is considered unlikely due to another attribute (e.g. a feature that is subject to constant illumination from artificial lighting).
Low	A building (or structure) that has one or more potential roost sites suitable for opportunistic use by individual bats at any time of the year. However, these potential roost sites for bats do not provide sufficient space, shelter, protection, conditions and/or surrounding suitable habitat to be used regularly or by large numbers (i.e. unlikely to be suitable for a maternity colony and not a classic hibernation site).
Moderate	A building (or structure) that has one or more potential roost sites suitable for regular use by individual bats, or small non-breeding groups, due to sufficient space, shelter, protection, conditions and surrounding habitat. However, these potential roost sites for bats are unlikely to support a roost of high conservation status with regards to the type of roost only (i.e. maternity colonies and classic hibernation sites).
High	A building (or structure) that has one or more potential roost sites suitable for use by large numbers of bats more regularly and for longer periods of time due to sufficient space, shelter, protection, conditions and surrounding habitat. These potential roost sites for bats are capable of supporting high conservation status roosts (i.e. maternity colonies and classic hibernation sites).

APPENDIX 2 – DEFINITION OF BAT ROOST TYPES

The potential suitability of a building in conjunction with any evidence of bat presence is used to provide an initial assessment of likely roost type and importance. The types of roost considered are based on the following Natural England definitions:

- Day roost – a summer resting place used by individual bats, or small non-breeding groups, during the day;
- Night roost – a resting place used by individual bats on occasion, or by a whole colony regularly, during the night;
- Feeding perch – a resting place used by individual bats, or a few individuals, primarily for short periods of feeding during the night;
- Transitional roost – a place used by a few individual bats, or occasionally small groups, for a short period of time upon waking from hibernation or in the period prior to hibernation;
- Maternity roost – a place used by small to large groups of female bats to give birth and raise their young to independence;
- Hibernation roost – a place used by individual bats, or in groups, during winter where there is a constant cool temperature and high humidity; and
- Satellite roost – a place used by a few individuals to small groups of breeding female bats found in close proximity to the main nursery colony throughout the breeding season.

The importance of a bat roost is underpinned by the conservation status of the suspected species (i.e. the distribution/rarity of a species in a specific geographic location) and the type of roost (i.e. not all roosts have the same level of importance in supporting the local bat population). Further roost characterisation surveys may be required to fully determine the importance of a confirmed roost to allow for a robust impact assessment.

APPENDIX 3 – FURTHER SURVEY RATIONALE

In cases where no evidence of use by bats is found during a building inspection but the possibility of their presence cannot be ruled out, further presence/likely absence survey is likely to be required if the development proposals will impact potential roost sites. Emergence surveys are carried out to establish the presence or likely absence of roosting bats in buildings (and other structures) and these are designed in accordance with the '*Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition)*' (Collins 2023) detailed in **Table 3** below.

Table 2. Recommended further survey for establishing presence/likely absence of roosting bats in buildings (and other structures).

Potential Suitability	Further Survey
None	No further surveys are required.
Negligible	No further surveys are required.
Low	A minimum of one dusk emergence survey visit should be undertaken in the period of May to August. However, if all areas (including cracks, crevices and voids) can be thoroughly inspected and no evidence of use by bats is found, then emergence surveys may not be required. In cases where a complete inspection cannot be carried out, professional judgement and proportionality should be applied when assessing the impacts of the development proposals.
Moderate	A minimum of two dusk emergence survey visits should be undertaken in the period of May to September, with at least one of the surveys between May and August; the survey visits should be spaced at least three weeks apart.
High	A minimum of three separate dusk emergence survey visits should be undertaken in the period of May to September (inclusive), with at least two of the surveys between May and August; the survey visits should be spaced at least three weeks apart.

In cases where the PRA and/or further survey establishes the presence of roosting bats in a building (or structure), this will likely trigger the need for roost characterisation to collect sufficient information to inform the impact assessment and mitigation strategy. The roost characterisation comprises information collected during the PRA, emergence surveys and by other methods, such as DNA analysis of bat droppings, and ultimately aims to determine the bat species roosting; the number of bats the roosts support; the roost access points; the locations of the roosts and the types of roost present. This information is crucial when applying for planning permission and/or a European Protected Species mitigation licence.