Hellier Parker Ecological Services

'NB' MISTY BLUE, DROITWICH BOAT CENTRE, HANBURY ROAD, DROITWICH WR9 7DU

Tel: 07966 401053 E-mail: karen.parker@live.co.uk

NETHERCOTT COTTAGE, NEEN SAVAGE, SHROPSHIRE

Bat Roost & Great Crested Newt Assessment Report

October 2023

Client: Mr & Mrs Freeman

NB. Information on legally protected, rare or vulnerable species may appear in ecological reports. In such cases it is recommended that appropriate caution be used when circulating copies.

Internal ref: FRE23.01

CONTENTS

APPENDICES

1. INTRODUCTION

1.1 Objectives

The client, Mr and Mrs Freeman, are planning to undertake renovation and extension works to Nethercott Cottage, Neen Savage, Cleobury Mortimer, Shropshire, DY14 8LA. Ecological survey work was commissioned with the following objectives:

- to undertake a preliminary building inspection for the presence, evidence and potential suitability for bats (*Rhinolophidae* or *Vespertilionidae*);
- to undertake dusk emergence bat surveys to establish presence or absence; and if present to characterise the roost;
- to assess the potential impacts of the proposals upon bats, unmitigated and mitigated;
- to undertake a preliminary habitat inspection for the presence, evidence and potential suitability for great crested newts *Triturus vulgaris*; and
- to provide a written report of the study findings, including recommendations as applicable.

1.2 General Site Description

An aerial photograph and plates of the site are given in the Appendix. It is centered on National Grid Reference SO 6763 7860 at a height of approximately 144m A.O.D. The site area is 0.13ha. The site is located in the hamlet of Nethercott, approximately 2.5 kilometers north of Cleobury Mortimer. The surrounding land use is agricultural with pasture and arable, small pockets of broadleaved-woodlands and a moderate amount of hedgerows. There are no significant nearby waterbodies. The house is a grade II structure on Historic England's National Heritage List. The gardens also contain sheds and a store.

2. BACKGROUND INFORMATION ON BATS

2.1. Legislation & Policy

The Wildlife and Countryside Act 1981 (as amended) provides protection for great crested newts (GCN) and all British species of bat from intentional killing, injury or capture, protection for their places of shelter, protection, including obstruction of access to and/or disturbance whilst occupying a place of shelter or protection. The Countryside and Rights of Way Act 2000 reinforces the protection of GCN and bats by including the concept of 'reckless' into the offences as well as significantly increasing penalties. The Conservation of Habitats and Species Regulations 2017 (as amended in 2019) includes the above offences and also includes any disturbance which is likely to impair a European Protected Species' ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate or to affect significantly the local distribution or abundance of the species to which they belong. The Environment Act 2021 also relates to licencing of actions.

Derogation from the legislation can be licensed by Natural England to render lawful activities that would otherwise be illegal under the legislation described above. Licences can be issued for reasons of overriding public interest providing there is no other satisfactory solution and the activities granted by the licence will not be detrimental to the survival of any population of the species concerned. If planning consent/listed building consent/faculty consent is required Natural England will determine site specific license applications only after the full consent has been granted. Natural England may add conditions to a licence or may refuse issuing a licence.

In a planning policy context, a biodiversity duty to enhance and conserve is imposed on public authorities by the Natural Environment and Rural Communities Act 2006 (as

amended), including putting together policies and objectives. In addition to local planning policy, national planning policy is provided through the National Planning Policy Framework (GOV.UK, 2023), through Circular 06/05: Biodiversity and Geological Conservation (GOV.UK, 2005), and through National Planning Practice Guidance Natural Environment (GOV.UK, 2019) (para 10-35). Planners are required to consider protected species as a material consideration when assessing a development proposal, including validation. A Code of Practice is provided in the British Standard on Biodiversity BS42020 (BSI, 2013). The UK Biodiversity Action Plan lists GCN, the soprano pipistrelle, greater and lesser horseshoe, barbastelle, Bechstein's, noctule and brown long-eared as Priority Species (DEFRA, 2007).

2.2. Biology

Bats

The seventeen breeding species of bat in the British Isles are insectivorous. Bats fly and feed in the dark using echolocation. Bat roosts serve different purposes and different conditions are required for hibernation, mating and breeding. Other roosts may be used as overnight stops during summer feeding. They may use buildings, caves, mines, hollow trees *etcetera.* Female bats gather in maternity roosts in May to July to give birth and rear their young. The seasonal changes in roost sites means that a roost may be unoccupied for a large part of the year, however it is still protected by law when unoccupied. Bats feed where insects are plentiful, especially around trees, woodlands and water bodies. They may breed at one to five years old; the young can fly at three weeks old and are weaned at six weeks. They may live up to thirty years. Threats include habitat loss and degradation, loss of roost sites, poisoning from timber treatment, predation, and persecution by man.

GCN

GCN will use ponds for breeding and laying eggs in spring, juveniles and adults also the surrounding terrestrial habitat throughout the year. Full GCN surveys can only be

undertaken by surveying potential breeding ponds during the spring. Because GCN are very difficult to find on land, results from terrestrial surveys are unreliable. The suitability of a pond and its habitat can be assessed to give an indication of the likelihood of GCN using the area.

3. METHODOLOGY

3.1. Background Data Search

A desktop online search was conducted on 5 September 2023 including aerial photography, the government's MAGIC website managed by Natural England (designated and non-designated sites, bat mitigation licence records), the National Biodiversity Network (NBN) Gateway website GCN and bat records.

3.2. Site Surveys

GCN

A nearby pond was identified as requiring further assessment for its potential to support GCN. A level 1 great crested newt license holder (K Parker, Licence WML-CL08 2016-22309) conducted a Habitat Suitability Index assessment of the pond on 7 September 2023 in line with current guidance by Oldham *et al*. (2000), as adapted by Brady. This assessment takes into account regional location, pond size, frequency of drying out, water quality, shade, presence/ absence of fish, waterfowl, number of ponds in the local area, surrounding terrestrial habitat and aquatic plants. Each component was evaluated according to a prescribed index, then an overall suitability index was calculated.

Bats

Preliminary Buildings Inspection - A licensed bat worker (K Parker) conducted a building inspection of the structure on 7 September 2023 in line with guidance by Collins (2016). A thorough search was made of the buildings for bats, their droppings, food remains or characteristic grease marks at potential exit/entrance points. The interior and exterior of the buildings were searched, paying attention to places where droppings can gather undisturbed, and also under potential access points such as

loose tiles, or broken ventilation bricks. Ladders, an endoscope and binoculars were used where appropriate.

Ground Level Tree Roost Assessment - A licensed bat worker (K Parker) surveyed the site on 7 September 2023 in line with current guidance by Collins (2016). The trees were surveyed during the daytime for signs which might indicate the presence of bats or their resting places, including insect remains, droppings, grease marks, urine stains, the presence of live or dead bats and smoothing of bark, and also the trees potential to have roosting bats. Ladders, an endoscope and binoculars were used where appropriate.

Potential roost features (PRFs) - Trees and structures with PRFs were categorized for roost potential or having a known roost, according to the following standardised criteria (Collins, 2016).

Category	**Descriptive**
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	One or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions 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 or hibernation).
Moderate	One or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only).
High	A building or 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 and surrounding habitat.
Known Roost	Building or structure currently supporting bats (based on presence of bats, or evidence of use such as droppings, carcasses etc.).

Table 3.1: Guidelines for Assessing the Potential Suitability of Proposed Development Sites For Bats Based on the Presence of Habitat Features (After Collins 2016).

The external weather conditions for the building inspection survey and ground level tree roost assessment survey were suitable being dry, temperature 22ºC, wind Beaufort 1, humidity 70% and cloud cover 4/10.

Dusk Emergence Surveys - Two dusk surveys were conducted on 5 and 20 September 2023 to ascertain bat emergence and/or return from the building. Two surveyors on each occasion used bat detectors and infra-red night vision aids to observe, listen for and record bat activity, with an emphasis on recording numbers, species where possible, and activity type, time and location, in order to determine any potential roost type and foraging activity in the area. The evening survey started approximately 15 minutes before sunset and continued for 1 hour and 30 minutes past sunset.

5 September 2023 Dusk Survey

Timings: Local sunset 19.49. Start 19.34. End 21.19.

Weather: External start temp. 24ºC, end temp. 18ºC, start humidity 70%. Wind Beaufort 2, cloud 1/10. Dry throughout.

Surveyor 1: M Glyde. Echometer Touch & Batbox Duet detector, manual species identification. Nightfox Whisker night vision aid, additional infra-red flood lights. Positioned to view north-eastern aspect.

Surveyor 2: K. Parker. Anabat Walkabout & Batbox Duet detector, manual species identification. Sony AX33 infrared camcorder with 2x Night Fox XB5 850nm spots & 2x 900 lumen floodlights. Positioned to view south-western aspect.

20 September 2023 Dusk Survey

Timings: Local sunset 19.14. Start 18.59. End 20.44.

Weather: External start temp. 17ºC, end temp. 13ºC, start humidity 72%. Wind Beaufort 1, cloud 5/10.

Surveyor 1: N McLean. Anabat Walkabout & Batbox Duet detector, frequency

division and heterodyne, manual species identification. Positioned to view north-western aspect.

Surveyor 2: K. Parker. Anabat Walkabout & Batbox Duet detector. Sony AX33 infrared camcorder with 2x Night Fox XB5 850nm spots & 2x 900 lumen floodlights. Positioned to view southern aspect.

3.3. Personnel

The building inspection survey was conducted by K Parker BSc (Hons), MSc, MCIEEM, an ecologist of thirty years experience, holder of a Class II survey licence for bats for twenty-five years, Registered Consultant for Bat Class Mitigation Licence, holder of multiple European Protected Species bat mitigation licences, Chartered Institute of Ecology and Environmental Management 'accomplished' competency level for bats. Emergence surveys were conducted by Class II survey licence holders K Parker licence CLS0168, N McLean licence CLS02533 and M Glyde licence CLS2012-3679, each with over twenty years experience.

4. RESULTS

4.1. Background Data Search

The MAGIC website search of a 2 km radius showed there are no sites designated for nature conservation, including National Nature Reserves, Local Nature Reserves, Sites of Special Scientific Interest, or Ramsar Sites. A search was made on MAGIC for Special Areas of Conservation designated for bats within 6km, there are none within this radius.

The MAGIC website search of a 2 km radius showed granted European Protected Species mitigation licences for bats as follows:

- Resting place of common pipistrelle *Pipistrellus pipistrellus*. Licence issued 2009. Distance 1.4km.
- Resting place of common pipistrelle, soprano pipistrelle *Pipistrellus pygmaeus* and brown long-eared *Plecotus auritus*. Licence issued 2013. Distance 1.2km.

The National Biodiversity Network Atlas has no records for mammals for the site itself, or within 0.5km.

The MAGIC website search of a 2 km radius showed there were no granted European Protected Species mitigation licences for GCN within 2km, nor any records from the strategic GCN pond survey of 2017-19. The National Biodiversity Network Atlas has a record for GCN from May 2002 at a distance of 12m east from the site boundary, (50m from the cottage).

4.2. Great Crested Newts

GCN may move typically 250m from a pond. Within this search zone, there was one pond identified in the data search, located 50m from the cottage building. The landowner kindly gave consent for access to the pond. The landowner had found GCN in the past and submitted the biological record found in the data search from 2002, though had not seen GCN since. It has been stocked with rudd in the interim. The pond is known to be filled by agricultural land drainage, and has held less water in the recent years, drying out annually. he pond was dry at the time of survey, with common duckweed *Lemna minor* and water mint *Mentha aquatica* indicating a past standing water pond area of oval shape 10m long and 4m wide. The pond is densely shaded by trees. The pond area was searched by hand, no amphibians were found. The Great Crested Newt Habitat Suitability Index (HSI) results are presented in the table below.

Table 5.1 Great Crested Newt Habitat Suitability Index

Criteria	**Results**	**Suitability Index**
Location	Zone A	1
Pond area	40m^2	0.05
Drying frequency	Annually	0.1
Water quality	Poor	0.33
Shade	90%	0.4
Fowl	absent	1
Fish	absent	1
Number of ponds	Pond number in km^2 =7/pi	0.8
Terrestrial habitat	moderate	0.67
Macrophytes	80%	1
HSI score (geometric mean)	**-**	**0.45**

Interpretation of the HSI score was completed using a categorical scale, developed by Lee Brady (undated) to define pond suitability for great crested newts on a categorical scale:

HSI Pond suitability
<0.5 = poor
0.5 – 0.59 = below average
0.6 – 0.69 = average
0.7 – 0.79 = good
> 0.8 = excellent

The pond near Nethercott Cottage scores as **'poor' habitat suitability for GCN.**

4.3. Bats

4.3.1. Preliminary Building Inspection

Cottage

The cottage is recorded as dating from the seventeenth century. It has a timber frame with stone and brickwork. It is a two storey rectangular building, covering 72 square meters with a very small single storey brick and stone Victorian extension on the side.

The roof of the cottage is rectangular, pitched and clad in clay tiles. There is potential access for bats under uneven tiles, around lead flashing for the two chimneys and where a couple of tiles have slipped. Along the eaves, the rafters can be seen to protrude with gaps between the rafters and the plywood boards serving the purpose of soffit boarding. These gaps offer potential access for bats at the eaves, as do the hanging wooden shingles on the upper part of the eastern gable wall. The small single storey extension has a pitched roof with clay tiles. This will have a small roof void to which there is no access hatch.

There is a roof void across the cottage with an internal divide, though this has a large diamond shaped gap which would allow bats to pass to fly freely between the sections. The roof is lined with plastic sheeting which has sagged or come unfixed in a couple of locations, exposing the underside of the tiles. The floor has glass fibre insulation. Several slipped tiles at the eastern end allow light ingress. This gap has been used by jackdaws to enter and build a large nest, evidenced by the debris and an old egg. There are potential roost features present, comprising the roof void and a small number of gaps in the roof tiles (photographs provided in the Appendix). There were approximately **300 droppings** present throughout the roof, with a cluster under the ridge board, one third of the length from the western end. The species was identified by DNA analysis of droppings (multi-species analysis by Ecotype Genetics), confirming a **brown long-eared roost.** The internal temperature was 24^{o}C with a humidity of 70%. The roost area measures approximately 72 m^{2}.

Sheds and Store

Within the garden are three sheds. The southern-most has timber walls lined with polystyrene and a bitumen roof. The second has timber walls, uninsulated, and a bitumen roof with one part open-fronted, used as a wood store. The third has breeze block walls and a corrugated roof. To the north is an open-sided store, made of posts and two wall of corrugated metal. **No bats or evidence of bats** was found in the sheds or store. These were all assessed as having **negligible potential** for roosting bats being very draughty.

4.3.2. Ground Level Tree Assessment

Two trees within the planning application boundary were identified by the client as requiring removal, a large sycamore (T1) and a common hawthorn (T2). **Neither tree offered any potential for roosting bats**. Plates and a plan showing the location of the trees are provided in the Appendix.

4.3.3. Dusk Emergence Surveys

Bats were observed emerging from the cottage on the first of the two dusk emergence surveys. These numbered nine, using four access locations. Apart from one bat which emerged from the roof tiles centrally on the southern aspect, these emerged from the eaves on the southern aspect, from eaves above the central window, from eaves above the western window and from eaves between these two windows. Locations are shown in the Appendix on plate and a plan. The first two and last two bats were non-echolocating but their flight pattern was characteristic of the brown long-eared. The remainder gave calls characteristic of brown long-eared bats.

4.3.4. Habitat for Foraging & Commuting

The site offers typical garden habitat with lawn, shrubs and trees, suitable for foraging habitat. The quiet lane to the east is wooded and also offers poetically suitable foraging habitat.

The dusk surveys confirmed that the garden and lane are used frequently for foraging. Species foraging included common pipistrelle, brown long-eared, soprano pipistrelle and Natterer's Myotis nattereri. Common pipistrelle were observed commuting north to south down the lane.

4.4. Limitations

Access conditions for the building inspection, tree assessment and emergence survey were good. The timing was late in the season due to the date of instruction. Standard survey guidelines specify emergence surveys within the period May to end September, but limited to one in September. Both surveys were conducted in September, therefore one of the two was sub-optimal, however justification for validity can be offered in that

the weather in September was exceptionally mild, the first emergence survey was very near to the start of the month, with a starting temperature of 24ºC and good quality information was obtained from the surveys.

5. EVALUATION

5.1. GCN

The one pond within the area of search had a historical record for GCN. This pond was assessed for habitat suitability for great crested newts and was **classified as 'poor' using the Habitat Suitability Index.** This was due to the small size, frequency of drying and large amount of shade. No further survey works is recommended.

5.2. Bats

5.2.1. Roost Assessment

The cottage roof void offers a suitable uncluttered environment for bats to fly internally before emerging fully, with a couple of potential bat access gaps in the tiles and at the eaves. There is also potential for crevice dwelling bat species to roost under the roof tiles. Therefore based on standard guidelines (Collins 2016), the building is considered to have **high potential** to support roosting bats due to the nature of its construction. The evidence of **300 bat droppings** identified as brown long-eared droppings, in addition to the observation of **nine emerging brown long-eared** bats indicates the likely presence of a **maternity roost of brown long-eared bats.** During the emergence surveys the **access points were identified as being under the eaves centrally on the southern aspect and from nearby roof tiles.** No evidence was found of bats using the small single storey extension.

The sheds, store and two trees to be removed offered negligible potential for roosting bats.

Brown long-eared

Usually found roosting in open attics and barns, but occasionally in crevices. The UK Bat Mitigation Guidelines (2023) note the brown long-eared in the southwest of England to be considered 'widespread' and the conservation significance of a maternity roost of low numbers such as this is of **district importance**.

5.2.2. Habitat for Foraging & Commuting

The garden and adjacent lane are of local value for foraging bats, of the more widespread species.

5.3. Impact Assessment, Mitigation & Recommendations

The potential impacts of the proposals were assessed with reference to the architect's drawings (Nick Joyce Architects Ltd, Drwg. 2565-02 *Plans and Elevations as Proposed*, September 2023). The works entail the demolition of the small single storey extension, the sheds and removal of the sycamore and hawthorn trees, all being replaced with a two storey extension linked to the existing cottage by a glass link corridor on the western aspect. Also the demolition of the store and its replacement with a new garage with office space over.

GCN

There are no **predicted impacts on GCN** from the proposals during the construction or operational phases.

Bats

There is no predicted impact on bats from the proposals in the construction phase. There is no evidence of bats using the single storey extension to be demolished. The new extension will not tie in with the existing roof of the cottage. There will no physical change to the structure of the cottage roof and therefore no change to the structure of the brown long-eared roost. The bat access points to the roost are not near the proposed area of works and will be unaffected by the proposals. The roost is sufficiently distant from the area of works that it would not be disturbed by the contractors.

During the operational phase there is likely to be increased illuminance from the glass link corridor, transmitted via the glazed walls. Generally, increased illuminance of a bat roost can cause disturbance, and may result in bats deserting a roost. Light falling on an access point will at least delay bats from emerging and this shortens the amount of time available to them for foraging. The associated flight path to and from the access point is just as valuable and vulnerable as the roost itself. Some species are less light tolerant than other species, including the long-eared bats. On assessment of the site in question, it can be noted that the corridor is slightly offset to the north. Taking this into account, along with the physics of light travelling in straight lines, there is no predicted increased illuminance on the ecologically sensitive area, i.e. the front aspect of the cottage, where the known bat access points are located. Therefore there is **no predicted impact on roosting bats**. Further surveys and illuminance contour modelling are not recommended. There would also be no requirement for a European Protected Species Mitigation Licence.

As the presence of wildlife and site conditions can change over time, it is advised that this survey data and report remain valid to inform the impact of works proposals for one active season before resurvey is required. The level of resurvey would be determined by the findings of the first update site visit.

Good practice recommendations are still relevant as follows:

As exterior lighting can disturb bats from foraging and reduce their feeding efficiency, **no additional exterior lighting is proposed.** Should this be reconsidered in the future it is recommended as good practice that potential impacts from lighting are avoided/minimised following the *Guidance Note 08/23 Bats and Artificial Lighting at Night* (BCT/IPL 2023).

As with all built structures there does remain a potential for missed evidence as some bats are crevice dwelling species. It is advised that should any bats be found unexpectedly during the building works, that work must cease immediately and a licensed ecologist be consulted. The situation would then be assessed considering the evidence. This may affect any work schedule.

5.4. Enhancements

Planning policy gives a duty to planning authorities to seek biodiversity enhancements, therefore potential enhancements have also been recommended.

It is recommended that **1x integrated bat box** is included in the new extension to provide a long-term roosting opportunity, using the 'Habibat Bat Box' (details in Appendix). These boxes are proven, discrete, require no maintenance and are suitable for a variety of bat species. A suitable location would be on the new southern gable end, positioned under the apex.

5.5. Schedule of Recommendations/Method Statement

1	A copy of these recommendations is to be made available by the client to the contractor in advance of any work being carried out.

2	There is no requirement for a Natural England bat mitigation licence, timing constraints, toolbox talk, or supervision by ecologist of the works.
3	As with all built structures there does remain a potential for missed evidence as some bats are crevice dwelling species. It is advised that during the repair works **should any further bats be found, that work must cease immediately and a licensed ecologist be consulted**. The situation would then be assessed considering the evidence. This may affect any work schedule. Karen Parker 07966 401053 karen.parker@live.co.uk
4	As exterior lighting can disturb bats from foraging and reduce their feeding efficiency, **no additional exterior lighting is proposed.** Should this be reconsidered in the future it is recommended as good practice that potential impacts from lighting are avoided/minimised following the *Guidance Note 08/23 Bats and Artificial Lighting at Night* (BCT/IPL 2023).
5	**1x integrated bat box** such as the 'Habibat' (details in Appendix). The optimum location would be on the new southern gable wall, positioned just under the apex.

6. REFERENCES

Bat Conservation Trust & Institute of Lighting Professionals UK (2023). *Guidance Note 08/23 Bats and Artificial Lighting at Night.* London, UK.

British Standards Institution (2013). *BS42020:2013 Biodiversity. Code of practice for planning and development.* British Standards Institution, London.

Collins, J. (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edn)*. BCT London.

Department for Environment, Food and Rural Affairs (2007). *Conserving Biodiversity – The UK Approach*. London, UK.

JNCC, (1999). *The Bat Workers' Manual.* Eds. A.J. Mitchell-Jones & A.P. McLeish. JNCC, Peterborough, UK.

Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155.

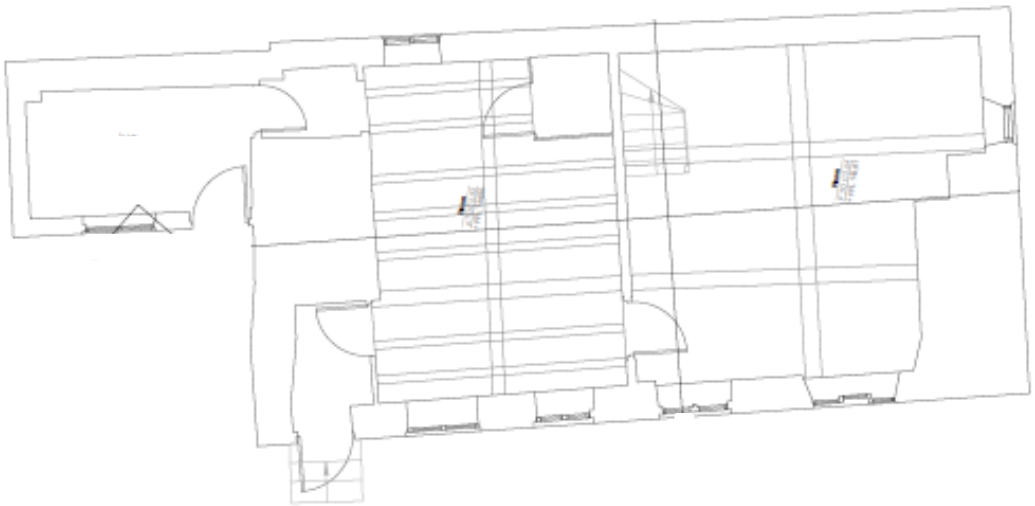
Reason P. & Wray, S. (2023). *UK Bat Mitigation Guidelines: A Guide to Impact Assessment, Mitigation and Compensation for Developments Affecting Bats*. CIEEM, Ampfield.

APPENDICES

Figure 1: Aerial Photograph
Figure 2: Location
Figure 3: Building Layout
Figure 4: Survey Results
Plates
DNA Analysis Results
Raw Survey Data
Proposed Mitigation, Compensation & Enhancement Features

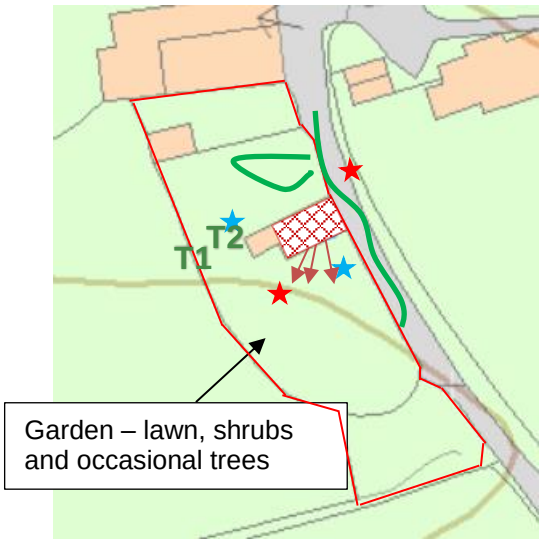
Figure 1: Aerial Photo – Nethercott Cottage **N ▲**

Figure 2: Location – Nethercott Cottage **N ▲**



N▲ 5m

Figure 3: Building Layout – Nethercott Cottage



Key N▲

- survey area
- dusk surveyor positions dusk surveys 05.09.23
- dusk surveyor positions dusk surveys 20.09.23
- BLE emergence 05.09.23
- area of brown long-eared roost
- frequent foraging flightlines
- T1 tree to be removed

Figure 4: Survey Results – Nethercott Cottage

PLATES

Plate 1: Southern aspect.

Plate 2: Eaves on southern aspect.

Plate 3: Western aspect.

Plate 4: Northern aspect.

Plate 5: Eastern aspect.

Plate 6: Roof void, towards eastern end.

Plate 7: Roof void, towards western end.

Plate 8: Bat droppings in roof void, brown long-eared bat.

Plate 9: Jackdaw nest in roof void.

Plate 10: Garden sheds.

Plate 11: Open sided store in garden.

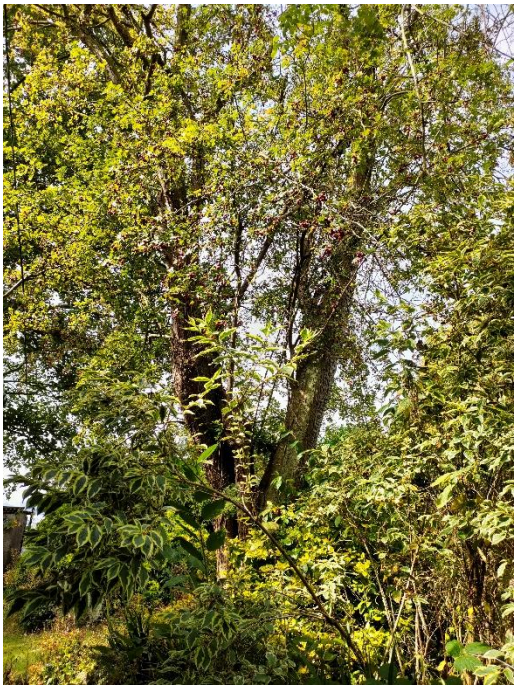


Plate 12: Sycamore tree (T1).

Plate 13: Hawthorn tree (T2).

Plate 14: Nearby pond.

Plate 15: Infra-red aid field of view & illuminance, north-east aspect 05.09.23.

Plate 16: Infra-red aid field of view & illuminance, south-west aspect 05.09.23.

Ecotype Genetics

Results

Sample ID: EG-1204-1

Sample information:

Sample type: Faecal
Species group: Bats
Suspected species: BLE
Site Location: DY14 8LA
Comments: Nethercott Cottage roof void

Laboratory information:

DNA Extraction Code: EG-2023-1495
Identification method: qPCR
Analysis Procedure Notes:

Laboratory Comments:
None

Species Identified:

Species 1: Plecotus auritus (Brown long-eared bat)
qPCR Ct Value: 18

Ecotype Genetics Limited, Sussex Innovation Centre, Science Park Square, Falmer, Brighton, BN1 9SB

e: orders@ecotypegenetics.co.uk t: 01273704505 w: ecotypegenetics.co.uk

Page 2 of 3

DNA Analysis Results

RAW SURVEY DATA

5 September 2023 Dusk Survey

Timings: Local sunset 19.49. Start 19.34. End 21.19.

Weather: External start temp. 24°C, end temp. 18°C, start humidity 70%. Wind Beaufort 2, cloud 1/10. Dry throughout.

Surveyor 1: M Glyde. Echometer Touch & Batbox Duet detector, manual species identification. Nightfox Whisker night vision aid, additional infra-red flood lights. Positioned to view north-eastern aspect.

Surveyor 2: K. Parker. Anabat Walkabout & Batbox Duet detector, manual species identification. Sony AX33 infrared camcorder with 2x Night Fox XB5 850nm spots & 2x 900 lumen floodlights. Positioned to view south-western aspect.

Table 1.1: Activity Results 5 September 2023, Surveyor 1 observing north-eastern aspect.

Time	*Species*	*Activity Details*
20.04	Soprano pipistrelle	Pass N-S down lane
20.05	Soprano pipistrelle	Pass N-S down lane
20.06	Soprano pipistrelle	Pass N-S down lane
20.10	unidentified	Pass from front of house. Non-echolocating.
20.14	Soprano pipistrelle	Pass S-N up lane
20.19	Common pipistrelle	Audio only
20.21	Soprano pipistrelle	Audio only
20.22	Myotis sp.	Pass S-N up lane, audio only
20.23	Myotis sp.	Pass S-N up lane, audio only
20.26	Common pipistrelle	Pass S-N up lane, audio only
20.36	Common pipistrelle	Pass S-N up lane, audio only
20.52	Common pipistrelle	Pass S-N up lane, audio only
21.00	Natterer's	Pass S-N up lane, audio only
21.03	Noctule	High pass

Table 1.2: Activity Results 5 September 2023, Surveyor 2 observing south-western aspect.

Time	*Species*	*Activity Details*
20.06	Soprano pipistrelle x3	Commuting E to W with social calls.
20.08	Soprano pipistrelle	Pass E to W
20.09	Soprano pipistrelle	Pass

20.12-16	Soprano pipistrelle	Constant foraging
20.17	Common pipistrelle	Pass from road to garden
20.18	Common pipistrelle	Pass W to E
20.20	Brown long-eared	Foraging
20.21	Unidentified bat	Pass, non-echolocating
20.21	Common pipistrelle	Foraging
20.22	Soprano pipistrelle	Foraging
20.23	Soprano pipistrelle	Pass N to S
20.24	Common pipistrelle	Pass E to W
20.26	Common pipistrelle	Foraging circuits in garden
20.26	Brown long-eared	Foraging in garden
20.29	Soprano pipistrelle	Foraging
20.31	Noctule	Audio only
20.35	Myotis sp	Audio only
20.36	Noctule	Audio only
20.37	Common pipistrelle	Audio only
20.37	**Likely brown long-eared**	**Emerged from eaves above central window, non-echolocating**
20.39	**Likely brown long-eared**	**Emerged from roof tiles above central down pipe, non-echolocating**
20.40	Common pipistrelle	Foraging
20.43	Common pipistrelle	Social calls
20.47	Brown long-eared	Pass
20.48	**Brown long-eared x2**	**Emerged from eaves above central window**
20.54	**Brown long-eared x2**	**Emerged from eaves above western window**
21.00	Brown long-eared	Pass
21.02	**Brown long-eared**	**Emerged from eaves above central window**
21.04	**Likely brown long-eared**	**Emerged from eaves between central and western window, non-echolocating**
21.11	**Likely brown long-eared**	**Emerged from eaves above western window, non-echolocating**

20 September 2023 Dusk Survey

Timings: Local sunset 19.14. Start 18.59. End 20.44.

Weather: External start temp. 17ºC, end temp. 13ºC, start humidity 72%. Wind Beaufort 1, cloud 5/10.

Surveyor 1: N McLean. Anabat Walkabout & Batbox Duet detector, frequency division and heterodyne, manual species identification. Positioned to view north-western aspect.

Surveyor 2: K. Parker. Anabat Walkabout & Batbox Duet detector. Sony AX33 infrared camcorder with 2x Night Fox XB5 850nm spots & 2x 900 lumen floodlights. Positioned to view southern aspect.

Table 1.3: Activity Results 20 August 2023, Surveyor 1 observing NW aspect.

Time	*Species*	*Activity Details*
19.41	Common pipistrelle	Pass E to W
19.46	Common pipistrelle	Audio only
19.46	Common pipistrelle	Audio only
19.52	Common pipistrelle	Audio only, foraging
19.59	Common pipistrelle	Audio only
19.59	Common pipistrelle	Audio only
20.02	Common pipistrelle	Audio only, foraging
20.07	Common pipistrelle	Audio only, foraging in garden
20.10	Common pipistrelle	Audio only foraging in garden
20.11	Common pipistrelle	Audio only, very brief
20.19	Common pipistrelle	Audio only, foraging
20.20	Common pipistrelle	Audio only, very brief
20.26	Common pipistrelle	Audio only
20.27	Common pipistrelle	Audio only
20.28	Common pipistrelle	Audio only
20.36	Common pipistrelle	Audio only

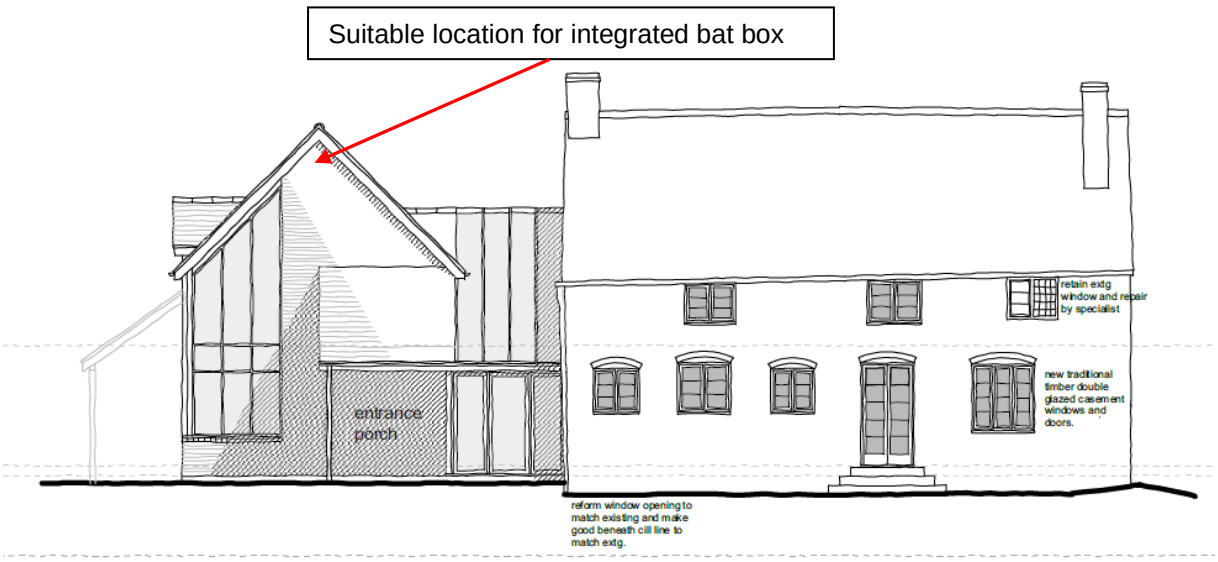
Table 1.4: Activity Results 20 September 2023, Surveyor 2 observing S aspect.

Time	*Species*	*Activity Details*
19.26	Unidentified bat	Pass, non-echolocating
19.36	Common pipistrelle	Pass along lane
19.37	Common pipistrelle	Pass over roof, social calls
19.38-40	Common pipistrelle	Foraging along lane
19.41-48	Common pipistrelle x2	Foraging and social calls, along lane and in garden
19.50-55	Common pipistrelle	Foraging and social calls, along lane and in garden
19.55-20.08	Common pipistrelle	Foraging and social calls, along lane and in garden
20.08	Brown long-eared	Pass
20.08-11	Common pipistrelle	Foraging and social calls, along lane and in garden

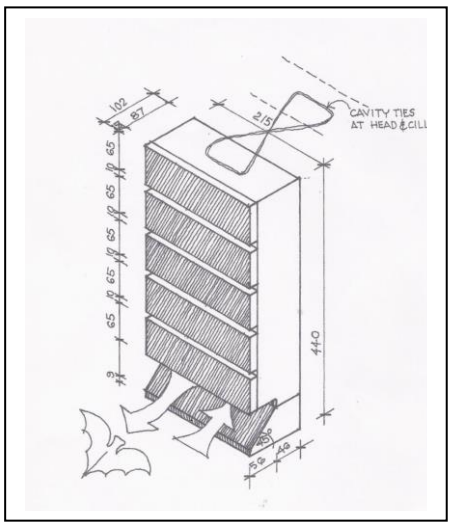
20.18	Brown long-eared	Pass, audio only
20.20	Common pipistrelle	Pass, audio only
20.22-24	Common pipistrelle	Pass, audio only
20.25-32	Common pipistrelle	Pass, many social calls, audio only
20.37	Brown long-eared	Pass, audio only

PROPOSED MITIGATION, COMPENSATION & ENHANCEMENT FEATURES

(to be read in conjunction with Section 5.4):



South elevation



Habibat Integrated Bat Box.

Available in a range of finishes including suitable for render or inclusion in cladding. Allows bats access into box but not into the dwelling area of the property (Available from http://www.habibat.co.uk)

Hellier Parker Ecological Services was founded in 2000 to provide high quality professional services to meet an increasing market demand in applied environmental science, especially ecology. Clients include charities and NGOs, private developers, statutory undertakers, government bodies and local planning authorities.

Karen Parker (Principal) has thirty years of consultancy experience. She holds a BSc (Hons) degree in Plant and Animal Sciences and an MSc with distinction in Environmental Impact Assessment. She is a member of the Chartered Institute of Ecology and Environmental Management. Karen has extensive experience in the UK, and worked on projects overseas (Hong Kong, New Zealand, Australia, Eire, Isle of Man). She has interests in bats and mitigation licensing, habitat surveys, protected species, ecological impact assessment, river restoration and enhancement schemes.

- Protected species – surveys and mitigation strategies & licensing - bats, reptiles, water voles, amphibians inc. great crested newt, etc.
- Habitat surveying - Phase I Surveys, UKHabs, NVC, hedgerows, River Corridor & River Habitat Surveys.
- Ecological Impact Assessment - surveys, assessments, mitigation strategies.
- River & wetland enhancement and restoration - ecological advice from feasibility stage through to detailed design.
- Nature Conservation Management Plans.
- Specialist planning advice to local authorities.
- Expert witness at Public Inquiries and Planning Appeals.
- Overseas consultancy experience.