

BAT ROOST ASSESSMENT SURVEY & MITIGATION REPORT

Site name: 61 Balmore Drive, Caversham, Berkshire
RG4 8NN

Commissioned by: Ms Laura Gough

Date: Ver. 2.0, 5-7-21 (1.0, 8-12-20)



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Executive Summary

1. A scoping / stage one (bat roost) daytime assessment for protected species and primarily bats in buildings was undertaken at parts of the property (residential building at 61 Balmore Drive, Caversham, Berkshire RG4 8NN), in a suburban location, during the autumn of 2020. A full preliminary survey, primarily for bat issues in this area and immediate vicinity as an ecological appraisal, was carried out to best practice guidelines drawing evidence from aerial photographs, desk-based tools and typical associations from the habitats present on the site and surrounding land.
2. In passing, and in the immediate vicinity of the site, evidence for the presence of protected species was sought searching for signs of nesting birds etc, while primarily, as a Provisional Roost Assessment survey (PRA), the specific parts of the relevant structure were examined for the potential to support roosting bats. An assessment was made of any potential for the proposed work at the site to harm or disturbed protected species or their habitats.
3. Of the structure surveyed signs of a bat use including within the interior of the loft of the house building were observed, in the form of a modest number of identifiable bat faecal droppings. No other protected species groups were identified, although this was only a one-off scoping survey and not a concerted species survey.
4. Signs of a probable pipistrelle type bat use or visitation of the site for roosting at least at some time in the past were identified.
5. Obvious opportunities exist for the access of bats into the roof and loft void via lifted flashing, missing mortar at ridge, and possibly other structural features such as tiles and extensively degraded bitumen felt, some of which would be affected by the current proposals and we consider that a contemporaneous presence of bats using those features would not necessarily have left signs evident even to an experienced surveyor.
6. It was a conclusion of the initial report that a continuing or past presence of bats using the structure had been shown, with obvious potential for the use as indicated to be at a greater and more significant level given available access potential primarily along the roof ridge and slopes. Thus a contemporary use of the site was possible and which use could be disturbed by the development proposals. The survey methods employed had, as usual, left a residual potential for missed evidence of solitary or temporary bat visitation elsewhere.

7. Neither the precise use of the site, nor definite access point(s) for bats had as yet been identified, (although access via the ridge and slope tiles, hanging tiles and flashing was deemed possible), and could be of a significant nature given the location. Therefore further investigative surveying was recommended and has now been carried out, to determine if the use is contemporary and whether a bat disturbance mitigation licence will need to be applied. A suite of summer season activity surveys for bats has now been completed with the result that the main house is identified as the current day-roosting location for a solitary common pipistrelle bat at this time. Disturbance can therefore take place, but only once other consents are in place and not until we have obtained the necessary protected species disturbance licence.
8. No other protected species or likely habitat issues were identified associated with the site, although please do note the limited extent of this bats in structures appraisal.
9. Based on the nature of the site, its location and the observable evidence, the conclusion made, within the extent of knowledge of the planned work (structural disturbance with potential for impediment to bat access or use of roosting locations), is that the work presents some potential for disturbance to use by roosting bats or to other protected species, and that a precautionary approach to structural disturbance is recommended at the appropriate time within appropriate licensing.
10. **Our overall recommendation, therefore, is to pursue careful proposals for the site development scheme herein described, and to pursue a precautionary approach to those works once all necessary consents are obtained. The most appropriate licensing route would be the Bat Mitigation Class (Low Impact) Licence. A monitoring survey in the year following works completion is strongly recommended.**
11. The property structure at the site with current proposals for change left some potential for oversight of current bat use.
12. (For ease of understanding, English vernacular names of common species are used throughout this report. A full scientific species list can be made available if requested.)

1. Introduction

- 1.1 Europaeus Land Management Services was commissioned by Ms Laura Gough to carry out a bat roost preliminary daytime assessment survey of parts of the identified property (61 Balmore Drive, Caversham, Berkshire RG4 8NN), prior to proposed works there. We understand that the site is proposed for works to modify, repair and extend, including general roof and loft works; and which work therefore has potential to disturb parts of the property within which components potentially suitable for bat roosting could be partially disturbed. Further activity survey effort was deemed necessary and which work has now been completed. This report sets out the findings of our survey and provides recommendations in the light of those findings.
- 1.2 Thus work to modify the structures and particularly roofing and structural components will create the possibility of direct or indirect disturbance to some parts of the buildings and site which may have potential for use by bats and other protected species were they to be there or users of such features rendering the need for a bat survey.

The need for a bat survey

- 1.3 Some bat species in Britain are reported to be declining in numbers and distribution. There are 17 resident species in the country constituting over a third of all mammal species present. With habitat loss, fragmentation and degradation, building conversion, misuse of timber-treatment chemicals, increase in predators and direct persecution, the situation in some areas is serious. Several of the commoner bat species are reported to have significantly declined in the second half of the twentieth century. Bats are therefore protected under national and international wildlife law, and owners, developers and planners have to take due notice of their protection within activities. There is no defence under law for a plea of ignorance even when carrying out otherwise lawful activities.

Limitations

- 1.4 The optimal survey period for the characterisation, mapping and assessment of the presence and nature of protected species (bats) present on a site in this geographical region, to the level required for a comprehensive ecological assessment, is May - August inclusive. The May / August period is the optimal survey period for bats within buildings on a site in this geographical region, to the level required for a comprehensive assessment. Bats are active at this season and their droppings and other field signs, whilst typically cryptic and requiring detailed search, will nonetheless be apparent to the experienced surveyor. However, with recent changeable weather trends, bats are known to have, in some circumstances, altered their movement and occupation patterns. This full structural and scoping survey was deemed to have taken place adequately with the aid of ladders, a flexible endoscope, binoculars, thermal imaging and ultraviolet light transmission equipment available. Apart from the details provided here, no other parts of any structures or other building components adjacent to the site were entered or surveyed nor were other protected species groups addressed except in passing (as no significant impact will result from the plans on any semi-natural habitats or surrounding land for instance). It should be noted that investigation of the site represented a bat species appraisal and, although we feel it is highly unlikely that significant matters have been overlooked, visits may miss species not apparent at the times of survey by reason of seasonality, mobility, habits or chance. Particular seasonal limitations are indicated in the text. Weather conditions were acceptable at the time of the survey for this approach.

Legislation

- 1.5 Within England all species of bat and their breeding sites or resting places (roosts) are protected under Regulation 39 of the Conservation (Natural Habitats) Regulations 1994 and Section 9 of the Wildlife and Countryside Act 1981. Further enforcement has been provided by The Countryside and Rights of Way Act 2000 which confers a responsibility to the government. The Conservation of Habitats and Species Regulations 2010 updated the legislation. In exercising their decisions within the planning framework, local authorities are duty bound to take full account of the impact on biodiversity, including the wider biodiversity network and 'notable' species listed within Red Data Books, taxa-specific conservation lists and Schedule 41 of the Natural Environment and Rural Communities Act 2006. Furthermore Planning Policy is relevant to preserve and enhance biodiversity and conserve native wildlife and habitats. The national government is committed, under the

UKBAP, to the promotion of the pertinent habitats and species action plans which includes all of its bat species.

1.6 It is illegal to:

- deliberately disturb bats (whether in a roost or not) in a way as to be likely to significantly affect
(a) the ability of any significant groups of animals of that species to survive, breed, or rear or nurture their young, or (b) the local distribution of abundance of that species
- damage, destroy or obstruct access to bat roosts
- possess or transport a bat or any part of a bat, unless acquired legally and in possession of a licence to do so
- sell, barter or exchange bats, or parts of bats unless in possession of a licence to do so.

1.7 Within the Conservation of Habitats and Species Regulations the law has been made quite clear. Many formerly used defences can now no longer be used in disturbance situations. These include the commonly relied upon 'incidental result defence', which previously covered acts that were the incidental result of an otherwise lawful activity and which could not reasonably have been avoided.

1.8 There is, therefore, an obligation on those who seek to effect changes to buildings, structures, caves or trees, or carry out activities which might constitute a disturbance, where bats are present, thought to be present, or have the reasoned possibility of presence to seek specialist advice, and to ensure that appropriate systems are in place to avoid damage to bat roosts or their habitat.

1.9 As bats are protected by European legislation, works under a planning permission that will cause disturbance to a bat or bat roost shall require a specific licence from the Wildlife Licensing Unit (W.L.U.) of Natural England (DEFRA), and in Wales of N.R.W., (only after planning permission has been granted where this is required). Conditions may be added to a licence or the granting of a licence may be refused. Under the Conservation of Habitats and Species Regulations the W.L.U. can issue licences for:

- preserving public health and safety or other imperative reasons of over-riding public interest including those of a social and economic nature and beneficial consequences of primary importance for the environment;
- preventing the spread of disease; preventing serious damage to livestock, foodstuffs for livestock, crops, vegetables, fruit, growing timber or any other form of property or to fisheries

1.10 The W.L.U. can only issue a licence if it is satisfied that the activity meets one of the above purposes and is also satisfied that there is no satisfactory alternative, and that 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.

1.11 Applications to apply for European Protected Species licence for bats consist of the following:-

- Application form – this provides detail on the applicant, project, the purpose of the work and consideration of alternatives.
- Method Statement – this provides detail on the methods to be used to carry out the work with regard to bats and will include a survey undertaken to determine the number of bats present.
- Detailed timetable of works, mitigation measures and all monitoring and possible modification works.
- Reasoned Statement of Application (for larger scale projects) – this provides the reasons for the disturbance and gives evidence of the justification.
- Within English jurisdiction (though not Wales), for projects involving small numbers of the most commonly encountered bat species, in licence situations and in roosting behaviour other than important maternity, mating or hibernation sites (amongst others), an approach of a **Registered Consultant** being employed to instruct works under the **Bat Low Impact / Mitigation Class Licence** (B.L.I.C.L./B.M.C.L.) system may be appropriate with a lower burden of paperwork, compensation and monitoring.

Breeding Birds

The need for a breeding bird survey

- 1.12 The Wildlife and Countryside Act 1981 (WCA 1981) provides that all wild birds are protected and cannot be killed or taken except under licence. The Act also prohibits or controls certain methods of killing or taking except under licence. Certain exceptions to this general rule apply. However, with the exception of a certain few derogated pest or very common species, the legislation gives protection to all wild birds in Britain.
- 1.13 The May – June period is the optimal season for the identification of breeding bird assemblages where song birds identify and defend nesting territories and sites, where vegetation is less dense than later and first broods might be expected to be observable.

Limitations

- 1.14 A search for any disused nests or those under occupation was possible. Weather conditions were acceptable at the time of the survey.

2. Survey methodology

- 2.1 **Bats:** The detailed methodologies for the survey followed a considered and proportionate approach to best practice recommendations in *Bat Surveys: Good Practice Guidelines* (BCT 2007, revised 2016), and *Bat Mitigation Guidelines* (English Nature 2004), the Bat Workers' Manual (JNCC 2004), and Guidelines for Baseline Ecological Assessment (Institute of Environmental Assessment 1995), Institute of Ecology and Environmental Management Professional Issue Series (IEEM 2006).
- 2.2 **Survey objectives:** The first objective of the update survey was to categorise the survey site as identified and highlight any potential issues pertaining to protected species and habitats. The objectives of the survey methodology were to identify bat and other similarly protected species at the survey site, and assess their uses of the location with a view to potential impacts of proposed works to the identified site and vicinity; similarly to make an assessment of the presence or possibility of any bat or other protected species, to locate bats in occupation or signs of bat use of the identified building components and immediate vicinity, and to assess the possibility of the site being occupied by bats or other protected species.
- 2.3 A full structural survey and walkover "scoping" or "stage one" daytime assessment of the survey site was undertaken examining features for the presence of protected species and assessing the likelihood of their occupation or use.
- 2.4 The habitat assessment was undertaken in the autumn of 2020 (4-11-20) with dedicated search made by exploring the named and identified parts of the survey buildings and immediately surrounding land at the site.
- 2.5 This full survey, including a thorough and systematic internal and external visual examination for signs or presence of bats using the identified building was undertaken, concentrating on the roof and walls of the relevant buildings and elsewhere by a highly experienced and suitably qualified ecologist. High powered and small beam torches were utilised with the structures viewed in detail from all aspects. Binoculars, ultraviolet light and thermal imaging devices and a flexible video endoscope were available to be employed. Comprehensive and systematic search was made of the structures including all aspects and levels, and in detail to the wall tops, soffits etc. Attention was given to crevices etc for bats, their droppings, food remains or characteristic grease marks at potential exit and entrance points. The

exteriors of the buildings were thoroughly searched, paying particular attention to external crevices, ledges or pipes where droppings could gather undisturbed, and under potential access points such as any loose roofing material, flashing or broken ventilation bricks etc.

2.6 Signs of bat activity searched for included:

- Droppings - these can contain fragments of insect exoskeleton and will crumble to dust (unlike those of small rodents, which typically become hard). Bat droppings will stick to surfaces including walls, windows and window ledges and may also become caught in spider webs near a roost site or feeding perch.
- Feeding remains - these include the discarded wings of flying invertebrates, which may accumulate under a well-used feeding perch. Some species, such as the brown long-eared bat, have seasonal preference for moths of the *noctuid* family the accumulated wings of which identify this bat as being present.
- Oil staining - the fur of bats may leave an oily residue on surfaces close to occupied roost sites and access/egress points.
- Smell – most bat species have an identifiable aroma while certain species, such as the noctule (*Nyctalus noctula*), are noted for their “smelly roosts” due to urine scent marking activity.
- Daytime vocalisations - these are most pronounced at larger roost sites during periods of hot weather.
- Absence of cobwebs - a well used bat roost and its access points are typically clear of cobwebs.
- Scratching - scratch marks produced by the claws of many bats may be apparent close to the access point for a well-used roost.
- Dead bats, either older or especially babies within maternity roosts.
- Pupae of the bat fly.
- Tracks in dust.

- 2.7 A follow-on bat activity survey series was first commenced for a period over and prior to dusk on the night of 13-5-21 by a highly experienced ecological team of two trained surveyors, employing handheld and static time expansion, heterodyne and frequency division bat detectors. The “emergence survey” was undertaken for more than a minimum recommended period. Binoculars and night vision equipment were employed to visually monitor possible access points to the structure under survey. Observation of emergence or entrance, or returns to roosting locations was sought including an assessment of the area immediately associated with the survey structures. Five recording units were set to record all bat activity for the duration of the survey including all structures at the location as well as passing or nearby bats. Particular attention was paid to the main survey building’s structural components and roofs where disturbance is proposed to identify any emergence or returns of bats. A further activity survey was carried out on the pre-dawn and dawn of the 10-6-20, and a third covering the pre-dawn/dawn of 3-7-20.
- 2.8 **Equipment and technology** employed included two Pettersson D240x® time expansion ultrasonic detectors, an Anabat SD1®, an Anabat Walkabout® and an Anabat Scout® device, a Bat Box Duet® frequency division and heterodyne ultrasonic detector all with MP3 recording devices, and EM3® and SM2® time expansion, frequency division, and heterodyne combined recording detector technology. In addition three Echometer Touch® Pro devices recorded via an iPad 4®, iPhone 11® and an android device, all calls for live and subsequent analysis. A night vision scope, headtorches, red-filter torches and high powered torches were all employed. The data acquired from all of the units was further analysed later on a mainframe computer running analysis software to confirm and extrapolate “in the field” identification.
- 2.9 For **breeding birds** an assessment of nesting sites was taken during the survey visits and the site searched paying particular attention to the possible presence of all nesting and dependent species.

3. Survey results

Location & description

- 3.1 The survey location is at national grid reference SU 71622 75644 and is a semi-detached residential property in a residential road within the town of Caversham. It has a detached garage to the rear (east) and is in an area of other similar dwellings. The house is a traditional, brick built building with hipped, pitched and felt-lined, tiled roof. The single loft space, with floor area c7 x 7 x 3m, shows the roof underlining of a woven bitumen material. The house loft presents a single suitable enclosed void and is an evidently largely undisturbed space, unused for storage etc at the time of the survey. There is much evident opportunity for the ingress of bats along the central roof ridge, potentially at flashing around the chimney. The felt is considerably degraded and in tatters throughout the bulk of the roof. The garage showed no signs of, or potential for, an unidentified bat use.
- 3.2 There was a discernible use or visitation of the building's loft by at least a single bat species and the presence of structural components known to be favoured by bats (tiled roofs, substantial undisturbed and largely uninsulated roof space, range of aspects and hipped roof slope, and so on), where the roof is potentially affected by the proposals as explained to us and may well be stripped and repaired. Additionally, aspects of the structure potentially affected by the current proposals had residual obvious opportunities for flight access by bats or a roosting use otherwise capable of being missed by the experienced surveyor and therefore a further activity assessment approach will be required unless proposals for works can be suitably modified to avoid all such impacts.
- 3.3 The location is suitable for the presence of bats with mature trees in gardens and woodland nearby, quiet properties with flower-rich gardens, and further distant the riparian corridor of the Thames river with a range of associated semi-natural and native species. The location is within an area of identifiable moderate quality habitat for bat commuting and foraging by a range of commensal bat species.



Figs, 1, 2: Site location; Site survey boundary and site survey structure indicated; black arrow indicates bat roost (red) and primary flightlines (yellow)

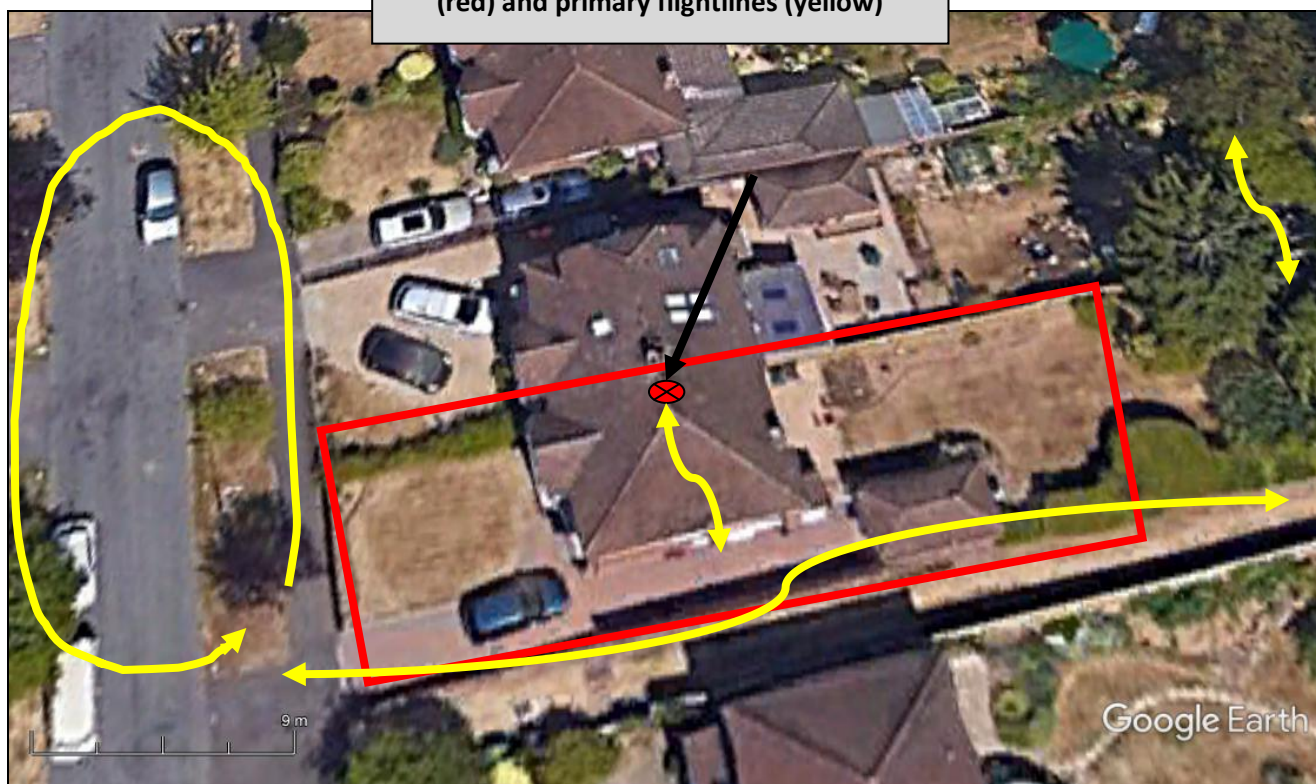


Table 1: Survey structures, descriptions and signs

Survey building	Description	Signs or potential for bat & other species use	Survey findings & significance
A	Detached house: two storey, with single roof void c 7 x 7m a 3m; tiled roof, degraded bitumen felt lined; hanging tiles to front gable	Pipistrelle bat type faecal droppings in loft, somewhat dry and degraded– near and adhering to the chimney, numbering ≥20; potential access especially via ridges & flashing around the chimney breast. High potential and some (limited) evidence of (past?) use	Single common pipistrelle roosting near to the ridge of the main house roof Other species using the site: soprano pipistrelles and Noctule bats (with further solitary bat roosts of both pipistrelle species identified within the near houses). A single or low number of bats such as this during the summer will in all likelihood be males or non-breeding bats. Thus one male bat could be the “standing male” for a colony of female bats in the vicinity & therefore of conservation significance
B	Detached garage: pitch-roofed bat roost potential but evidently well used for domestic purpose, no obvious substantial voids.	No evidence of internal bat exploration Moderate potential for bat use but negligible potential for missed evidence	No evidence of any bat use

Species evidence

- 3.4 **Bats.** All relevant areas of the accessible affected structures were viewed in detail on the survey. All surfaces were scrutinised for evidence of bats. Where applicable any cracks in the structures were examined in detail including endoscopic analysis. Any cracks, holes etc were all examined with the use of the endoscope and thermal imaging equipment where applicable and accessible, including the interior and exterior of the buildings' components.
- 3.5 By these means evidence of a contemporaneous bat usage of structure A, the house roof, by at least one individual of one bat species, was discerned. The loft has also evidently been a bat roost or location of a temporary bat visitation at least at some point in the past few years.

Other species

- 3.6 No evidence of any other protected species group was identified directly associated with the survey structures other than the potential for nesting birds in due season for instance around the garden, and there is very little realistic potential to encounter such species in the immediate (paved and mown lawned) domestic curtilage. Although the general area will no doubt have some habitats of (commensal) wildlife value, the proposed works, as we understand them, would appear to have no perceivable impact upon these.

4. Appraisal and recommendations

- 4.1 These recommendations are made in order to facilitate proposed works at the site location, and to ensure compliance with local and national statutory planning policies, species protection and best practice. In addition to species specific and habitat protection legislation local planning authorities have an obligation to conserve and enhance biodiversity.
- 4.2 The survey site is within a relatively biodiverse region of the country and is close to good bat habitat in the form of nearby wooded areas. Consequently, protected wildlife which is supported there should figure highly in management and development proposals at the locality. For the named survey structures we consider that a proportionate survey approach to scope and identify relevant property matters has been undertaken at this time of year with the parts of the surveyed buildings proposed for remodelling disturbance as described having an overall demonstrably high potential to support roosting by bats as evidenced by this survey approach. This potential for bat use is created by the nature and condition of the construction type, the range of environmental conditions available, the proximity to protected foraging habitat and by the presence of suitable access opportunities. Further summer activity survey work has confirmed the species, nature and type of use, flightpaths and roosting activity on the building structure, determining that the use is current. As described, the more general survey location and local habitat quality and connectivity are used by a range of regionally encountered bat species for commuting and foraging. The survey site evidently contains habitat suitable for nationally valued or recognised species. A search of records held primarily by the county biological recording centre would serve to enhance general information about the site. Data from our surveys will be submitted for recording. Any protected wildlife which is supported there or utilises the site in some fashion will need to figure highly in routine management and any development proposals at the locality.
- 4.3 **Appraisal.** The identified parts of the property at the location targeted for possible disturbance by the proposed building works showed signs of a bat visitation and use. Works to the structure identified are deemed to have a potential to disturb bats, their roosts or their access points to roosts. There is a residual potential for seasonal change of use by bats, particularly given the nature of the roof, hanging tiles etc. Therefore we recommended and have completed that further survey work to identify the level and nature of a contemporary bat use including the primary access and flight routes.

Summary

- 4.4 While the identified structure has a current bat use identified (which means no disturbance is permitted), further survey effort would likely identify further evidence of bat species' use in terms of foraging and commuting. However, the main conclusion of this survey is that the house pitched roof structure has been found to be functioning as the location of a bat roost. However, given the proposals as we understand them, we consider that it will be entirely possible to pursue these, within a licensed scheme of considered and proportionate mitigation and compensation, and which site works will have the potential to enhance the biodiversity use of the surveyed site. We currently are of the professional opinion that the garage has not previously served as a bat roost, is not currently a bat roost and is not suitable at this time, therefore, given all other necessary official consents in place, we conceive no threat to bats or their roosts from any works to that structure.
- 4.5 **Recommendations in general.** In addition to the legal protection afforded bats and their roosts, in line with recognised good practice and government policy on biodiversity and sustainability, all practical opportunities should be taken to harmonise the built environment with the needs of wildlife. As much connectivity and habitat diversity should be retained within development schemes as is reasonably practicable. It is, therefore, good practice to attempt to maintain the biodiversity potential at such sites and with specific regard to protected species groups. However we consider that a well-configured development proposal, taking consideration for maintenance and enhancement and especially the maintenance of bat use, will allow for the site to continue to support locally valued species and habitats and our advice would always be to incorporate such ecological input when drawing up such schemes.

Precautions

- 4.6 It could not be entirely ruled out that protected bat species are not using any other parts of the site at this location, or that they would not be present should work take place, therefore a precautionary approach should generally be followed to any and all building disturbance including general maintenance (such as roof repairs), which should be by careful means. It is important to note that any work, maintenance or remodelling of any of the other structures or gardens / trees etc present at the location could well require a qualified survey approach

and potentially including a “bat mitigation or disturbance licence” prior to legal permission to proceed should bats be found to be present. We recommend, via our precautionary method statement in Appendix 3, that any works to the structures, were they to be required, proceed within an informed precautionary approach, and that a qualified, supervisory element is involved.

- 4.7 (Most) birds are protected during the breeding season (which nest dependency can be year-round for wrens for instance). They are fully and legally protected when nesting and their nests may not be disturbed or their access to them impeded (unless under special permission or of the very few derogated species). If nests are found to be present at the time of works commencement of those works should be delayed and further advice sought from the ecologist. Suitable mitigation for the protection of small mammals etc will need to be devised for the building scheme particularly with the knowledge now held that hedgehogs frequent the area.

Report Author & Personnel

The survey was carried out by Stephen West MSc MCIEEM MACMA, assisted by Marianne Stanley both experienced ecological surveyors.

The survey was carried out by Stephen West MSc MCIEEM MACMA, who is an ecologist with more than twenty-five years experience of environmental consultancy, and thirty-five years of project management work and habitat management experience. He studied Ecology at bachelors level at U.E.A. and possesses a Master of Sciences degree (with distinction) in Habitat Creation and Management and another similar relevant qualification from Oxford University. Stephen is a highly experienced ecological surveyor and consultant and represented Southern England on the early National Council of the Bat Conservation Trust in the 1990's. He has worked with all types of wildlife, and with bats since the 1970's in the UK and abroad, and held an English Nature / Natural England licence to disturb bats for the purposes of science and education or conservation since 1991 (Survey licence no's (All England) NE: **CLS001710 – Bat survey level 4, & CL20 Level 4 2015-15782-CLS-CLS**, (All Wales) NRW: **76333:OTH:CSAB:2017** to survey bats of all species for scientific (including research) and/or educational purposes). He is a Registered Consultant under the Bat Low Impact Class Licence System (Bat Mitigation Class Licence both Annexes B & D) with Natural England enabling us to provide speedier and less bureaucratic licensing for work on sites of low impact on the commoner bat species. We also offer this quick, cost effective service for great crested newts via one of the team. Stephen is the founding chairman of the current Worcestershire Bat Group, and a foundation and currently serving committee member of the West Midlands branch of the **Chartered Institute of Ecology and Environmental Management**. He holds a number of Natural England and NRW / CCW protected species conservation licences including badger, great crested newt, barn owl and hazel dormouse.

Our work has involved extensive development of mitigation plans and DEFRA / Natural England and W.A.G. / Natural Resources Wales licence applications, ecological impact assessments, ecological management plans and appearing as expert witness at public inquiry. Europaeus Land Management Services was established in 1993 and has held management and consultancy contracts with a great many organisations and private individuals



Appendix 1: Survey photographs (4-11-20)



Plate 1: View of front, western elevation showing area of hanging tiles in gable



Plate 2: Closer view of front elevation showing lead flashing around the chimney and the hipped edge tiles. Location of bat roost in 2021 identified



Plate 3: View of house rear elevation showing detached garage



Plate 4: View of the underside of the roof interior showing the degraded nature of the felt lining



Plate 5: View of the house roof with split chimney stack



Plate 6: View of bat dropping adhering the internal dividing wall at the chimney breast



Plate 7: View of droppings collected near the internal dividing wall within the loft

Appendix 2: Aggregate bat data

Table 1 : Bat species mentioned in text

Noctule bat	<i>Nyctalus noctula</i>
Common pipistrelle bat (45kHz)	<i>Pipistrellus pipistrellus</i>
Soprano pipistrelle bat (55kHz)	<i>Pipistrellus pygmaeus</i>
(Brown) long-eared bat	<i>Plecotus auritus</i>

Table 2 : The bat activity data (not exhaustive of all recorded bat contacts)

13-5-21	Activity Survey 1 : 2 surveyors
Sunset	Windspeed still, Cloud cover 1/8, Relative humidity 67 – 84%,
20.46	Temperature range 12.3 – 10.9°C
20.35	Onsite, position detectors, re-check exterior, install remote detectors around property and commence emergence activity survey
21.06	55 kHz Pipistrelle bat identified as probable emergence from across the road
21.07	Long-eared bat to rear garden edge, again @ 21.12, 21.26
21.18	45 kHz Pipistrelle bat identified to immediate west of house as probable emergence from centre of roof
21.20	45 kHz Pipistrelle bat identified around house foraging, again @ 21.23, 21.26, 21.29, 22.12
22.25	Terminate activity survey 1 direct observation and depart site

10-6-21 Sunrise 04.47	Activity Survey 2 : 2 surveyors Windspeed almost still, Relative humidity 67 - 77%, Temperature range 20.2 – 19.2°C
03.10	Onsite, position detectors, re-check exterior and perform activity survey
03.25	45 kHz Pipistrelle bat identified to rear of house – woodland edge, again @ 03.39, 03.46, 03.57, 04.08, 04.10, 04.31
03.38	45 kHz Pipistrelle bat identified immediate vicinity of house roof but no settling observed
03.40	Noctule bat identified above site, again @ 04.21
04.10	45 kHz Pipistrelle bat identified flying along tennis club track to south of house, swooping up side elevation to immediately enter to roost at the south side of the chimney stack on the central ridge
04.13	55 kHz Pipistrelle bat identified to west of house
04.31	45 kHz Pipistrelle bat identified to west of house
05.00	Terminate activity survey 2 direct observation and depart site

3-7-21 Sunrise 04.53	Activity Survey 3 : 2 surveyors Windspeed still, spotting/light shower (04.00-04.05, 04.30-39), Relative humidity 74 - 88% Temperature range 18.6 – 17.2°C
03.15	Onsite, position detectors, re-check exterior, and perform emergence / roost return activity survey
03.41	45 kHz Pipistrelle bat identified to west of house, again @ 03.56, 04.20
03.47	55 kHz Pipistrelle bat identified to west of house, again @ 03.54, 04.08, 04.32-04.34
04.20	45 kHz Pipistrelle bat identified flying to immediately enter to roost at the south side of the chimney stack on the central ridge
04.35	55 kHz Pipistrelle bat observed to enter roof roost at opposite property (address redacted)
04.36	Noctule bat identified above location house
04.39 - 04.44	45 kHz Pipistrelle bat identified flying south of house, foraged around the site before observed entering a roost on the ridge of a house several doors away (address redacted)
05.00	Terminate activity survey 3 direct observation and depart site
Conclusions	1 Roost by day, in the current year, of at least a single common pipistrelle bat on the southern side of the main roof chimney, at ridge, beneath tiles 2 The accumulated data from the externally sited dataloggers confirmed only the species identified by the surveyors and no early records which might be associated with roost emergence 3 Two other roosts were identified on nearby houses

Appendix 3: Implications of Survey Findings & Considerations for Proposals, Mitigation and Method Statement Recommendations

1. One species of bats is using the southern part of the roof ridge of the house, 61 Balmore Drive, to be affected by the current building proposals. There is a low priority status non-colonial use by a low number (maximum observed of one) common pipistrelle bat, (which though low in number could well indicate main colony breeding male(s) for a maternity assemblage nearby). The observed roost entry point, is via squeezing beneath a tile near the central ridge point. Therefore any disturbance or obstruction to this mode of use, including any roof repairs or disturbance, must be considered as a significant one. Given the nature of that use of the structure identified and particularly the evidence obtained of bats in low numbers we consider the likelihood of encountering bats during the proposed building work to be high. Further consideration has therefore been given to the current proposals, to perpetuate the bats' use of the property by recreation of roosting features on the new structure including the retention of the roost location and access as currently, along with the installation of two roof ridge bat access capping tiles.
2. Given the nature of the structures identified and the evidence of protected species use we consider the likelihood of encountering or disturbing bats during any work to the roofs, loft spaces, soffits or tiles, gables and verges etc to be relatively high. However some other protected species, (for example reptiles, hedgehogs), can be cryptic and mobile species. A hedgehog was observed foraging in the front garden on the last survey visit. Thus any associated groundworks must also be considered with due care.
3. Consequently, with regard to the often transitory and quickly changing nature of bats' use of buildings and due to the extent of the work as explained to us in this project, we feel it appropriate and proportional to proceed in the way set out here; that is, with caution and awareness, following the further assessment and licensing as deemed necessary. Once licensed and within an agreed methodology of works, this appendix and all the relevant documents should be made available to all workers onsite and constitute a "tool box" briefing at the start of their involvement with the project and following a further full update and endoscopic search by an appointed Ecological Clerk of Works with the awareness of the

ever-present possibility of the presence of bats (or birds) having taken up occupation. The named foreman or project manager will then be responsible going forward for adherence to all relevant protected species legislation.

4. As stated in the main body of the survey report:- A strong precautionary approach should generally be followed to any building maintenance or repairs at the location, and stripping operations or demolition especially. Should any bats be discovered during these works (or suspicion arise about the possible presence of bats, for instance in a crevice, behind a cavity or timber boarding, beneath roof slope or hanging tiles, or within brickwork etc), that work must cease immediately and the licensed consultant employed to establish bat presence or otherwise. The situation would then be assessed in the light of that evidence. It should be noted that any work schedule may well be affected should bats be discovered but to continue would constitute a breach of the legislation and a possible prosecutable offence. It is important to note that certain bat species do not occupy the internal volume of roofs and can often be supported between, for example, lining and the roof covering of buildings or, for example, beneath roof components including felt, flashing and fascia panels, in walls and soffits, even close to the ground etc or along wall tops. Hand stripping, under ECoW supervision, is deemed necessary for this project.
5. Bats in the UK, when encountered in structures, are not huge things like fruit bats hanging from beams, rather they are very small (generally smaller by far than a man's thumb), somewhat brownish in colour and often tucked away in tiny niches and crevices. You must look very carefully when lifting tiles, slates, flashing, exposing roof components etc. They are very fragile creatures and also known to potentially carry a range of diseases and should therefore not be handled with bare hands by anyone other than authorised and suitably prepared personnel. This must be pointed out at the start of the project.

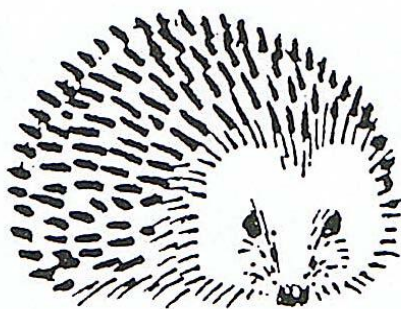
Summary for any structural or other disturbance works to the property

6. Continue to engage the services of an ecological consultant to supervise the methodology of specific works proposed, and within licensed permission once granted, as that is deemed necessary.
7. Thence make this appendix and the developed Method Statement for works available to all site workers and this to be the responsibility of the appointed Ecological Clerk of Works, the foreman or project / site manager.
8. Subsequently, and at any time during the disturbance, if any bats (or breeding birds) are encountered or a suspicion about their presence or a roost being discovered then:-
9. **Work must stop immediately.**
10. Carefully replace the component which removal led to the discovery, and gently cover the bat unless it has already flown (a soft cloth can be used).
11. **Do not handle any bat unless absolutely necessary** to avoid it being harmed. In that event handle only with gloves and place somewhere safe, in the dark and where undisturbed.
12. Call Stephen immediately, if not present onsite, in any case on 07767 853495, or Natural England. Similarly, call should any other species be observed (reptile, amphibian, nesting bird etc).
13. Do not continue until full consultation has taken place. It could be a prosecutable offence to continue without the further consultation.
14. The ECoW must be present on site as any part of the roofs, hanging tiles or verges are impacted / exposed by the proposed works there to search for the presence of bats. If any are discovered then works must cease in the first instance to enable the ECoW to provide a resolution in accord with the relevant legislation and consents. This will be the safe translocation, via an approved handling box, to a previously installed Schwegler 1FF box on a nearby tree if possible, to the east of the house.

15. We recommend that the new roof as proposed utilise bitumen felt underlay at least at ridge channel access in two locations provided via two bat ridge tile roost for the use of the bats.
16. A monitoring survey in the first year following works completion is recommended to check on efficacy of works and propose improvements if required.
17. Important note: If there is an owners' desire to carry out any repair or modification work likely to cause disturbance to bats, even simple tile re-setting or flashing repairs for instance, their identified roost or their access to them, then full legal consent must be obtained prior to that work. Regardless of any need or otherwise to receive planning consent, this advice remains relevant, particularly given the early survey identification of a low level active roosting presence by bats within the main roof structure.

Biodiversity compensation and improvement

18. For the new residential set-up proposed we have recommended the retention or recreation of suitable small roosting features along the roof ridge in two places.
19. Enhancement of the location for wildlife can be achieved by the encouragement of bird nesting. We further recommended sparrow terrace boxes and house martin nest forms (as supplied by, for instance, NHBS, with “Schwegler” designs preferred), be erected in suitable positions on the gables and beneath verges on the house.



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