74 Wakefield Road, Lepton

Bat Survey Report

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1. Summary

1.1.1 A bat survey of 74 Wakefield Road, Lepton was commissioned by the architect Matthew Norris on behalf of the client Stuart Carter-Waller on 5th June 2024.

1.1.2 The survey was undertaken to inform proposals to demolish the existing building at 74 Wakefield Road in order to construct a new dwelling.

1.1.3 Bat survey works detailed in this report include a desk-based study, an internal and external visual inspection and a nocturnal survey.

1.1.4 No historic bat records relating to roost presence were obtained in relation to the site. No evidence of bat roosting was recorded during the visual inspection of the building, which was considered to display a low level of bat roost suitability. No bat roosting activity was recorded during the nocturnal survey, and it appeared that roosting bats were absent from the surveyed building.

1.1.5 No further survey effort is considered necessary for the building providing the recommendations provided in this report are enacted and works commence within 24 months of the survey date. If works are to commence after this date, then Middleton Bell Ecology should be contacted to determine the requirement for update survey.

1.1.6 Works should proceed with caution and vigilance for unexpected bat presence, as single bats can roost almost anywhere. If bats are subsequently discovered, work should cease, and further advice sought without delay.

1.1.7 Recommendations have been provided in relation to bat and bird enhancement features, to be incorporated within the new building. Advice has also been provided in relation to roofing membranes and new external lighting.

2. Introduction

2.1.1 A bat survey of 74 Wakefield Road, Lepton was commissioned by the architect Matthew Norris on behalf of the client Stuart Carter-Waller on 5th June 2024.

2.1.2 The survey was undertaken to inform proposals to demolish the existing building at 74 Wakefield Road in order to construct a new dwelling.

2.1.3 Bat survey works detailed in this report include a desk-based study, an internal and external visual inspection and a nocturnal survey.

2.1.4 The site was located at the northern end of Fenay Bridge, a village located 4.1 km southeast of Huddersfield town centre.

3. Habitat Assessment

3.1.1 The surveyed dwelling was located within a substantial garden including both lawn, shrubbery and scattered trees. The site is bordered on its western edge by a narrow belt of woodland, with the local area supporting several copses. Together with Fenay Brook, these areas of woodland comprised well connected prime bat foraging habitat.

3.1.2 It was considered that a moderate density of bats of a varied range of species was likely to use the site. Table 1 summarises the habitats present, adjacent to and further afield of the surveyed buildings.

Table 1. Location and habitat table

Name and address: 74 Wakefield Road, Lepton, Huddersfield, HD8 0BL			
OS Grid Ref.: SE 18559 15765	Altitude. 140 m		
Local Planning Authority: Kirklees Council			
Features on site and adjacent to site			
Feature	On site	Adjacent	Comments
Buildings	✔	✔	Located adjacent to other dwellings
River bordered by trees			The wooded Fenay Beck 400 m to southwest
Standing water			
Bridges tunnels and culverts			Associated with Fenay Beck
Trees	✔	✔	Within garden of dwelling
Woodland		✔	On boundary of site 20 m west of surveyed dwelling
Grassland	✔	✔	Lawn adjacent to dwelling

Figure 1. Site location

3.2 Aims

3.2.1 The survey was conducted to help determine the following:

- The presence/absence of roosting bats.
- Bat roosting areas and access/egress points into the building.
- The level of bat roost potential associated with the building.
- The number and species of bat roosting within the building, if present.
- Identify further survey work or mitigation requirements.

4. Methodology

4.1 Data Consultation

4.1.1 A desk study was undertaken, with bat records for locations within 2 km of the site requested from West Yorkshire Ecology (WYE) and West Yorkshire Bat Group (WYBG).

4.2 Field Survey

Internal and External Visual Inspection

4.2.1 The internal and external visual inspected was undertaken on 17th July 2024 by Robert Bell (MCIEEM; Class license WML-A34-Level 4, 2016-25236-CLS-CLS).

4.2.2 The following activities were carried out during the surveys in compliance with relevant Bat Survey Guidelines (Collins, 2023):

- A brief inspection and assessment of the site and habitats present to within 300 m.
- An extensive examination of all parts of the building both inside and out to record structural features and condition and to record features that may be suitable for roosting bats. Particular attention was paid to any crevices or gaps in walls, lintels, gaps between beams and joists and to the possibility of finding droppings stuck to walls, floors or other surfaces, or insect remains below beams, among a number of other factors. All and signs indicative of a bat roost presence including live or dead bats, droppings, feeding remains, scratch marks and staining were recorded.
- An assessment of the building's bat roost potential (negligible, low, moderate, high or confirmed roost).

4.2.3 In addition, any signs of nesting bird usage of the building was recorded.

4.2.4 The following equipment was used or at hand during the survey:

- Clulight
- Binoculars
- Endoscope
- Ladders
- Camera

Nocturnal Survey

4.2.5 A single targeted dusk emergence survey was undertaken by Robert Bell and Amanda Murphy (Bat Survey Class license WML-A34-Level 2, 2020-47913-CLS-CLS) on 17th July 2024. This survey commenced 15 minutes prior to sunset and continued until 1.5 hours after this time. Three infra-red lit Canon XA10 cameras with external floodlights, and a single Guide TK612 thermal sight, were used to aid surveyor observations. Wildlife Acoustics EM Touch bat detectors and accompanying iPod recorders were used to detect and record acoustic bat calls during the survey. The arrangement of surveyors and cameras is shown in Figure 2.

Figure 2. Building numbering and nocturnal survey plan

4.3 Survey Limitations

4.3.1 No significant survey limitations were encountered.

5. Results

5.1 Data Consultation

5.1.1 A total of 52 bat records were received from WYE. None of the records received related to the site itself. Species positively identified in the records included common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula,* brown long-eared bat *Plecotus auritus* and Leisler's bat *Nyctalus.* Other bat records were attributed to either an unidentified pipistrelle species, or an unidentified species of bat. The closest record to site was collected in 2001 and comprised a record of a maternity roost (30 bats) of an unidentified species of bat, located in a dwelling 450 m northwest of the site.

5.1.2 A total of 24 bat records were received from WYBG. Species positively identified in the records included common pipistrelle *Pipistrellus pipistrellus*, Daubenton's bat *Myotis daubentonii,* brown long-eared bat *Plecotus auritus* and Leisler's bat *Nyctalus.* Other bat records were attributed to either an unidentified pipistrelle species, or an unidentified species of bat. The closest record to site comprised the same 2001 unidentified bat species maternity roost record provided by WYE. This record was collected from a location 450 m northwest of the site.

5.1.3 No bat EPS mitigation licences have been issued for locations within 2 km of the site.

5.2 Field Survey

<u>Internal and External Visual Inspection</u>

5.2.1 No signs of bat presence were recorded during the visual inspection, with the building considered to display a low level of bat roosting suitability. No bird nests were noted from the surveyed building.

Description

5.2.2 The dwelling comprised two connected building sections of different ages (Plates 1-4) with the southwest section of the dwelling dating back to at least the 1800s. The southwest section of the dwelling was constructed of stone with the northeast section constructed of brick. Jointly the two building sections comprised a detached bungalow, with the exterior rendered and whitewashed. A small porch was present on the southwest elevation. The bungalow roof was multi-pitched with a separate dual-pitched roof over each of the building sections and a central valley between the two roofs. The roof on the older (southwest) section of the dwelling was covered with concrete tiles and a clay ridge, with concrete verge copings. The roof over the newer (northeast) section of the dwelling was covered with Welsh slate and a clay ridge and also concrete verge copings. Two brick chimneys were present, and the building had double-glazed windows with uPVC frames. A wooden soffit was present on the southwest elevation.

External bat roost potential

5.2.3 Potential bat roosting features on the exterior of the dwelling were limited and comprised the following:

- Several rotten sections of soffit on the southeast elevation (Plate 5).
- Gaps beneath coping (Plate 6).
- Missing ridge bedding mortar on the northeast dual-pitched roof.

Internal inspection

5.2.4 Both of the dual pitched roofs had 1.5 m high voids. The northeast dual pitched roof was unlined and suspended on a ridge beam, purlins, rafters and battens with 200 mm of glass fibre insulation present on the ceiling (Plate 8). The southwest dual pitched roof was lined with a hessian Type 1F bituminous felt and suspended on king-post trusses, a ridge beam, purlins, rafters and battens with 100 mm of insulation present on the ceiling (Plate 7). No signs of bats were recorded, however, occasional rat *Rattus norvegicus* droppings were recorded from both voids.

5.2.5 The dwelling was considered to display a low level of bat roost suitability.

Plate 1. Northern corner of dwelling

Plate 2. Eastern corner of dwelling

Plate 3. West corner of dwelling

Plate 4. Southeast gables

Plate 5. Broken section of soffit

Plate 6. Gaps in pointing beneath roof verge coping

Plate 7. Section of southwest roof void

Plate 8. Northeast roof void

Nocturnal Survey

17th July 2024 – dusk emergence survey

5.2.1 The temperature at the beginning of monitoring was 18 ºC, with no wind (Beaufort Scale Force 0) and four oktas of cloud cover (4/8). The temperature decreased to 16 ºC, during the survey, the wind level staying the same and cloud cover decreasing to three oktas. The weather was dry throughout. Sunset was at 21:26.

5.2.2 No bat roosting activity was recorded.

5.2.3 The first bat activity comprised a pass by a noctule at 21:33. The first pass near the building comprised a common pipistrelle commuting north to south past the southeast elevation at 21:55. Thereafter occasional common pipistrelle activity was recorded with a second noctule pass at 22:39.

6. Assessment

6.1 Summary and Evaluation of Findings

6.1.1 No historic bat records relating to roost presence were obtained in relation to the site.

6.1.2 No evidence of bat roosting was recorded during the visual inspection with the building considered to display a low level of bat roost suitability. No bat roosting activity was recorded during the nocturnal survey, and it appeared that roosting bats were absent from the surveyed building.

6.1.3 No evidence of bird nesting was recorded during the inspection.

6.2 Legislation and Policy Guidance

6.2.1 Bats receive protection under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and the Wildlife and Countryside Act 1981 (as amended).

6.2.2 It is an offence to:

- Deliberately capture (or take), injure or kill a bat.
- Intentionally or recklessly disturb bats whilst they are occupying a structure or place used for shelter or protection or obstruct access to any such place.
- Damage or destroy the breeding or resting place (roost) of a bat.
- Possess a bat (live or dead), or any part of a bat.
- Intentionally or recklessly obstruct access to a bat roost.
- Sell (or offer for sale) or exchange bats (dead or alive), or parts of parts.

6.2.3 The Convention on Biological Diversity, signed in Rio de Janeiro, Brazil in 1992, requires member states to develop national strategies and to undertake a range of actions aimed at maintaining or restoring biodiversity. The UK Biodiversity Strategy was produced in response to the Convention.

6.2.4 In England & Wales, the Natural Environment and Rural Communities (NERC) Act, 2006 imposes a duty on all public bodies, including local authorities and statutory bodies, in exercising their functions, “to have due regard, as far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”. It notes that “conserving biodiversity includes restoring or enhancing a population or habitat”. Barbastelle *Barbastella barbastellus*, Bechstein’s bat *Myotis bechsteinii*, brown long-eared bat, greater horseshoe bat *Rhinolophus ferrumequinum*, lesser horseshoe bat *Rhinolophus hipposideros*, noctule and soprano pipistrelle *Pipistrellus pygmaeus* are included as priority species within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. At a more local level there are Local Biodiversity Action Plans for smaller geographical areas which may cover a greater or lesser range of bat species.

6.2.5 Where it is proposed to carry out works which will have an adverse impact on roosting bats, some form of bat mitigation licence must first be obtained. This requirement applies even if no bats are expected to be present when the work is carried out.

6.2.6 The National Planning Policy Framework for England was revised in 2023. This document states that plans should ‘promote the conservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of

priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity'.

6.3 Further Survey, Recommendations and Enhancements

6.3.1 No further bat survey is considered necessary providing that works commence within 24 months of the bat survey works. If works are to commence after this date, then Middleton Bell Ecology should be contacted to determine the requirement for update survey.

6.3.2 Although bats do not appear to be roosting at 74 Wakefield Road, in accordance with the aims of the National Planning Policy Framework (2023), it is recommended that one new bat roosting feature be incorporated within the new dwelling. It is advised that an enclosed and integrated bat box, of a design such as either the Build-in WoodStone Bat Box or Ibstock Enclosed Bat Box C (Plates 9-11) be installed, at wall top height on the south or west elevation. The box should be sited away from areas of light spill. For further information on appropriate bat roosting features please contact Middleton Bell Ecology.

Plates 9-11. Build-in bat roost products

6.3.3 Over time bats will often get into new buildings, accessing roofing materials. Unfortunately, bats have been shown to regularly become entangled and die in the component filaments of standard modern woven roofing membranes (Appendix 1). There are however now a number of modern roofing membranes (i.e. Siga Majcoat 200 SOB) which have been shown to be relatively safe for bats. As a result, it is recommended that one of these 'bat safe' membranes should be used.

6.3.4 Many bat species are intolerant of artificial lighting. Consequently, it is recommended that new external lighting be restricted to passive infra-red sensor operated lighting. Where lighting is necessary, it is recommended that lighting is low height, low output, directional and of a warm colour tone. No light spill should occur across the new bat box.

<u>Birds</u>

6.3.5 In accordance with the aims of the National Planning Policy Framework, and to provide an enhancement for nesting birds, it is recommended that one integrated swift *Apus apus* box (i.e. S Brick (Plate 12)) be installed within the new dwelling. This box should be fitted at wall top height and may be installed across any elevation. Studies have shown that swift boxes are used by other bird species that utilise buildings and consequently this measure will provide potential nesting space for house sparrows

Passer domesticus and starlings *Sturnus vulgaris*, in addition to potentially providing future nest space for swift.

Plate 12. S Brick

6.4 Conclusions

6.4.1 No evidence of bat roosting was recorded during the visual inspection or nocturnal survey of the building at 74 Wakefield Road.

6.4.2 No further survey effort is considered necessary for the building providing the recommendations provided in this report are enacted and works commence within 24 months of the survey date. If works are to commence after this date, then Middleton Bell Ecology should be contacted to determine the requirement for update survey.

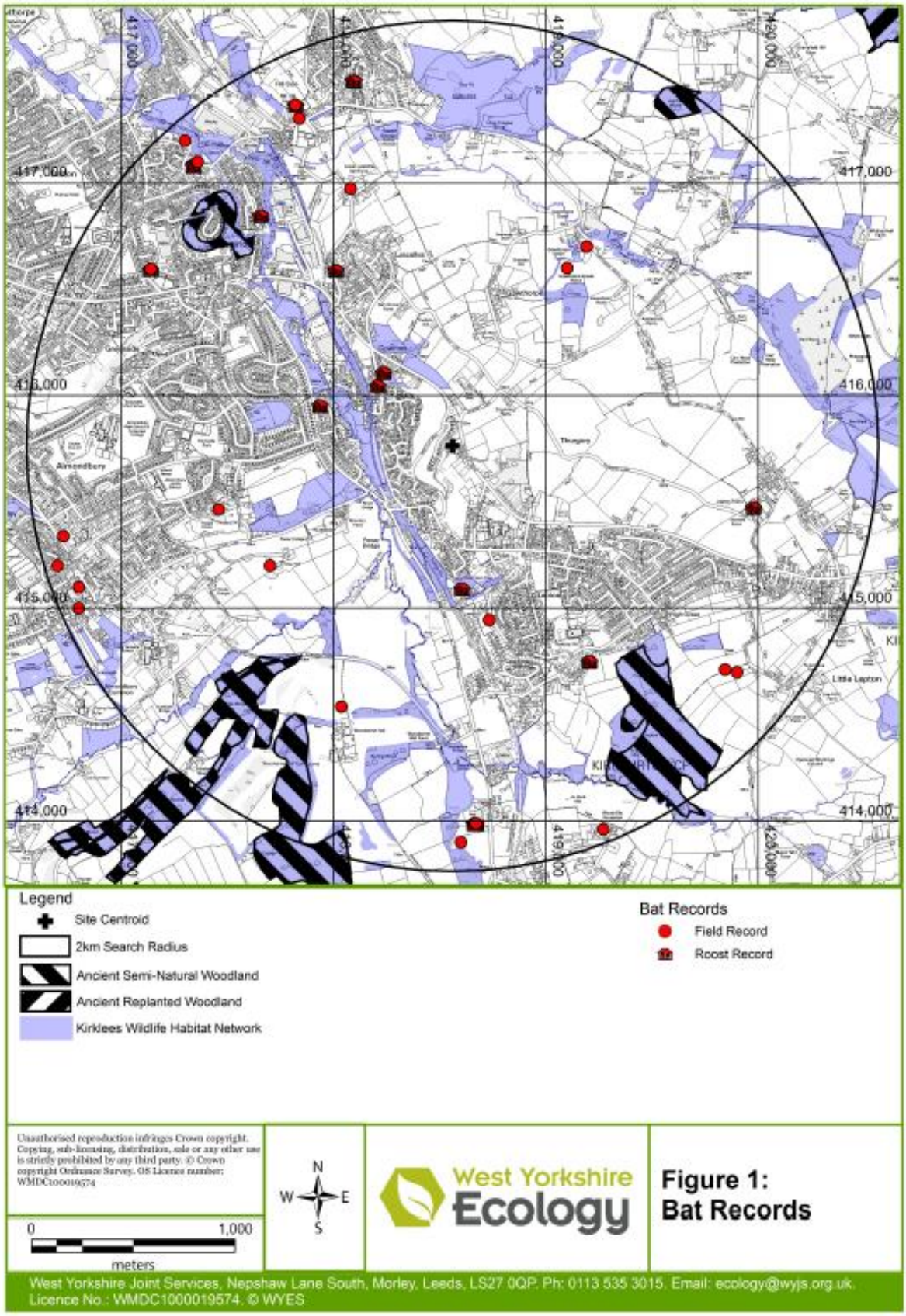
6.4.3 Works should proceed with caution and vigilance for unexpected bat presence, as single bats can roost almost anywhere. If bats are subsequently discovered, work should cease, and further advice sought without delay.

6.4.4 Recommendations have however been provided in relation to inclusion of new bat and swift nest/roost provision.

7. References

Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition). The Bat Conservation Trust.

Appendix 1. Bat Records Received From West Yorkshire Ecology



Appendix 2. Bats and Roofing Membranes

Standard roof membranes can cause the death of significant numbers of bats. Traditional bitumen coated roofing felt is recommended where roosting bats are expected to be present.

The problem

Non-bitumen coated membranes used below roof slates and tiles present a significant problem for bats. Over time, strands are pulled away from the surface of these materials as bats crawl over them. These fuzzy strands are very strong and can tangle and trap bats, sometimes causing the death of bats over multiple years[1].

One example we have encountered comprised a pipistrelle roost which formed in a building extension constructed in 2009. Over the course of just 13 years the roofing felt degraded to the extent that it trapped and killed more than 10 bats. Fortunately, the problem in this roost was identified and remedial work was undertaken to replace the roofing membrane in 2022.

Plate A1.1. Four dead pipistrelles tangled in breathable roofing felt

Although a new roof might be considered to lack potential bat access points, that is often not the case. Roofs covered with stone slates almost always have gaps large enough to be accessed by bats, this is often also the case where imitation stone slates are used. On older buildings the uneven roof timbers and/or building design also often results in gaps on wall tops and between slates. Even on new builds it is often possible for bats to access potential roosts via features such as dry verge capping. Some bats can access a space no wider than a biro pen, therefore it is not surprising that they can find their way into most buildings.

Safe roofing membranes (and membranes behind cladding)

The best roofing membrane option for areas where bat roosts are expected is traditional Type 1F bitumen coated hessian backed roofing felt. Bitumen coated roofing felts have been widely and safely used as a secondary weather barrier since approximately the 1950s/1960s. Wooden sarking has also been used for many decades and if appropriately treated, is safe for

[1] Wearing S. Essah E., Gunnel K. & Bonser R. (2013) Double jeopardy: the potential for problems when bats interact with breathable roofing membranes in the United Kingdom. Architecture and Environment

use in bat roosts, or where bats could be, present. Most commercially available products come pretreated but if required, a list of suitable timber treatment products are listed on the government website[2]. Wooden sarking also has the benefit of adding additional insulation and is usually breathable.

There are breathable membrane products which have passed a test known as the snagging propensity test. The test attempts to replicate the wear and tear which results from bats crawling over the membrane. At the time of writing (to our knowledge) two products have passed the test and are accepted for use in bat roosts by Natural England: SIGA Majcoat 200 SOB Diffusion and TLX BatSafe[3,4]. Although both have passed this test, it is unclear how they would fair over a long timeframe, and particularly within larger bat roosts. For this reason, we do not recommend that they are used for known bat roosts, and particularly for large (maternity roosts). However, they may provide a much needed option for roofs where future bat use cannot be ruled out, sarking boards are not an option, and a breathable solution is required.

Additional considerations

In recent years a fairly substantial proportion of the lofts we have surveyed which had existing breathable felt, were found to have been damaged by wasps (Plate A2.2). In these situations, the wasps appear to have chewed holes in the felt and formed nests in the holes. This doesn't appear to be a problem associated with the traditional bitumen coated roofing felt. Obviously, any holes within roofing felt would be likely to significantly reduce its functionality as a secondary weather barrier. Where bats or birds do come into contact with breathable roofing membranes, they can damage the membrane causing it to leak and they can also significantly reduce the breathability of the felt in that location.

Plate A1.2. Damage to a breathable roofing membrane adjacent to a wasp nest

Traditional bituminous Type 1F roofing felt is a non-breathable product and therefore ventilation is required. This can be achieved, even in buildings with vaulted ceilings, but requires some consideration during the design stage. Products to increase the ventilation within roofs where bituminous Type 1F felt has already been installed are also available but should not be considered as the primary ventilation option.

[2] Accessible at: https://www.gov.uk/government/publications/bat-roosts-insecticides-and-timber-treatments/timber-treatment-products-suitable-for-use-in-or-near-bat-roosts
[3] https://www.gov.uk/government/publications/bats-apply-for-a-mitigation-licence#full-publication-update-history:~:text=Use%20of%20safe%20roofing%20membranes
[4] TLX BatSafe requires all joints and cut edges to be taped in order to prevent the fraying of bare edges.

Appendix 3. Bat Records For Submission To Recording Organisations

In accordance with best practice and the requirements of bat licensing, bat records collected during surveys are supplied to the relevant biological record centres and bat groups. The records to be supplied in accordance with this survey are shown below. House names/numbers are not given out by record holding organisations except under very particular circumstances. Please let us know if you object to the distribution of these records.

Date	Species	Site Address	OS Grid Reference	Notes
17/07/2024	Noctule	74 Wakefield Road, Lepton, Huddersfield, HD8 0BL	SE 18559 15765	Pass
17/07/2024	Common pipistrelle	74 Wakefield Road, Lepton, Huddersfield, HD8 0BL	SE 18559 15765	Feeding