20 Tivy Dale, Cawthorne

Bat Survey Report

20th June 2024

Prepared by:

Middleton Bell Ecology, School House, Green Moor, Sheffield, S35 7DQ

Document ref: MBE/BAT/2024/071/01				
Purpose and Description	Originated	Checked	Reviewed	Date
For Planning	R Bell MCIEEM	P Middleton MCIEEM	R Bell MCIEEM	20/06/2024

Disclaimer

This report is issued to the client for the sole use and for the intended purpose as stated in the agreement between the client and Middleton Bell Ecology (MBE) under which this work was completed, or else as set out within the report. This report may not be relied upon by any other party without the express written agreement of MBE. The use of this report by unauthorised third parties is at their own risk and MBE accepts no duty of care to any such party.

MBE has exercised due care in preparing this report, it has not, unless specifically stated, independently verified information provided by others. No other warranty, express or implied, is made in relation to the content of this report and MBE assumes no liability for any loss resulting from errors, omissions or misrepresentation made by others.

Any recommendations, opinion or finding stated in this report is based on circumstances and facts as they existed at the time that MBE performed the work. Nothing in this report constitutes legal opinion. If legal opinion is required, the advice of a legal professional should be secured.

Contents

1. Summary

1.1.1 A bat survey of 20 Tivy Dale, Cawthorne was commissioned by the client Daryl Cheetham on 10th June 2024.

1.1.2 The survey was undertaken to inform proposals to re-develop the existing dwelling at 20 Tivy Dale.

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 itself, however, several notable local roost sites were highlighted.

1.1.5 No evidence of bat roosting was recorded during the visual inspection of the buildings, however, both buildings were 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 buildings.

1.1.6 No further survey effort is considered necessary for the buildings 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.

1.1.7 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.

1.1.8 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 20 Tivy Dale, Cawthorne was commissioned by the client Daryl Cheetham on 10th June 2024.

2.1.2 The survey was undertaken to inform proposals to re-develop the existing dwelling at 20 Tivy Dale.

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 off Tivy Dale in the village of Cawthorne, 6.5 km west of Barnsley town centre.

3. Habitat Assessment

3.1.1 The site comprised a dwelling and outbuilding surrounded by a mature garden with a treeline on the northwest boundary. In addition, extensive woodland intersected by Tanyard Beck was present on the opposite side of Tivy Dale, 15 m southeast of the surveyed dwelling. These habitats comprised prime bat foraging areas, whilst 530 m northwest of the site was the parkland of Cannon Hall including the Cascade ponds along Daking Brook.

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: 20 Tivy Dale, Cawthorne, Barnsley, S75 4EY			
OS Grid Ref. SE 27984 07535	Altitude. 100 m		
Local Planning Authority: Barnsley Council			
Features on site and adjacent to site			
Feature	On site	Adjacent	Comments
Buildings	✔	✔	Located adjacent to other dwellings and village hall
River bordered by trees			Daking Brook 530 m to northwest
Standing water			Cascades at Cannon Hall 530 m to northwest
Bridges tunnels and culverts			Associated with Daking Brook
Trees	✔	✔	Trees located in garden
Woodland		✔	Woodland on opposite side of Tivy Dale
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 buildings.
- The level of bat roost potential associated with the buildings.
- The number and species of bat roosting within the buildings, 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 1.5 km of the site requested from Barnsley Biological Records Centre (BBRC) and within 2 km of the site from South Yorkshire Bat Group (SYBG).

4.2 Field Survey

Internal and External Visual Inspection

4.2.1 The internal and external visual inspected was undertaken on 13th June 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 300m.
- An extensive examination of all parts of the buildings 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 buildings' bat roost potential (negligible, low, moderate, high or confirmed roost).

4.2.3 In addition, any signs of nesting bird usage of the buildings were recorded.

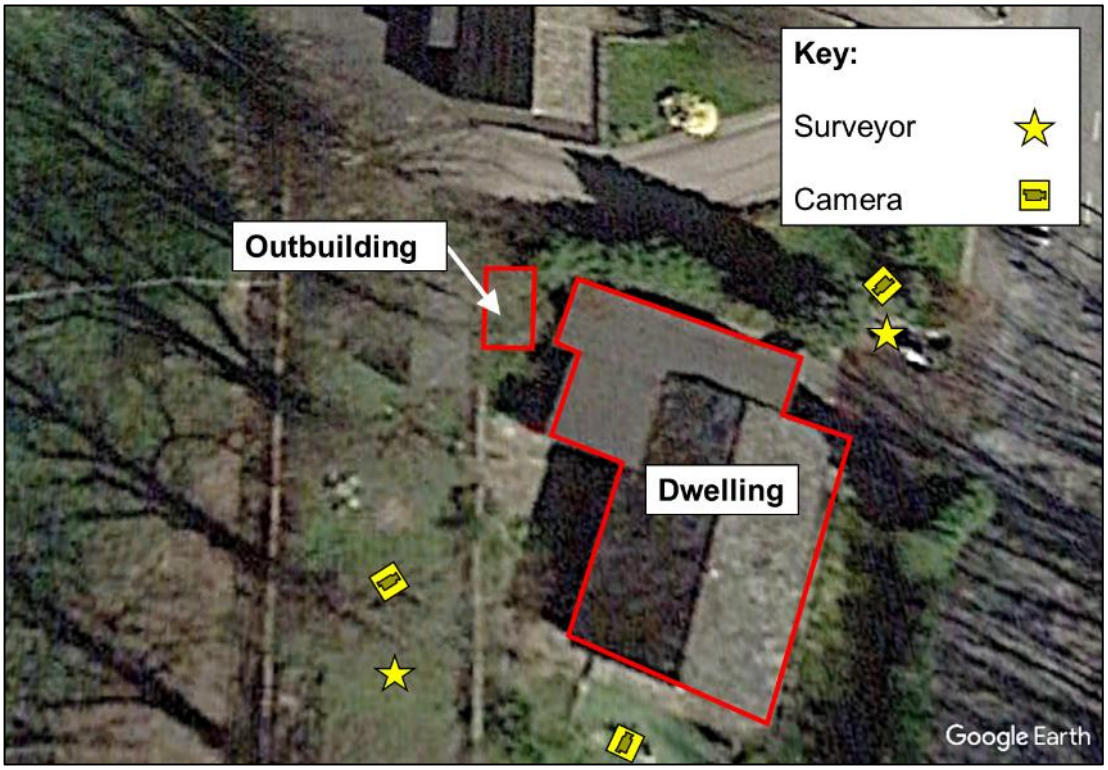
4.2.4 The following equipment was used or at hand during the survey:

- 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 13th June 2024. This survey commenced 15 minutes prior to sunset and continued until 1.5 hours after this time. Two 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 174 bat records were received from SYBG. None of the records received related to the site itself. Species positively identified in the records received included common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula,* brown long-eared bat *Plecotus auritus,* Leisler's bat *Nyctalus leisleri*, Daubenton's bat *Myotis daubentonii,* Natterer's bat *Myotis nattereri* and whiskered bat *Myotis mystacinus*. Two notable bat roost locations close to the site were identified in the records. The building complex 35 m southwest of the site supported a small probable brown long-eared bat maternity roost (3+ bats), several common pipistrelle day roosts and a whiskered bat day roost, with records dated from 2021. In addition, 50 m northeast of the site, a pair of semi-detached dwellings supported a large brown long-eared bat maternity roost (peak count: 105 bats in 1981), with fresh droppings last recorded from this roost in 2021.

5.1.2 A total of 148 bat records were received from BBRC. None of the records received related to the site itself. Species positively identified in the records received included common pipistrelle, soprano pipistrelle, noctule, Leisler's bat, Daubenton's bat, Natterer's bat, whiskered bat and brown long-eared bat. The closest bat records related to the two roost locations already detailed in relation to the SYBG held records.

5.1.3 A search of MAGIC highlighted three bat EPS mitigation licence as having historically been issued for a location within 2 km of the site. Information relating to these three licenses is presented in Table 2.

Table 2. Bat EPS mitigation licences issued for locations within 2 km

Species listed on the licence	Licence start date	Licence end date	What does the licence cover?	Approximate distance (km)	Direction
Common pipistrelle	31/01/2022	31/12/2024	Destruction of a resting place	0.042	Southwest
Common pipistrelle, soprano pipistrelle, whiskered bat, brown long-eared bat	27/03/2018	25/03/2021	Damage to a breeding site and damage to a resting place	1.05	Northwest
Natterer's bat	21/05/2018	31/12/2018	Destruction of a resting place	1.42	West

5.2 Field Survey

Internal and External Visual Inspection

5.2.1 No signs of bat presence were recorded during the visual inspection, however, the dwelling (Figure 2) and outbuilding were considered to display a low level of bat roost suitability.

5.2.2 No bird nests were noted from the surveyed buildings.

Description – dwelling

5.2.3 The dwelling comprised a c.1970s stone built bungalow with cavity walls. The main section of the bungalow had a dual-pitched concrete tiled roof, with a flat-roofed extension on the northeast gable and part of the northwest elevation (Plates 1-3). The main section of the house had over-hanging eaves with fascia boards and barge boards. The wall tops and base of the roof were tightly sealed across the building. On the flat roofed section of the building was a uPVC fascia board with an integrated vent behind. Doors and window frames were uPVC, with double glazed windows throughout. Skylights were present in the roof. Guttering was plastic.

External bat roost potential – dwelling

5.2.4 A range of potential bat roosting features were recorded from the exterior of the dwelling. These features included the following:

- Occasional gaps between vents and the wall behind the fascia board on the flat roofed section of the dwelling (Plate 4).
- A ventilation brick and an alarm box on the southwest gable (Plate 5).
- An uncovered ventilation duct opening on the southeast elevation.
- Very occasional gaps between roof slates.

Internal inspection – dwelling

5.2.5 The roof was lined with Type 1F bituminous felt and suspended on a ridge beam, rafters and battens (Plate 6). The void was c.1.2 m high and c. 400 mm of glass fibre insulation was present on the ceiling. No signs of bat presence were noted, however, occasional tears were present in the felt.

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

Plate 1. Eastern corner of dwelling

Plate 2. Southern corner of dwelling

Plate 3. Western corner of dwelling

Plate 4. Gap behind insect guard on back of fascia board

Plate 5. Air brick and alarm box on southwest gable

Plate 6. Looking south in roof void

Description – single-storey outbuilding

5.2.7 The outbuilding comprised a small single-storey brick structure with a single-pitch stone-slate covered roof (Plate 7). The verge was mortar filled and there was a wooden door on the southwest elevation. Vegetation was growing over the northern end of the building.

External bat roost potential – outbuilding

5.2.8 The only potential bat roost feature noted comprised gaps between the stone slates. These could be comprehensively inspected with a torch, with no evidence of bats seen.

Internal inspection – single storey outbuilding

5.2.9 The roof of the outbuilding was unlined and suspended on rafters and battens. The structure had been used for storage.

5.2.10 The outbuilding was considered to display low bat roost suitability, however, comprehensive inspection during the visual inspection was possible to give confidence in bat roost absence.

Plate 7. South corner of outbuilding

Plate 8. Interior of outbuilding

Nocturnal Survey

13th June 2024 – dusk emergence survey

5.2.1 Sunset was at 21:37. The temperature at the beginning of monitoring was 10 ºC, with a Beaufort Scale Force 3 wind and full cloud cover (8/8). The temperature increased to 11 ºC, during the survey, the wind dropped to Force 2 and cloud cover remained the same. The weather was dry throughout. Sunset was at 21:37.

5.2.2 No bat roosting activity was recorded.

5.2.3 The first bat activity recorded comprised a feeding common pipistrelle bat, seen over the garden to the south of the dwelling at 21:36 (1 minute before sunset). Common pipistrelle were recorded intermittently during the survey after this time. The only other species recorded during the survey comprised a single pass by a bat of an unidentified *Nyctalus* species, heard at 22:23.

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 itself, however, several notable local roost sites were highlighted.

6.1.2 No evidence of bat roosting was recorded during the visual inspection of the two buildings, however, both were 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 buildings.

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

6.2 Legislation and Policy Guidance

Bats

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'.

Birds

6.2.7 All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal (subject to exceptions) to:

- Intentionally kill, injure or take any wild bird.
- Take, damage or destroy the nest (whilst being built or in use) or eggs of any wild bird.

6.3 Further Survey, Recommendations and Enhancements

Bats

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 20 Tivy Dale, in accordance with the aims of the National Planning Policy Framework (2023) and Barnsley Council's Biodiversity and Geodiversity Supplementary Planning Document, 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. In addition it is apparent that strong bat populations of multiple species are present in the immediate area surrounding the dwelling. 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' felts should be used.

6.3.4 The third-party records search showed that habitats along and bordering Tivy Dale are likely to be of importance to light-adverse bat species, notably comprising brown long-eared bat. Consequently, it is recommended that new external lighting be restricted to passive infra-red sensor operated lighting only. 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 boxes.

Birds

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 buildings at 20 Tivy Dale.

6.4.2 No further survey effort is considered necessary for the buildings 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. 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.

[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

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 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

[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.

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.

Appendix 2. 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
13/06/2024	Common pipistrelle	20 Tivy Dale, Cawthorne, Barnsley, S75 4EY	SE 27984 07535	Feeding
13/06/2024	*Nyctalus* species	20 Tivy Dale, Cawthorne, Barnsley, S75 4EY	SE 27984 07535	Pass