



Bat Survey Report
Brookfield
Ford,
Shropshire
SY5 9LG

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Prepared by	For
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1 Purpose and Justification for Survey

Dave Humphries Ltd Architectural Services instructed Angus Andrew of Treetec, on behalf of Rebecca Ford to conduct a bat survey on the building known as Brookfield to inform a planning application for an extension.

The planning and development trigger for bat surveys is satisfied under the following criteria from Box 1 Bat Conservation Trust (BCT), Bat Surveys: Good Practice Guidelines, 3rd edition 2016 and from the Association for Local Government Ecologists (ALGE) template for biodiversity and geological conservation validation checklists 2007;

Conversion, modification, demolition or removal of buildings which are:

- pre-1914 buildings within 400m of woodland and/or water;
- pre-1914 buildings with gable ends or slate roofs, regardless of location

The primary purpose of this survey was to determine the presence or absence of bats and, if present, the extent to which proposed works might impact on this protected species. If a negative impact could be foreseen, the secondary objective of this survey was to make recommendations for further survey work. This appraisal is based on a review of the development proposals and survey details of the site provided by the client or their agents.

2 Site description

The site consists of a detached, residential house in Ford to side of the A458 Welshpool Road. The landscape surrounding the site is rural village surrounded by pastoral and cropped land. There are two bodies of water surrounded by woodland within 150m. The house has mature native and non-native trees and hedgerows. The local area provides good bat foraging habitat.

The buildings had many of the features listed in table 4.1 of the Bat Conservation Trust, Bat Surveys: Good Practice Guidelines, 3rd edition.

- 1) **Features providing a higher likelihood of bats being present:** roof warmed by the sun, close to foraging habitat, dry interiors.
- 2) **Features providing a lower likelihood of bats being present:** no entrances for bats to fly through or access roost spaces, street lighting and security lighting, busy traffic.

On this basis it was considered that the barn has low bat roost potential.

3 Proposed works

The construction of an extension to existing house. The construction of ancillary accommodation. Copies of drawings were provided by the architects.



Figure 1 Site location showing distance to water bodies (Google Maps 2020)

4 Methods

4.1 Preliminary Daylight Roost Assessment

The aim is to assess the actual or likely presence of bats and how they might use a roost site. It involves searching for all known or likely roost locations and looking for evidence of whether they are presently used by bats, by means of internal and external inspection. The method was to;

- 1) locate any possible bat access or egress points
- 2) search for droppings, corpses, scratch marks, urine staining, fur oil grease marks, prey remains and clean cobweb-free gaps around potential entrance points and crevice roost sites.

Close inspection of some cavities was undertaken where necessary, using a Rigid CA-300 video endoscope. The inspections were aided with ladders, a powerful torch and high quality binoculars. The inspection was thorough, and a consistent search effort was applied to all parts of the property. Unobstructed access to all parts of the property was granted.

4.2 Activity Surveys

The surveys were carried out in accordance with the BCT Bat Survey; Good Practice Guidelines 2012. Atmospheric conditions were measured using a digital thermometer and wind gauge. The lead surveyor was Angus Andrew, an experienced, licenced batworker (Level 2 Natural Resources Wales Survey Licence S090110/1 and Natural England Class Licence Registration number 2015-11270-CLS-CLS). Other surveyors included Gail Nichols, a biologist and experienced batworker and Damon Burns trainee bat worker. Each surveyor was allocated a section of building to observe, ensuring total coverage without double counting. Handheld radio transceivers were used to maintain inter-observer contact during surveys.

Dusk emergence surveys were started 30 minutes before sunset and continued for up to two hours ensuring that late emerging species are not missed. A Yukon Ranger Pro 5 x 42 Digital Night Vision scope and Clulite Clubman Deluxe torches with red filters were used where necessary to aid observation and identification of species. No disturbance of bats was carried out immediately prior to the surveys, which might prevent bats from emerging. Dawn surveys, where applicable, were started up to 2 hours before dawn and continued for 20 minutes thereafter.

Handheld, time expansion, full spectrum, bat detectors with built in sonogram display were used to identify and record bat sounds for later computer analysis.

Full-spectrum data provides higher quality and higher resolution time-frequency analysis compared with that from zero-crossing and this further enhances confident species identification (Hundt, BCT Bat Survey Good Practice Guidelines 2016).

The computer software diagnosis of digitally recorded calls was based on criteria in Jon Russ, *The British Bat Calls – A Guide to Species Identification* (2012).

5 Survey Constraints

A preliminary assessment cannot always rule out bat presence on this type of building as bats may roost in those areas that are not accessible other than by a lengthy endoscope or destructive search. Sometimes bats leave no visible sign of their presence even on the inside of a building, particularly where there are hidden cracks, crevices and voids (BCT Bat Survey; Good Practice Guidelines 2016). Parts of the roof space were inaccessible because there was no loft hatch.

6 Results

6.1 Preliminary Daylight Roost Assessment

These types of inspection were carried out on 6th September 2021 during the afternoon in good light, with no limitations on visibility.

The internal search revealed that the buildings had not been subjected to any form of specific cleaning and was in either a natural redundant state or used for storage. No significant collections of droppings were found that would indicate a maternity roost.

The house

A two-storey, stone residential dwelling probably dated to the 19th century. The roofs are part covered in slate and part tiled over a bitmastic felt lining with ceramic ridge tiles. On both gables there is a lean-to section with slate roof. 50% of the roof surface is lit by street lights at night. There are also several security lights around the property. There is one central chimney stack with intact flashings. All the verges are in good condition. The extended part comprises tiles over breathable felt. It could not be accessed and was only viewable from the main roof space through a tear in the felt. There is no insulation in either loft and no light ingress.

There were no bat droppings seen in the loft spaces. The slates and flashings are neat and compact throughout with no defects.

The Outbuilding

Two stone gable ends with a curved sheet steel roof. Wooden sides with sliding doors. No sign of droppings and always kept locked for security. Low potential.

The Toilet

There is a standalone outside toilet made of brick with an unlined slate roof. There were no droppings evident and the apex was festooned with cobwebs.

Photographs of each feature are shown in appendix 1.

Further information in the form of activity surveys during the summer period to ascertain whether bats use the batten gap and possibly emerge from the defects in the gable ends.

6.2 Activity Surveys

One dusk survey of the house was carried out using three surveyors positioned so that all aspects could be viewed simultaneously; one at each gable end and one in the garden.

6.2.1 First Survey: Emergence 8th September 2021

Location	Brookfield	WEATHER	START	FINISH
Surveyors	Angus Andrew, Damon Burns,	Temp (°C)	21	19
Sunset/rise	19:41	Wind (0-12)	0	0
Start	19:18	Cloud (Okta)	6	5
Finish	21:20	Rain (0-5)	0	0

Time	Emergence / entry points. Flight paths. Other behaviour
19:56	Noctule overhead
19:56	Soprano pipistrelle flew into the site from the east
19:58	Noctule overhead Pip 45 flew from neighbours
20:10	Noctule overhead
20:17	Noctule overhead
20:17	Soprano pipistrelle one pass. Unseen
20:25	Soprano pipistrelle flew over roof
20:42	Noctule HNS
21:03	Common pipistrelle - HNS
21:05	Noctule foraging by street lights until end of survey

Summary: No bats were seen to emerge. A soprano pipistrelle flew in from the neighbours and common pipistrelles were occasionally active along the road and around the garden during the latter part of the survey. Noctules were foraging around the street lights throughout the survey.

7. Impacts

The impacts at a site level are low and at a local level low. There was no evidence of bats in the buildings of Brookfield. The roof spaces seem to be too well sealed. There was a low level of surrounding bat activity with pipistrelle and myotis bats occasionally recorded during the activity survey.

The intention is to extend this building and construct another further north. Pipistrelle bats were seen to use parts of the garden for foraging despite the street, house and security lighting but mostly avoided this area to feed by the brook. Post development changes are unlikely to cause disturbance to bats that already seem to tolerate the lit conditions together with regular traffic noise as long as they have unfettered access to the unlit brook. It would however help other bat species to frequent the site if the security lights on the property were less sensitive to fast moving objects like bats and more downward facing.

The ancillary accommodation is close to the observed bats flight lines and it is important that lighting is minimised to preserve the foraging habitat of the brook for bats and other species. Bankside trees will only provide limited night time shade. This means no large bay windows or patio doors if they were to illuminate the brook.

8. Mitigations and enhancements

A protected species licence will not be required as a derogation for these works. There is no disturbance or loss of roosts envisaged by breaching this roof.

The weatherboarding on both the extension and the ancillary accommodation can provide good opportunities for crevice dwelling bats if the construction method is correct. The battens must not be mounted onto a breathable membrane as these can incarcerate bats via entanglement.

For alternative roosting, capacity, a Schwegler 1FR bat tube or equivalent will be placed on the east gable of the ancillary accommodation. Pipistrelle and myotis bats are known to use these boxes. They should be situated at least 3m high up the walls but not within half a metre of the eaves to avoid predation. The 1FR Bat Tube is designed to be installed on the external walls of buildings, either flush or beneath a rendered or boarded surface. This makes it ideal for situations where you wish the box to be discrete as only the entrance hole need be visible.

Lighting

To avoid undue disturbance to bat populations that forage and commute in the site surrounds, external lighting should be avoided or minimised throughout the site. Where required it must be fixed at low levels with light spread kept below the horizontal using cowls, hoods, screens or simply by downward directionality. Bulbs should be low intensity with a narrow or UV reduced spectrum (<150W, high or low pressure sodium types or LEDs). LED lamps are preferred and effectively reduce light spill and can be set for use with precise directionality. PIR systems [if applicable] should be set on a short

timer and responsive only to larger moving objects. No light should project onto the incorporated bat box or onto the brook which is a key foraging area several species of bat.

9. Reference

Collings, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edition, Bat Conservation Trust

Appendix 1



Rear Elevation



Front Elevation

Figure 2 Proposed extension (top) & ancillary accommodation (below)



Figure 3 South elevation



Figure 4 North west gable



Figure 5 North east gable



Figure 6 West gable loft space



Figure 7 East gable loft space



Figure 8 Outside toilet



Figure 9 Outside toilet



Figure 10 Storage shed N elevation



Figure 11 Storage shed S elevation



Figure 12 Inside storage shed



Side Elevation

Figure 13 Location of bat tube in ancillary accommodation gable end

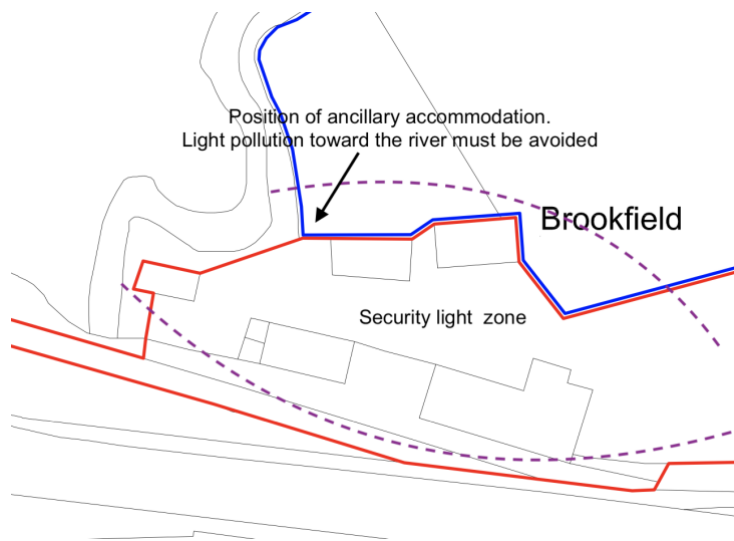


Figure 14 Flight paths over existing

Appendix 2 Legislation

General, rather than comprehensive, guidance on the legislation relating to bats, is provided here. When dealing with individual cases, readers should consult the full texts of the relevant legislation, and obtain legal advice if necessary. They should also check for recent changes to legislation and guidance.

The Habitats Directive and respective domestic legislation

Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (EC Habitats Directive) lists animal and plant species of Community interest, the conservation of which requires the designation of Special Areas of Conservation (SACs); Annex IV lists animal and plant species of Community interest in need of strict protection. All bat species are listed in Annex IV; some are listed in Annex II.

In the UK, the EC Habitats Directive has been transposed into national laws by means of the Conservation of Habitats and Species Regulations 2017 (England and Wales). This is commonly known as the 'Habitats Regulations'; this term will be used in this document.

2.3.2 The Wildlife and Countryside Act 1981 (as amended)

The Wildlife and Countryside Act 1981 (as amended) was enacted to transpose into UK law the Convention on the Conservation of European Wildlife and Natural Habitats (commonly referred to as the 'Bern Convention'). The Act has been amended and only a small number of offences now apply to bats, which are listed in Schedule 5.

What the legislation means

In summary, these legislations combined make it an offence to;

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; damage or destroy bat roosts or resting places of bats;
- keep, transport, sell or exchange, or offer for sale or exchange, any live or dead bat, or any part of, or anything derived from such a wild animal.
- intentionally or recklessly obstruct access to a bat roost;
- deliberately disturb any bat, in particular any disturbance which is likely to (i) impair their ability to survive, breed, reproduce or to rear or nurture their young; or in the case of hibernating or migratory species, to hibernate or migrate; or (ii) to affect significantly the local distribution or abundance of the species to which they belong.

Activities that may result in the above offences taking place can in some instances be permitted. However, a strict process of licensing must be followed for this to be lawful. Some species of bat found in the UK (greater and lesser horseshoe bats, barbastelle and Bechstein's bat) are listed on Annex II of the Habitats Directive, which means that their conservation requires the designation of SACs. Even where these species of bat occur outside SACs, their inclusion on Annex II serves to underline their conservation significance.