Bat Survey for Glossop Central Methodist Church, Chapel Street, Glossop

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produced free of charge by

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Executive Summary

Mampam Conservation conducted bat surveys free of charge at the Glossop Central Methodist, Glossop, in relation to a planning application to make alterations to the roof of the building. The survey found a roost, presumed to be used by *Pipistrellus pipistrellus* bats, that was not occupied at the time of the surveys. *P. pipistrellus* forage and commute throughout the site, no other species of bat were recorded. The available evidence suggests that the roost is not one defended by males during the summer. The absence of droppings since the site was cleaned suggest it is unoccupied from at least May to September. The presence of conspicuous piles of droppings indicates occupancy by a group of bats, and therefore it seems probable that the roost is used in early spring, prior to the formation of maternity roosts.

No details of the proposed work on the roof have been provided. If the proposed development will result in damage or destruction of the roost a European Protected Species licence and appropriate mitigation would be required. Any direct disturbance to the roost while it was occupied by bats would also require a licence. It is recommended that a condition be imposed on the development to ensure that the proposed works do not disturb bats whilst they are resident at the roost.

This report provides information on bats necessary to inform the development proposal and makes specific recommendations about constraints that should be applied to any permitted development.

Introduction

On 7th July 2014 the author was contacted by SJ Design Limited in relation to re-roofing works on the flat areas of the Central Methodist Church in Glossop. Because the building is a valuable community resource, and because a bat survey commissioned for another local church (HPK/2012/0374) was wholly inadequate and failed to detect the presence of a large active maternity roost less than 50cm from the site boundary, the author agreed to conduct bat surveys in support of the development free of charge.

Site Description

The site is on Chapel Street in Glossop, Derbyshire (Figure 1). It consists of a post war church building, with associated offices and kitchen, grassed areas and a hard standing car park. There is a treeline running east west to the south of the site, along the Glossop Brook.

Proposed Works

The proposed works involve renovation and replacement of the flat roof areas of the church

Aims of Survey

The aims of the survey were:

- To provide sufficient information on the potential effects of the proposed development on bats to allow planning permission to be considered.
- To identify if European Protected Species licences (issued by Natural England) for development purposes will be required in respect of bats at the site.

- To assess the impacts of development on roosting, foraging and commuting bats.
- To provide appropriate mitigation, recommendations and enhancement measures for bats.

The objectives of the survey were:

- To identify if there are any historical records of bat roosts within the vicinity of the site;
- To identify how bats are utilising the site;
- To identify the species of bats utilising the site; and
- To identify if there are any roosts present within the site boundary, to determine the type of roost and its size.

Methods

Summary of survey methods

Bat activity at the site was assessed by watching and listening to bats using the equipment listed below. Surveyors attempted to cover as much of the site as possible at all times that bats were likely to be active. All sound (except heterodyne detection) and video monitoring was recorded and saved in electronic format.

Equipment used

The following equipment was used for bat surveys at the site:

Night Vision Equipment

Sony HDR-SR11 video camera with nightvision facility.

Bat Detectors

2 x ultrasound recorders (Dodotronic Ultramic 200/250 and netbooks)

1x heterodyne bat detectors (Pettersson D240X, Ciel CBD101R2, 2 x Magenta Bat 4)

1x Time Expansion bat detector (Pettersson D240X)

Other Equipment

VO Scope VO3610WW Endoscope

Torches with red filters

SLR and camera phones

Pre-survey data search

To inform this survey I referred to:

HPBC planning portal – for records of other bat surveys in the area (didn't take long).

Glossop Bat Group records – Records of bats in Glossop

Derbyshire Wildlife Trust was not contacted for records of local bat roosts because it wouldn't have been free and their records are entirely inadequate for the Glossop area.

Surveyor Information

Daniel Bennett B.Sc (Hons), Ph.D.

Daniel has experience of bat surveys since 1996. He was trained in bat survey techniques by Professor Paul Racey, and was awarded a first class Honours degree in Zoology (1997) from the University of Aberdeen and subsequently a Ph.D. from the University of Leeds. Daniel has practised internationally in field and research ecology and ecological consultancy for over 20 years, including bat surveys using a variety of methodologies since 1996. He has carried out bat surveys throughout the UK and in many areas of the world with Mampam Conservation. He is the author (with Jon Russ) of a guide to the Bats of Madagascar, and has given numerous lectures, presentations and workshops about bats worldwide. He has held bat licences from Natural England , Scottish Natural Heritage and the Northern Ireland Environment Agency.

Field Surveys

The assessment criteria set out by the Bat Conservation Trust was followed throughout (Hundt 2012).

Habitat Survey

The purpose of the habitat survey was to identify features on the site of potential importance to bats. The habitat survey was conducted on 20 July 2014 in the morning. All features, vegetation and man made structures located within the

survey boundary as illustrated in Figure 1 were assessed and considered in the context of the surrounding environment. Because it was immediately obvious that none of the vegetation on site was suitable for roosting by bats, no structured habitat survey was conducted.

Roost Surveys

Roost surveys followed assessment criteria set out by the Bat Conservation Trust (Hundt 2012).

The purpose of roost surveys was to identify actual or potential bat roosts at the site. The survey included all buildings and trees located within the survey boundary as illustrated in Figure 1. Dates and times of surveys are given in Table 1.

Features were assessed visually and accessible crevices deemed suitable for bats were investigated with a flexible endoscope. Potential crevices were monitored by eye, with night vision equipment and with ultrasonic microphones. Night vision equipment was pointed at likely roost access points from positions given in Figure 2. Bat detectors (Ultramic 200/250 and Petersson D240X) were attached to recording devices and positioned at areas of buildings considered suitable for bats (given in Figure 2). Sound recordings were subsequently scanned using Wavesurfer software. Video recordings were assessed using standard editing software.

Activity Surveys

Activity surveys followed assessment criteria set out by the Bat Conservation Trust (Hundt 2012).

The purpose of activity surveys was to identify which species of bats used the site and what they used it for. The survey included the area within the survey boundary as illustrated in Figure 1 and immediately adjacent areas with public access. Dates, times and conditions of activity surveys are given in Table 1.

The small size of the site made transects for activity surveys unnecessary. The surveyor walked around the site and made observations on bats using ultrasound recorders, bat detectors and, where necessary, torches with red filters. Positions of ultrasound recorders is given in Figure 2. The surveyor recorded flight paths and used clues from bat detectors and biological intuition to interpret activity as foraging, commuting or social activity.

Date	Activity	From	To	Temperature
17th July 2014	Roost & activity survey	21:00	22.50	NOT AVAILABLE
18th July 2014	Roost & activity survey	04:00	05:30	NOT AVAILABLE
22nd July 2014	Roost & activity survey	04:00	05:30	NOT AVAILABLE

Table 1. Timing and climatic conditions of surveys.

Results

Pre-survey data search: Records from Glossop Bat Group

Pipistrellus pipistrellus	85-115 Sheffield Road, some adjacent houses on Woodcock Grove, Glossop
Plectotus auritus, Pipsitrellus pipistrellus, probably P.pygmaeus and Myotis spp.	Volcrepe - Woods Mill-both sides of Milltown, Glossop
Pipistrellus pipistrellus	The Globe, High Street West, Glossop

Pipistrellus pipistrellus	Lodge House Moorfield, Derbyshire Level, Glossop
Pipistrellus, probably Plecotus	Gnat Hole Farm Barn, Glossop
Unknown	Glossop Baths, Dinting Road, Glossop
Pipistrellus pipistrellus	Bridge, Market Street, Glossop to Victoria Bridge, under car park
Unknown	New Bridge at Shirebrook Park
Unknown	Talbot House, Talbot Road, Glossop
Unknown	Glossopdale Community College, Talbot Road, Glossop
Pipistrellus pipistrellus	Shire Hill Quarry, Snake Pass, Woodcock Road, Glossop
Plecotus auritus	Gorse Way, Shirebrook Park, Glossop
pipistrellus	Appleton Drive, Shirebrook Park
unknown	Spire Hollin, Glossop
pipistrellus	Hall Meadow Road, Glossop
Pipistrellus pipistrellus	91 Charlestown Road Glossop
probably Plecotus	Barn at Jumbles

Pipistrellus pipistrellus	St Christophers/St James,
Unknown	Melandra Castle Farm, Gamesley, Glossop
Unknown	Top Floor, Luxlux, Howardtown Mill
Pipistrellus pipistrellus	Glossop Brook from Victoria Bridge under car park to Market Street Bridge.
Pipistrellus pipistrellus	Next to Zion Church, 6 Simmondley Lane
Pipistrellus pipistrellus	83 and 89 Marple Road Chisworth
Pipistrellus pipistrellus	1st house on Royle Avenue, south side

Field Surveys

Habitat Description

The church is of postwar construction with walls of brickwork or concrete paneling. Flat roofed areas are felt lined, with or without metal bargeboards, Window frames are plastic.

Extensive growths of Japanese knotweed occur just outside the southern site boundary, along the northern bank of Glossop Brook.

Roost Survey

Trees

No trees on the site have the potential to support bats and are classed as Category 3 under the definitions given in Table 8.4 of Hundt (2012). No evidence of perching bats was found under trees.

Exterior

No evidence of bats was on or around the exterior of the building and no obvious access points to the interior of the buildings were identified. Roosting opportunities were limited to crevices between concrete panels and window frames, roof lips and soffit boards.

In May 2014 staff at the church had contacted pest controllers after finding what they thought were rodent droppings around a window in the southeast of the building. The pest controller told them they were bats droppings and subsequently the area was thoroughly cleaned. No bats droppings were found in this area during the survey, despite intensive searches.

Activity Surveys

One species of bat was recorded at the site: common pipistrelle bat (*Pipistrellus pipistrellus*).

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Common pipistrelle bat

Common pipistrelle bats were the only bat species recorded in echolocation surveys. They were observed foraging around and commuting through the site. Foraging occurred throughout the site and was more or less constant, concentrated in the car park area and grassed areas to the south of the church. No bats approached or entered the roost during the surveys.

Assessment

Constraints on survey information

This survey was conducted during July and does not represent an assessment of total bat activity at the site. Bats are highly mobile animals and *Pipistrellus* bats shift roosts regularly.

Because of health and safety considerations many crevices in the building could not be examined. These include the entire external structure above head height. A small gated area to the southwest of the building was not accessible.

Constraints on equipment used:

The equipment used is sufficient to detect all bat species known to occur in the U.K.

There were some constraints on data collected by recording devices due to limited battery power and storage capacity (see Appendix 4).

Potential impacts of development

In absence of mitigation, the following potential impacts have been identified.

1 **Short--term impacts.** Without precautionary timing this development could result in disturbance to an unknown number of *Pipistrellus pipistrellus* bats through increased noise, light, dust and vibration at the site.

The impact on bats at a local scale is expected to be low.

2 **Long--term impacts: Roost modification.**
The proposed roof works are not expected to result in modification to the roost.

No long term impacts on bats at a local scale are likely.

3 **Long--term impacts: roost loss.** The proposed roof works are not expected to result in loss of the roost.

4 **Long--term impacts: fragmentation and isolation.** There are no fragmentation or isolation issues relating to this development.

5 **Post--development interference impacts.** There are no fragmentation or isolation issues relating to this development.

6 **Predicted scale of impact on species status at the site, local county and regional levels.** The impact of this development is predicted to be low at local level other bat species.

Designated sites

The development is too distant to have any detrimental effect on populations of bats at designated sites.

Roosts

Pipistrellus bats are highly mobile and no roosts in Glossop appear to be permanently occupied. *P. pipistrelle* bats share mixed sex roosts immediately after emerging from hibernation, but males are excluded from maternity roosts during parturition and nursing (April onwards). Male *P. pipistrellus* bats are highly territorial and attempt to establish territories in preparation for the mating season in late summer. Consequently successful males occupy a fixed roost from about June to September at which females aggregate towards the mating season. At this time of year, whilst the males use the same roost every day, females frequently switch roosts. Less successful males maintain roosts that are rarely or never visited by females.

The available evidence suggests that the roost is not one defended by males during the summer. The absence of droppings since the site was cleaned suggest it is unoccupied from at least May to September. The presence of conspicuous piles of droppings indicates occupancy by a group of bats, and therefore it seems probable that the roosts is used in early spring, prior to the formation of maternity roosts. This can only be verified by follow up surveys.

The development may involve disturbance of a pipistrelle bat roost and will require a detailed mitigation strategy and appropriate licensing obtained if bats are using the roost during the timing of works .

Foraging and commuting habitat

The surrounding provides excellent foraging habitat *for P. pipistrellus* bats and is approximately 200m west of a large roost complex comprised entirely of *P. pipistrellus* bats. No data on local population size is available, but consistently high levels of foraging activity have been recorded in the Sandhole/Harehills Park area at six of seven surveys conducted by the author since March 2012.

Glossop Brook and the associated treeline provide what appears to be a major commuting route linking roosts with foraging habitat. Along Glossop Brook *P. pipistrellus, P. pygmaeus, Plecotus autitus and Myotis spp*. have been recorded east of Victoria Bridge but only *P. pipistrellus* has been recorded west of Victoria Bridge (as far as Dinting – Bennett et al 2102). Artificial light disturbance has been suggested as the reason for these differences(e.g. Boldogh *et al. 2007*; Kuijper *et al.* 2008; Stone *et al.* 2009).

Legislation and policy guidance

Bats receive very strict protection under European and English law. The following legislation is relevant to bats at this development:

EC Council Directive 92/43/EEC1992 (Habitat Regulations)

Conservation of Habitats and Species Regulations, 2010

Wildlife and Countryside Act, 1981 (as amended)

Countryside and Rights of Way Act, 2000

Natural Environment and Rural Communities Act, 2006

These laws make the following activities illegal:

- Catch, kill or hurt bats
- Do anything likely to disturb bats or impair their ability to survive, reproduce, hibernate or migrate
- To cause significant detriment to the local distribution and abundance of bats of any species.
- Damage or destroy any place that has been used by bats as a roost.
- Obstruct any entry to a roost.
- Own or be involved in the sale or exchange of live or dead bats and their derivatives.

Some of the above activities are permitted by licences issued under the Habitat Regulations by the Wildlife Licensing Unit of Natural England. These licences are known as European Protected Species (EPS) licences and are issued subject to three tests.

1. Need to perform the activity for reasons of overriding public interest (primarily health and safety, economic, social or environmental reasons.
2. No satisfactory alternative to the activity.
3. The activity will not be detrimental to the favourable conservation status of the species.

Recommendations and Mitigation

1. **The site contains a bat roost that cannot be damaged or destroyed without an EPS licence issued by Natural England. It is illegal to block the entrance to the roost or disturb it when bats are likely to be present.**

2. **Long term monitoring of the roost at the site should be conducted to establish pattern of seasonal use and rates of occupancy by bats. This could be carried out by church members without specialist training and minimal equipment.**

3. **No information on proposed works to roof have been provided. If the proposed work is likely to cause damage to the roost an EPS licence will be required.**

4. **If not: Noise and vibration caused by the proposed works would disturb any bats occupying the roost. If works were conducted while bats were occupying the roost, an EPS licence from Natural England would be required. A condition limiting work to summer (May-September) and winter (November to February) months would eliminate the need for an EPS licence in this case. This condition could be varied according to information obtained from subsequent surveys.**

5. **If there is any doubt about the risk of disturbance, the advice of a competent authority should be sought.**

6. **For planning application purposes, this survey has adequately assessed the risk to bats at the site and provided a suitable outline mitigation strategy.**

7. **A condition limiting external lighting to the southern aspect of the building should be imposed to avoid disturbance to bats.**

8. **To ensure non disturbance of bats the site should be surveyed by a competent person for two days immediately prior to works commencing.**

9. **If bats are discovered during work, all activity must cease immediately and the advice of a competent person sought**.

Further Survey

Further surveys are required to establish how this roost is used. These surveys can be conducted very simply by volunteers/site owner and guidance will be given on request.

1. Fecal survey: Plastic sheeting placed below the roost will enable any droppings to be easily detected. The sheeting should be inspected weekly.
2. Roost watch. The roost should be monitored visually and with a heterodyne bat recorder at least once per month between February and November for one hour after sunset or for one hour before sunrise. The time of the earliest/latest bat calls detected should be recorded.

3. The advice of a competent and experienced person should be sought if droppings are found on the sheet or if a bat is seen entering or emerging from the roost.

Mitigation measures

Proposed mitigation for roost sites

Assuming no destruction/damage of roost:

Implementation of monitoring scheme (see above)
Provision of bat boxes around the site
Control of external lighting along Glossop Brook

Proposed mitigation for foraging and commuting habitat

No mitigation is required for foraging and commuting habitat if recommended lighting conditions are imposed.

Summary

The site contains a single roost used by a unknown number of *Pipistrellus pipistrellus.* The roost may not destroyed, nor may bats in the roost be disturbed without a specific licence issued by the Licensing Unit of Natural England. For the development to proceed Natural England must be convinced of the likelihood of the proposed mitigation measures being successful.

Regular monitoring of the roost is necessary to determine its importance and patterns of use. This work does not require specialist supervision if care is taken not to disturb the roost

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Glossary or Definition of Terms

Common Pipistrelle bat - *Pipistrellus pipistrellus*

Appendix 1. Figures

Figure 1: Plan of site.

Figure 2. Position of ultrasound detectors (numbers) and night vision equipment (letters) during the survey.

Figure 3. Map showing location of nearby roosts (red) and site location (yellow)

Figure 4. Southeast wing of Central Methodist Church.

Figure 5. Details of crevice above window frame – left side

Figure 6. Details of crevice above window frame – right side