



Bat emergence and re-entry surveys, and remote monitoring

No. 8 Bank Street, St Columb Major

July 2016

A report by

Colin Hicks BSc (Hons) MCIEEM, Principal Ecologist
(Natural England licence no: 2015-15857-CLS-CLS)



Report details

Site name: No 8 Bank Street
Site address: No 8 Bank Street, St Columb Major, Cornwall TR9 6AU
Grid reference: SW 913 637
Survey dates: Preliminary visual assessment – 24th June 2016
Remote monitoring period – 5th to 21st July 2016
Dusk emergence survey – 5th July 2016
Dawn re-entry survey – 21st July 2016
Surveyors: Colin Hicks BSc (Hons), MCIEEM (Natural England licence no: 2015-15857-CLS-CLS)
Michael Sanders BSc (Hons), (Natural England licence no: 2016-24281-CLS-CLS)
Yolande Knight PhD
Report date: 2nd August 2016
Report Author: Colin Hicks BSc (Hons), MCIEEM

Declaration of compliance

BS 42020:2013

This study has been undertaken in accordance with British Standard 42020:2013 Biodiversity, Code of practice for planning and development.

Code of Professional Conduct

The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental

expressed are our true and professional best and opinions

The findings of this report are valid for 12 months from the date of survey. If a European Protected Species (EPS) is identified, the findings of this report are valid for 12 months from the date of survey. If a period, updated surveys by a suitably qualified person should be undertaken to ensure that the findings of this report are still valid.

Non-technical summary

Western Ecology was commissioned in late June 2016 to complete a preliminary visual assessment for bats and breeding birds of No 8 Bank Street, St Columb Major in Cornwall. During this survey it was noted that bat droppings were present within the southern roof void. Based on this evidence, it was determined that additional bat surveys would be required.

This report documents all survey work at this site and provides a full assessment of roosting bats and breeding birds. This report also provides an outline of the required mitigation to allow development associated with this structure to proceed in a lawful manner.

Bats

The survey work was completed during July 2016 during which time it was found that No 8 Bank Street supports the following bat roosts:

- Natterer's day roost occasionally used by a single bat.

If the re-roofing works can be carried out to comply with the mitigation measures contained in this report, no special licence or other special licence is not required for the proposed works.

- Bats are not killed or injured during the process

been commenced within this period. updated surveys by a suitably qualified ecologist are

Feral Pigeon have nested here and may return. Mitigation is suggested within the report.

Table of contents

1. Introduction	5
1.1. Background.....	5
1.2. Site description	5
1.3. Proposed works	6
1.4. Survey aims	6
2. Methods.....	7
2.1. Visual assessment for bats	7
2.2. Dusk emergence and dawn re-entry surveys	7
2.3. Remote monitoring.....	8
2.4. Nesting birds.....	8
2.5. Desktop search	8
2.6. Surveyors.....	9
3. Results.....	10
3.1. Preliminary visual inspection for bats	10
3.2. Dusk emergence and dawn re-entry surveys	11
3.4. Remote monitoring.....	12
3.5. Summary of bat survey results, interpretation and evaluation	12
3.6. Nesting birds.....	14
4. Assessment	15
4.1. Survey constraints.....	15
4.2. Assessment of potential impact on bats	15
4.3. Assessment of potential impact on nesting birds.....	15
4.4. Legislation.....	16
5. Recommendation and mitigation.....	17
5.1. Bats	17
5.2. Nesting birds.....	19
References	19
Appendix 1.....	21
Appendix 2.....	23

1. Introduction

1.1. Background

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During this survey it was noted that bat droppings were present within the southern roof void. Based on this evidence, it was determined that additional bat surveys would be required.

This report documents all survey work at this site and provides a full assessment of roosting bats and breeding birds. This report also provides an outline of the required mitigation to allow development associated with this structure to proceed in a lawful manner.

This survey has been prepared in accordance with the Bat Conservation Trust's "Bat Surveys Good Practice Guidelines" (Collins, 2016).

1.2. Site description

No 8 Bank Street is located at the northern end of St Columb Major, a small town 8km to the east of Newquay in Cornwall (Plan 1). It is surrounded to three sides by properties within the town, although to the west these quickly give way to open countryside, whilst a church graveyard is located along part of the southern edge of the building. The nearby countryside appears to be managed as livestock grazing with small fields and tall hedgerows that are likely to accumulate flying insects in sufficient numbers for foraging bats. These hedgerows link into significant areas of woodland to the west, that is likely to provide optimal foraging



Plan 1. The location of No 8 Bank Street



Plan 2. The built structure considered within this report.

1.3. Proposed works

It is proposed that the roof on No 8 Bank Street (Plan 2) will be replaced.

1.4. Survey aims

To ensure that the proposed development does not adversely affect bats and breeding birds the survey will:

- Identify the past and/or current use of the site by bats and breeding birds;
- Assess the likely impact of the proposed development on and breeding;
- Provide a basis upon which to propose further survey work or mitigation, should they be affected by the development.

If bats are found, the survey will also determine if a European Protected Species licence will be required for the proposed works to proceed lawfully

2. Methods

2.1. Visual assessment for bats

All areas of the building were carefully examined internally and externally for signs of use by bats with the aid of torches by a suitable qualified and licenced ecologist. This included a search for bat droppings, feeding remains, urine stains and polished/scratched woodwork. A search was also made for individual bats as well as potential access points and cavities capable of providing a roosting space for bats.

This survey method complies with guidelines produced by the Bat Conservation Trust (Collins, 2016).

The survey was completed between 15:00 and 16:00 on 24th June 2016 with an air temperature of 15°C, light S wind, dry and sunny.

During this initial assessment, droppings that suggested that this building may be used by bats were found within the roof void above the southern end of the building. To allow full characterisation of this roost, further surveys were recommended.

2.2. Dusk emergence and dawn re-entry surveys

These surveys consist of a sufficient number of experienced bat surveyors monitoring a built structure for bat activity. BatBox Duet heterodyne bat detectors and an Echo Meter Touch time expansion bat detector, attached to an iPhone 5C running the Echo Meter app, are used during the surveys. The surveyors, including at least one licenced bat ecologist, are stationed around the building in such a way that any bat leaving or entering the structure is likely to be observed (Plan 3). In the case of dusk emergence surveys, the survey normally begins 15 minutes before sunset and continues until at least 90 minutes after sunset or when light levels are so low that any emerging bats cannot be seen. Dawn re-entry surveys began approximately 90 minutes before dawn and continued until 20 minutes after sunrise.

This survey methodology complies with guidelines produced by the Bat Conservation Trust (Collins, 2016).

Emergence survey

The emergence survey was completed between 21:15 and 23:05 on 5th July 2016. Sunset was 21:31 and the weather was calm, dry, 100% cloud cover and a start temperature of 19°C and a finish temperature of 14 °C.

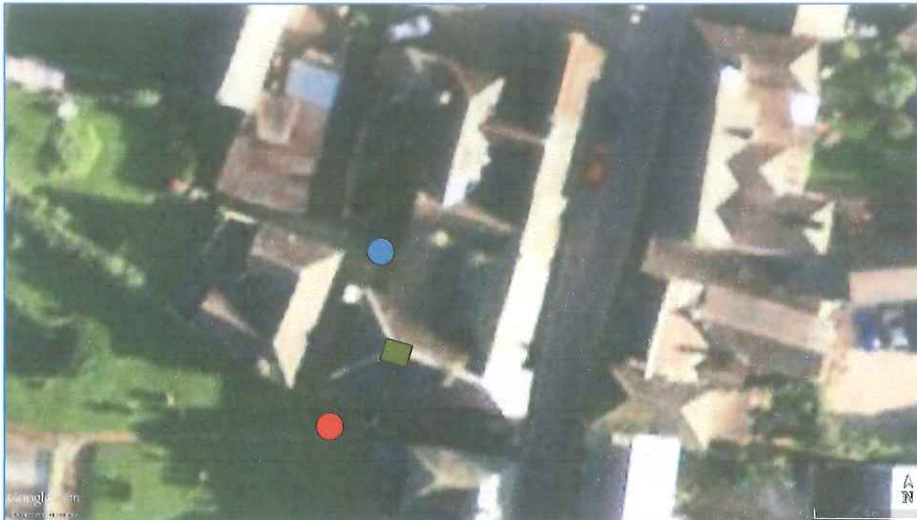
Surveyors:

- Colin Hicks MCIEEM, Natural England licence no: 2015-15857-CLS-CLS with 8 years of bat survey experience.
- Michael Sanders, Natural England licence no: 2016-24281-CLS-CLS with 3 years of emergence survey experience.

Dawn re-entry survey

The dawn re-entry survey was completed between 04:00 and 05:45 on 21st July 2016. Sunrise was 05:34 and the weather was calm, dry, overcast and a start and finish temperature of 17°C.

- Michael Sanders, Natural England licence no: 2016-24281-CLS-CLS with 4 years of bat survey experience.
- Yolande Knight PhD with 3 years of bat survey experience.



Plan 3. Location of surveyors. Colin Hicks/Yolande Knight were at the red position and Michael Sanders at the blue position. The remote monitor location is shown in green. No surveyors were located to the east of the building as this is an extremely well-lit street within the town with little in the way of potential access points for bats.

2.3. Remote monitoring

A Wildlife Acoustics SMZC remote bat detector (Serial no: SMZC00267) was deployed into southern roof void of No 8 on 5th July and left to permanently record for a period of 14 days and nights.

Following deployment, the data was downloaded and the resultant sonograms analysed to determine which bat species had been recorded within the building during the deployment period and their patterns of activity.

Sonogram analysis was completed using Anlook software (v4.1z) by Colin Hicks CIEEM who has more than 8 years of experience in sonogram analysis during which time he has analysed more than 150,000 calls.

2.4. Nesting birds

The building was searched for evidence of nesting bird species.

2.5. Desktop search

A biological records search was not considered appropriate due to the highly mobile nature of bats. It is assumed that all species of bat that are present in Cornwall could be active

within the vicinity which includes Barbastelle, Serotine, Noctule, Lesser Horseshoe, Greater Horseshoe, Common Pipistrelle, Soprano Pipistrelle, Nathuisus Pipistrelle (very rare), Whiskered, Brandt's, Natterer's, Daubenton's, Brown Long-eared and possibly Grey Long-eared.

It is very unlikely when considering the location and structure being assessed that a data search would provide further meaningful information.

Data was obtained on the general distribution of bats recorded here from the National Bat Monitoring Program Annual Report 2016.

If a European Protected Species licence is required for this site, a biological records search for bats will be completed with the local records centre to support the licence application.

2.6. Surveyors

The bat emergence survey was completed by Colin Hicks and Michael Sanders and the re-entry survey by Yolande Knight and Michael Sanders.

Colin Hicks is a Member of the Chartered Institute of Ecology and Environmental Management (MCIEEM), an ecologist with 18 years of professional experience and qualified as having the required Competency for Species Survey as outlined by the Chartered Institute of Ecology and Environmental Management. Colin Hicks holds a Level 2 Class Licence in relation to bats which permits the surveying of bats using artificial light, endoscopes, hand, and static hand nets.

Michael Sanders has 8 years of experience carrying out environmental investigation work and ecology surveys in the water industry, the Environment Agency and for Western Ecology. He has 4 years of bat survey experience and holds a Level 1 Class Licence which permits the surveying of bats using artificial light.

Yolande Knight has a PhD in plant genetics with 25 years of experience in academic biological research and education, and is a keen naturalist. She has been assisting on bat emergence surveys for the last 4 years.

3. Results

3.1. Preliminary visual inspection for bats

No 8 Bank Street is a two storey, semi-detached structure with a large hipped slate roof to its south, with two smaller slate roofs to its north, intersecting the hipped roof at right angles and separated by a small leaded channel.

The building is approximately 16 metres deep, 16 meters wide and 6 metres high and has a single storey extension to the rear with a mineralised felt roof. Beneath each slate roof are roof voids, the largest of which is beneath the hipped roof in the south of the building. This is a high void, un-cluttered with the northern pitch of the roof lined to its underside with a breathable membrane, whilst the southern pitch was unlined. Two accumulations of Long-eared droppings were found here along with an accumulation of Yellow Underwing *Noctua pronuba* wings (Plan 4). The void was cold and draughty with light visible along the eaves to the west, south and north.

Other voids associated with No 8 were much smaller, extremely cobwebby and cluttered, whilst the slate roofs were unlined. No bats or signs of bats were found associated with the other roof voids, and they have little potential due to their low nature.

To the exterior, hanging slates weatherproofing the walls have some gaps with potential for crevice roosting bats.



The western aspect of No 8 showing one of the two smaller roofs



Eastern aspect as seen from Bank Street showing the other small roof



Larger hipped roof on the southern side of the building



Most of the slate roofs were unlined to the inside



The northern pitch of the southern roof was lined with a breathable membrane



Accumulation of Long-eared bat droppings in the roof void beneath the southern roof

3.2. Dusk emergence and dawn re-entry surveys

Evidence was found during the preliminary visual assessment to suggest that bats have roosted within the southern roof void, whilst hanging slates weatherproofing the western walls may also conceal crevice roosting bats. Further surveys were recommended comprising an emergence and dawn re-entry survey, combined with remote monitoring within the southern roof void.

Dusk emergence survey

The dusk emergence survey was completed on 5th July 2016.

Prior to the survey, the remote detector was deployed into the southern roof void. Whilst placing the detector, a Long-eared bat was found clinging to the chimney (Plan 4). This bat was taken in hand and identified as a male Brown Long-eared bat.

During the survey, no bats were seen to emerge from building. This included the Brown Long-eared bat that was seen within the southern roof void whilst deploying the remote detector. The roof void was checked again at the end of the survey, and this bat could not be relocated.

Weather conditions were good for bat activity and bats were present in the vicinity of the site. The first bat recorded in the area was a Common Pipistrelle at 21:48 to the south west of the site, feeding within the church graveyard. This bat remained in the area for at least 30 minutes, foraging within the graveyard with passes to the rear of No 8. A Natterer's was recorded passing the site from the north at 22:16.

Dawn re-entry survey

The dawn re-entry survey was completed on 21st July 2016.

During the survey, a Natterer's was seen to enter one of the two smaller roofs, probably at the eaves, at 04:52, followed by a Common Pipistrelle at 05:03 (Plan 4).

Weather conditions were good for bat activity although only very occasional bats were present in the vicinity of the site. The first bat recorded in the area was a Common Pipistrelle at 04:21 that was distant from the site, with occasional foraging passes in the church graveyard from Common Pipistrelle until 05:11.

3.4. Remote monitoring

The remote monitor functioned correctly for 14 nights in the period 5th to 21st July 2016 during which time it recorded no calls within the southern roof void.

The weather during the remote monitoring period was suitable for good levels of bat activity and is given in Table 1.

Table 1. Weather conditions (Newquay) during remote monitoring.

Date	Max temp. (°C)	Min temp. (°C)	Average wind (mph)
5th July	21	14	7
6th July	21	11	3
7th July	21	14	4
8th July	21	15	6
9th July	22	17	8
10th July	21	15	9
11th July	21	15	9
12th July	19	14	8
13th July	20	14	9
14th July	21	15	6
15th July	21	14	6
16th July	21	14	4
17th July	25	14	2
18th July	27	15	5
19th July	27	19	7
20th July	22	16	8
21st July	22	14	4

Sunrise during the remote monitoring period was between 05:17 and 05:34, and sunset was between 21:31 and 21:17.

3.5. Summary of bat survey results, interpretation and evaluation

Brown Long-eared

A single Brown Long-eared bat has roosted within the southern roof void of No 8 Bank Street. It is also likely that this bat has fed here on sheltering moths, as evidenced by an accumulation of Yellow Underwing wings close to the chimney. This bat, although seen to be present when deploying the remote detector on 5th July, prior to the emergence survey, was not seen to leave or re-enter the building, and was not recorded within this roof void during 14 days of remote monitoring. Since this bat will 'warm up' within a roof void prior to emergence, it is very likely that during the survey period it was only present within this void on 5th July. It will have exited the roof void via a number of large gaps to the rear (west) of the house, and its exit may have been missed during the emergence survey due to it being very dark in this area of the building, with a lot of Common Pipistrelle activity concealing any ultrasonic calls it may have made.

This building has unknown potential to support hibernating Brown Long-eared bats. However, due to the very gappy nature of this large and complex roof, it is extremely unlikely that hibernation surveys would locate an individual bat.

Brown Long-eared bats are found throughout the UK. Population monitoring data show no significant changes for both hibernation and colony surveys, indicating that the population is probably stable (BCT, 2016a). Brown Long-eared bats are common and widespread throughout Cornwall, except in the most exposed locations (CISFBR). A roost of a common species, such as Brown Long-eared is considered of Local importance (Wray *et al*, 2010).

Brown Long-eared bats show high roost fidelity and are likely to present here most years. This roost is of Low conservation significance (Mitchell-Jones, 2004).

Common Pipistrelle

A single Common Pipistrelle is occasionally roosting in the area between the two smaller roofs. This bat was only observed during one of the two surveys. Common Pipistrelle roost switch regularly, and it is likely that this bat has other roosting locations on nearby buildings.

This building has unknown potential to support hibernating Common Pipistrelle bats. However, due to the very gappy nature of this large and complex roof, it is extremely unlikely that hibernation surveys would locate an individual bat.

Common Pipistrelle are widely distributed across the UK with a population estimate of about 2.4 million. Field surveys for this bat have shown a significant increase since 1999, although roost surveys have shown a significant decrease. However, there is evidence to suggest that this frequent roost switching can negatively bias population trends calculated from Roost Count data (BCT, 2016b). Common Pipistrelle are common throughout Cornwall (CISFBR, 2009). This roost is of low conservation significance (Mitchell-Jones, 2004). This roost is of Local importance (Wray *et al*, 2010).

Natterer's

A single Natterer's is occasionally roosting in the area between the two smaller roofs. This bat was only observed during one of the two surveys. Natterer's roost switch regularly, and it is likely that this bat has two or more roosting locations on nearby buildings. Natterer's bats normally hibernate in caves and cave like structures and would not hibernate here.

Natterer's bat is found throughout most of the British Isles, although it is a relatively scarce species. It has a population estimate of about 148,000. Field surveys for this bat provide some evidence that populations of Natterer's bat in Great Britain have increased since 1999, however this finding should be treated with caution until the effect that this species' frequent roost switching has on population trend estimates is better understood (BCT, 2016c).

This roost is of low conservation significance (Mitchell-Jones, 2004). Natterer's bats are a rarer species in the UK and are widespread, but infrequent, in Cornwall (CISFBR, 2009). This roost is of County importance (Wray *et al*, 2010).



Plan 4. Google Earth image annotated to illustrate the results of the preliminary visual assessment for bats along with the emergence and re-entry surveys

- Brown dots – Accumulations of Brown Long-eared droppings
- Brown square – Brown Long-eared roosting on chimney inside roof void and accumulation of Yellow Underwing wings
- Magenta arrow – Common Pipistrelle re-entry location
- Blue arrow – Natterer's re-entry location

3.6. Nesting birds.

Feral Pigeon have nested here previously.

4. Assessment

4.1. Survey constraints

The initial assessment and emergence/re-entry surveys were completed at an optimal time for such surveys (Collins, 2016).

All areas of the building could be readily observed during the dusk emergence and dawn re-surveys and all equipment functioned correctly for the period of the survey. During these surveys, no surveyors were located to the east of the building as this is an extremely well-lit street within the town with little in the way of potential access points for bats. This is not considered to be a constraint on these results.

The dissimilar results between the two surveys are probably a result of roost switching by the Common Pipistrelle and Natterer's bats, whilst it is also evident that the Brown Long-eared bat has switched its roost away from this building. If the impacts of the proposed project were significant, such as the loss of a roosting site, it may be prudent to complete a second emergence survey. However, provided suitable mitigation is adopted during the proposed works, and in light of the low impact that the re-roofing will have on these roosting bats, the completed emergence and re-entry surveys are sufficient and no further survey work is required.

It is the professional opinion of the surveying ecologist that the initial bat assessment in combination with the bat emergence/re-entry survey combined with remote monitoring provides sufficient information in relation to bats to allow the decision-maker to determine the planning permission. Further survey work would not make any material difference to the information provided.

4.2. Assessment of potential impact on bats

Individual Common Pipistrelle, Natterer's and Brown Long-eared bat are occasionally day roosting at No 8 Bank Street.

Without mitigation, the proposed re-roofing has the potential to disturb, injure or kill individual Common Pipistrelle, Natterer's and Brown Long-eared bats.

In the long term, re-roofing without mitigation could destroy/obstruct access to:

- Common Pipistrelle day roost occasionally used by a single bat,
- Natterer's day roost occasionally used by a single bat,
- Brown Long-eared day roost occasionally used by a single bat.

This would result in the loss of these roosting sites.

4.3. Assessment of potential impact on nesting birds

Feral Pigeon have previously nested here and may return. Mitigation may be required.

4.4. Legislation

Bats

Bats species and their breeding or resting places (roosts) are protected under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010. They are identified as European Protected Species. Under these laws it is an offence to:

- capture, kill, disturb or injure bats (on purpose or by not taking enough care);
- damage or destroy a breeding or resting place (even accidentally);
- obstruct access to their resting or sheltering places (on purpose or by not taking enough care); or
- possess, sell, control or transport live or dead bats, or parts of them.

Seven species of bat are listed as species “of principal importance for the purpose of conserving biodiversity”.

Seven species of bat are listed as being of principal importance, in the Secretary of State’s opinion, for the purposes of conserving biodiversity. Under section 41 (England) of the NERC Act (2006) there is a need for these species to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity.

These are Barbastelle, Bechstein’s, Noctule, Soprano Pipistrelle, Brown Long-eared, Greater Horseshoe and Lesser Horseshoe and are the subject of National and Local Biodiversity Action Plans.

Activities that can effects bats (from GOV.UK)

Activities that can affect bats include:

- renovating, converting or demolishing a building
- cutting down or removing branches from a mature tree
- repairing or replacing a roof
- repointing brickwork
- insulating or converting a loft
- installing lighting in a roost, or outside if it lights up the entrance to the roost
- removing commuting habitats such as hedgerows, watercourses or woodland
- changing or removing their foraging areas
- using insecticide
- treating timber

Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended) from being killed, injured or captured whilst their nests and eggs are protected from being damaged, destroyed or taken. Birds which are listed under Schedule 1 of the Act are given additional protection against disturbance.

Forty-five species of bird are listed as species “of principal importance for the purpose of conserving biodiversity”.

5. Recommendation and mitigation

5.1. Bats

If the re-roofing works can be carried out to comply with the following mitigation measures, then it is considered that a European Protected Species (EPS) licence is not required for the proposed works.

These mitigation measures will ensure that:

- Bats are not killed or injured during the process
- Access into the roof void and onto the wall tops for bats is retained

In the absence of an EPS licence it is crucial that the mitigation as outlined below is undertaken in order to avoid committing an offence under the Conservation of Habitats and Species Regulations 2010 and the Wildlife and Countryside Act 1981 (as amended).

Timing of works

There are minimal timing constraints as there is no maternity roost present. However, in a large complex building such as this, there is unknown potential for hibernating bats. Therefore, works will not commence during periods of cold weather when bats may be in torpor. Works will not commence if the daytime air temperature has not risen above 8 °C for three consecutive days.

Alternative roosting provision

Prior to any works commencing on site, alternative roosting areas must be provided. For the Brown Long-eared bat, this will be in the form of a Schwegler 2F bat box (see Appendix 1). These boxes are available on-line from a number of retailers. The bat box should be installed on the chimney breast near the apex of the southern roof void to provide a safe roosting area while the works are ongoing, this box can then be left within the void once work is complete to provide additional roosting areas.

For the Common Pipistrelle and Natterer's bats, alternative roosting provision will be provided by two wooden Chavenage bat boxes (see Appendix 1) attached to the exterior walls of the building, as close as is possible to the graveyard.

Retention of existing Brown Long-eared roost – Existing gaps at the eaves that allow the Brown Long-eared bat into the southern roof void (Plan 5) will be retained, along with any other suitable access points identified. During the works there will be temporary disturbance to this roost.

A licensed bat ecologist will be on site to carry out an ecological watching brief while the all parts of the roof are stripped. If any Brown Long-eared bats are uncovered during the stripping of the slates they will be placed in the 2F bat box on the chimney.

Once stripped the new roof materials and structure will be replaced. If any timbers are to be replaced and/or treated only chemicals currently approved for remedial timber treatment should be used. A list of approved chemicals can be found in Appendix 2.

The roof will be underlined with bitumen IF felt. Recent research has shown that modern breathable membranes can be harmful to bats and **must not be used** within a bat roost (bats have been found dead in some roosts after having become entangled in the fibres of the membrane).

Retention of day roosting opportunities for Common Pipistrelle and Natterer's – Roosting areas and access points for Common Pipistrelle and Natterer's will be retained along the wall tops of the two smaller roofs.

- The licensed ecologist will be required to undertake an ecological watching brief while the existing slates are removed in these areas in the unlikely event that a bat is uncovered.
- When the slates are replaced, gaps between the slates and the wall tops will be created to allow bats access onto the wall tops.

Lighting

The presence of lighting can have a significant effect on bat species roosting, foraging and navigating. Many species of bats are known to sample the light levels before emerging from their roost; only emerging for their night's hunting when the light intensity outside reaches a critical level after sunset. Potential disturbance to bats as a result from external lighting can be minimized by ensuring there is no additional lighting (including light spill from windows) near the bat access points.

Work supervision

A licenced ecologist will undertake ecological watching briefs during works to the roof and supervise all works to ensure adherence to mitigation methods and provide advice should unforeseen circumstances be met.

Builders and contractors will be inducted by the licensed bat ecologist regarding the presence of bats, their legal protection and of working practices to avoid harming bats. A copy of this mitigation statement will remain available on site at all times.

Prior to stripping the slate roof a visual survey by the licensed bat ecologist will need to be undertaken. The bat ecologist will remain on site while the ridge tiles and roof slates over wall tops (eaves and gable ends) are removed by hand. In the event that bats are discovered they will be moved by hand (gloved) by the licensed ecologist to the bat boxes located on site.

Post development monitoring

There is no requirement for post development monitoring surveys.



Plan 5. Google Earth image annotated in yellow to illustrate the locations of existing gaps allowing Brown Long-eared access into the southern roof void. The gaps will be retained when the roof is replaced.

5.2. Nesting birds

Feral Pigeon have nested here and may return.

Works should be completed during the period September to February inclusive, outside the accepted bird nesting season. If this is not practicable, buildings should be thoroughly inspected by a suitably qualified person prior to development, and if nesting birds are found, all activities likely to impact a nest area should be delayed until chicks have fledged.

References

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Appendix 1

Proposed alternative roosting provisions during the works



Schwegler 2F standard bat box

The following text is taken from the NHBS Website.

The 2F is the standard and most popular bat box and is ideal as a starter box to see if there are bats in your area or to provide much needed secure roosting space. It has been designed as a summer roosting space for bats and has a simple entrance hole at the front. The Schwegler 2F has a removable front panel and can be converted in to a bird nest box using a replacement 1B front panel if there is no evidence of bat activity after a couple of years. The 2F is manufactured from long-lasting Woodcrete, which is a blend of wood, concrete and clay which will not rot, leak, crack or warp, and will last for at least 20 - 25 years, making it suitable for long-term mitigation projects. Woodcrete is breathable and maintains a stable temperature inside the box and the 2F is painted black to absorb warmth. It also provides a good rough surface for bats to cling on to and climb. The 2F bat box can be sited in trees or on buildings and is best positioned at a height of between 3 to 6 metres. Bat boxes should ideally be sited in open sunny positions and in groups of 3 to 5 boxes facing different directions to provide a variety of micro-habitats. Please note that once bats have inhabited a roost site they may only be disturbed by licensed bat workers.

Schwegler bat and bird boxes are backed by conservation organisations, government agencies and forestry experts and have the highest occupation rates of all nest boxes. They are carefully designed to mimic natural nest and roost sites and to provide a stable environment. A separate replacement front panel is also available.

Height 33 cm x diameter 16 cm. Weight: 4 kg.

Aluminium tree-friendly nail and hanger included.



Chavenage bat box

The following text is taken from the NHBS Website.

This natural and attractive bat box will fit into any garden, woodland or house wall site. It is made from high quality durable timber providing longevity and excellent insulation. Bats need habitats as many of their roosts have been lost over recent years. The narrow entrance slot and strong timber provide predator protection.

Appendix 2

Natural England Technical note TIN146: Bat roosts and insecticide pest control products

Bat roosts and insecticide pest control products

This note has been written to help those involved with invertebrate pest control not related to timber treatment. For information on bat roosts and timber treatments see TIN092. This note provides a list of currently approved insecticides that can be used where there are bat roosts, with a particular focus on cluster-fly treatments, wasp, bee and hornet control. It updates the information in the 3rd edition of the *Bat Workers Manual*. Chemical products change regularly and this note will be updated as information becomes available, therefore please always refer to the latest edition of the note.

Introduction

Where bat roosts are present insecticides should only be applied at the recommended time of year and Natural England's bat advice helpline should be consulted before any known bat roost is treated with any product. The helpline numbers are listed in *Further information*.

Detailed guidance relating to pest control where there are bat roosts can be found in Chapter 10 of the *Bat Workers Manual* (3rd edition, 2004). This includes information on:

- the types of problems encountered;
- chemical treatments; and
- the appropriate timing of works.

See *Further information* for a link to this guidance. The information in the table is correct at the time of publication, but may be subject to change as new information becomes available.

Insecticide products

Chemical-based products coming in and out of the insecticide market change regularly and information regarding products for which an individual company currently holds an approval under the Control of Pesticide Regulations (COPR) may not be completely available at any

given time. The table at the end of this note lists suitable products by active ingredients by company and product name. Particular care should be taken when treating feral bees to ensure that other working bees remain unaffected.

Use pesticides safely. Always read the label.

Further information

Natural England's bat advice helpline should be consulted before any known bat roost is treated with any product. The helpline number is:

- The Bat Conservation Trust 0845 130 0228
www.bats.org.uk

Chapter 10 of the *Bat Workers Manual*, 3rd edition, 2004. Provides further information on the types of problems encountered, chemical treatments and the appropriate timing of works.
http://jncc.defra.gov.uk/pdf/batwork_manualp14.pdf

Other leaflets and guidance on bats can be seen at
www.naturalengland.org.uk/ourwork/regulation/wildlife/advice/advisoryleaflets.aspx

Bat roosts and insecticide pest control products

Natural England publications are available to download from the Natural England website: www.naturalengland.org.uk. In particular see:

- TIN092: *Bat roosts and timber treatments*

For further information contact the Natural England Enquiry Service on 0300 060 0863 or e-mail enquiries@naturalengland.org.uk.

Contact details

151 Products Limited, Globe House, 34 Southall Street, Manchester, Greater Manchester, M3 1LG. Tel: 0161 8395949 Fax: 0161 8395493. www.151.co.uk Agropharm Ltd, Buckingham Place, Church Road, Penn, High Wycombe, HP10 8LN. Tel: 01952 740333. Fax: 01952 740207. www.agropharm.co.uk/

Barrettine Environmental Health, St Ivel Way, Warmley, Bristol. BS30 8TY. Tel: 01179 60 00 60. Fax: 01179 35 24 37. www.barrettine.co.uk/

BASF Plc, PO Box 4, Stanley Green Trading Estate, Cheadle, Cheshire, SK8 6QG. Tel: 0161 4856222. Fax: 0161 4860891. www.basf.co.uk/ecp1/UK_Ireland/en/

Bayer CropScience Ltd., Cambridge Science Park, Milton Road, Cambridge, CB4 0WB. Tel: 01223 226500. Fax: 01223 426240. www.bayercropscience.co.uk/

Hockley International Ltd, Hockley House, Ashbrook Office Park 3 Longstone Road, Manchester, Lancashire, M22 5LB. Tel: 0161 2097400. Fax: 0161 2097401. <http://hockley.co.uk/>

Homebase Ltd., Customer Services Department, Acton Gate, Stafford, ST18 9AR. Tel: 0845 077 8888. www.homebase.co.uk/

Lodi UK Limited, Building 69, Third Avenue, Pensnett Trading Estate, Kingswinford, West Midlands, DY6 7FD. Tel: 01384 404 242. Fax: 01384 404 656. www.lodi-uk.com/

Marks and Spencer Plc, Waterside House 35 North Wharf Road, London, W2 1NW. Tel: 0845 3021234. www.marksandspencer.com/

Miswa Chemicals Ltd., Caswell Road, Brackmills Indust Est., Northampton, Northants, NN4 7PW. Tel: 01604 701111. Fax: 01604 701120. www.miswa.com/

Net-Tex Trading Limited, Priestwood Harvel, Meopham, Kent, DA13 0DA. Tel: 01474 813999. Fax: 01474 812112. www.net-tex.co.uk/

Pelgar International Ltd., Unit 13 Newman Lane, Alton, Hampshire, GU34 2QR. Tel: 01420 80744. Fax: 01420 80733. www.pelgar.co.uk/index.htm

Polly Products, Home Farm Barn, Winkburn, Newark, Notts., NG22 8PQ. Tel: 01636636135, Fax: 01636636643. www.horseandriderwear.com/default.asp

Reabrook Limited, Rawdon Road, Moira Swadlincote, Derbyshire, DE12 6DA. Tel: 01283 222266. Fax: 01283 550963. www.reabrook.co.uk/

Rentokil Initial UK Limited, 2 City Place, Beehive Ring Road, Gatwick Airport, West Sussex, RH6 0HA. Tel: various 0800 numbers depending on type of problem, see website for details. www.rentokil.co.uk/index.html

Schippers UK Ltd, Unit 37 Bakewell Business Park, Culley Court, Orton Southgate, Peterborough, PE2 6WA. Tel: 01733 370970. Fax: 01733 370968. www.msschippers.co.uk/

Spotlesspunch UK Ltd, Cromwell Road, Redhill, RH1 1RT. Tel: 01737 742000. www.spotlesspunch.co.uk/

STV International Ltd., Forge House, Little Cressingham, Thetford, Norfolk, IP25 6ND. Tel: 01953 881580. Fax: 01953 881452. www.stvpestcontrol.com/

SX Environmental Supplies Ltd., Unit 4, Airborne Industrial Estate, Airborne Industrial Estate, Arterial Road, Leigh-On-Sea, Essex, SS9 4EX. Tel: 0800 0851451 Fax: 0800 085 145. www.pestcontrolonline.com/

Tesco Ltd., Tesco Customer Service Centre, Baird Avenue, Dundee, DD1 9NF. Tel: 0800 505555. www.tesco.com/

Bat roosts and insecticide pest control products

W Neudorff GmbH KG, c/o Doff Portland Limited, Aerial Way, Off Watnall Road, Hucknall, Nottinghamshire, NG15 6DW. Tel: 0115 9834300. Fax: 0115 9834330.

www.neudorff.co.uk/

Westland Horticulture Limited, 220 Camlough Road, Pomeroy, Dungannon, County Tyrone, BT70 2ST. Tel: 028 8775 8388. Fax: 028 8775 9111.

Wilkinson Hardware Stores Ltd., Wilkinson JK House, PO BOX 20, Worksop, Nottinghamshire, S80 3YY. Tel: 08000 329329.

www.wilkinsonplus.com/

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Bat roosts and insecticide pest control products

Table 1 Insecticide products suitable for use in bat roosts¹

Company and product name	App. Method ²	User ³	Active Ingredients	HSE No. ⁴
151 Products Limited				
Pestshield New Formula Fly & Wasp Killer	Spray	A	Permethrin, Tetramethrin	8987
Agropharm Ltd				
Protector Flying And Crawling Insect Killer	Sur.	A	Pyrethrins, Cypermethrin	8646
Agropharm's Dairy Fly Spray	Sur. & Space	A	Pyrethrins	9249
Barrettine Environmental Health				
Fly-Expire Sst	Sur. & Space	P	Pyrethrins	8112
Flymax	Sur. & Space	P	Permethrin	8903
BASF Plc				
Sorsec Wasp Nest Destroyer	Sur.	P	Tetramethrin, D-Phenothrin	9294
Sorex Super Fly Spray	Sur.	P	d-Phenothrin	6297
Bayer Cropscience Ltd				
Bayer Flying Insect Killer	Sur. & Space	A	D-Tetramethrin, D-Phenothrin	8771
Aquapy	Sur. & Space	P	Pyrethrins	5799
K-Othrine SC 10	Sur.	P	Deltamethrin	5097
Aqua K-Othrine	Space	P	Deltamethrin	6027
K-Othrine WG 250	Sur.	P	Deltamethrin	8092
Cobweb Uk Ltd				
Waspaway	Sur. & Space	A	Permethrin, Tetramethrin	9257
Copyr Spa				
Flyspray	Sur. & Space	A	Pyrethrins	9270
Hockley International Ltd				
Hockley Py-Pro Fly Spray	Sur. & Space	P	Pyrethrins	8156
Homebase Ltd				
Homebase Fly And Wasp Killer	Sur. & Space	A	Permethrin, Tetramethrin	8496
Lodi UK Limited				
Insecto Fly And Wasp Destroyer	Sur.	A	Permethrin, Tetramethrin	9317
Insecto Wasp Destroyer	Sur.	A	Permethrin, Tetramethrin	9318
Marks And Spencer Plc				
Marks & Spencer Insect Killer Formula Destroy Fast Acting Mosquito Fly & Wasp Killer	Sur. & Space	A	D-Phenothrin, Tetramethrin	8363

Table continued...

Bat roosts and insecticide pest control products

Company and product name	App. Method ²	User ³	Active Ingredients	HSE No. ⁴
Miswa Chemicals Ltd				
Polygard Kilit Insecticide For Flying And Crawling Insects	Sur. & Space	A	D-Allethrin, D-Tetramethrin, Permethrin	7904
Polygard Kilit Flying & Crawling Insect Killer	Sur. & Space	A	D-Tetramethrin, D-Phenothrin, Cypermethrin	8606
Net-Tex Trading Limited				
Fly And Maggot Killer	Sur.	A	Permethrin, Cypermethrin	8614
Terminal Flying Insect Killer	Sur. & Space	A	Permethrin, Tetramethrin, D-Phenothrin Pyrethrins	8878
Pelgar International Ltd				
Pelgar Super Strength Fly Spray	Sur. & Space	P	Permethrin, Tetramethrin	7832
Polly Products				
Fly Killer	Trigger	A	Permethrin, Tetramethrin	9339
Reabrook Limited				
Arrow Flying And Crawling Insect Killer	Sur. & Space	A	D-Phenothrin, Tetramethrin	8670
Rentokil Initial Uk Ltd				
Rentokil Fly, Ant & Wasp Control	Spray	A	D-Phenothrin, Tetramethrin	8456
Rentokil Fly, Ant And Wasp Spray	Sur. & Space	A	D-Allethrin, Permethrin	8460
Fly Killer Bin Spray	Sur. & Space	A	Cypermethrin	8869
Insectaban Liquid	Fogger & Spray	P	Permethrin	6216
Schippers UK Ltd				
Ms Aza-Fly	Sur.	P	Azamethiphos	8927
Spotlesspunch UK Ltd				
Vape Super Ko2 Fly And Mosquito Killer	Sur. & Space	A	D-Phenothrin, D-Tetramethrin	8666
STV International Ltd				
STV Wasp Killer	Spray	A	Pyrethrins	9047
STV Np Fly, Moth & Mosquito Killer	Spray	A	Pyrethrins	9048
STV Fly, Moth & Mosquito Killer Spray	Spray	A	Cypermethrin	9050
STV Np Fly, Moth & Mosquito Killer Rtu	Spray	A	Pyrethrins	9059
Zero In Flying Insect Killer	Spray	A	Pyrethrins	9103
Zero In Fly & Wasp Killer	Sur. & Space	A	D-Phenothrin, Tetramethrin	9108
Zero in Wasp Nest Killer Foam	Sur.	A	D-Phenothrin	9185
Zero In Wasp Nest Killer Foam	Sur.	A	Permethrin, Tetramethrin	9245
STV Pro Control Wasp Nest Killer Foam	Sur.	P	D-Phenothrin	9322

Table continued...

Bat roosts and insecticide pest control products

Company and product name	App. Method ²	User ³	Active Ingredients	HSE No. ⁴
SX Environmental Supplies Ltd				
SX Pro Flying And Crawling Insect Killer	Sur. & Space	P	Tetramethrin, D-Phenothrin	9236
SX Pro Wasp Killer Foam Nest Treatment	Sur.	P	Permethrin, Tetramethrin	9244
Tesco Ltd				
Tesco Mosquito Fly & Wasp Spray	Sur. & Space	A	D-Phenothrin, Tetramethrin	8362
W Neudorff GmbH Kg				
Permanent Wasp Spray	Sur.	A	Pyrethrins	8959
Westland Horticulture Limited				
Eraza Fly & Wasp Killer	Sur. & Space	A	Tetramethrin, D-Phenothrin	9194
Eraza 24hr Wasp Nest Destroyer	Sur.	A	Permethrin, Tetramethrin	9209
Wilkinson Hardware Stores Ltd				
Wilko Flying & Crawling Insect Killer	Sur. & Space	A	D-Phenothrin, Tetramethrin	7851
Wilko Foaming Wasp Nest Destroyer	Spray	A	Tetramethrin, Permethrin	9286

¹ Products on the list are those that have come to the attention of Natural England; other suitable products may also be available. The efficacy of particular products in particular situations is the responsibility of the manufacturer and no endorsement is given or implied. At the time of writing (30 March 2012), these products have approval under the COPR Biocide Directive (Annex A) or list of exemptions.

² Sur. Surface spray

Sur. & Space Surface and space spray

Space Treat. & Sur. Space treatment and surface spray

Trigger Spray

³ P Cleared for professional use only

A Cleared for professional and amateur use (a DIY product)

⁴ Health and Safety Executive (HSE), to search the pesticides databases, go to

www.hse.gov.uk/biocides/index.htm