

Bat Emergence and Activity
Survey 2017

Land West of Brook Lane and
South of A259
Rustington, West Sussex

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LIABILITIES:

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing and whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date.

This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated only dominant species maybe recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

1.0 Introduction

Background

- 1.1 The Ecology Partnership was commissioned by Store Property Investments Ltd to undertake bat emergence/re-entry surveys of the farmhouse on Brook Lane, Rustington, West Sussex. These surveys were recommended following a preliminary ecological appraisal in June 2016 and an update survey on 17th February 2017.
- 1.2 An internal inspection of the void in the house did not identify any evidence of bats, however, there was warped and slipped weatherboarding around the dormer windows of the house which was considered suitable for roosting bats. An initial bat survey was carried out on 2nd May 2017 which identified a bat emerging from under an area of weatherboarding, therefore a further two surveys were recommended.
- 1.3 The garage did not support any evidence of roosting bats internally. The warped weatherboarding at the front of the garage was considered to have some potential for bats. The initial survey on the 2nd May 2017 did not identify any bats using the garage building and as such the garage was not considered to support a bat roost.
- 1.4 This report presents the results of The Ecology Partnership's surveys on site, which aims specifically to assess how bats are using the buildings in the spring and summer of 2017.
- 1.5 Section 2 of this report sets out the methodology of The Ecology Partnership's survey. The results are contained in Section 3 and the implications discussed in Section 4. Conclusions are provided for in section 5 of this report.

Site Context and Status

- 1.6 The site is located on land immediately south of the A259 and west of Brook Lane in Rustington, West Sussex (TQ 04851 03621). The house is situated in the centre of the site between Brook Lane and the A259. The site consists of grassland fields, areas of

hardstanding, hedgerows and tree lines. The surrounding area is a mosaic of agricultural fields and high-density housing with areas of woodland located to the northeast.

- 1.7 The approximate red line boundary of the site is shown in Figure 1 below. The blue line is the location of the house.



Figure 1: Approximate location of the red line boundary

Legislation

- 1.8 Under the Natural Environment and Rural Communities (NERC) Act 2006, it is now the duty of every Government department in carrying out its functions *“to have regard, so far as it is consistent with the proper exercise of those functions, to the purpose of conserving biological diversity in accordance with the Convention”*. Seven species of bat (Barbastelle, Bechstein’s, Noctule, Soprano pipistrelle, Brown long-eared, Greater horseshoe and Lesser horseshoe) are listed as Species of Principal Importance in England under Section 41 of the NERC Act.

- 1.9 All bats are covered by the following relevant legislation: the Wildlife and Countryside Act (WCA) 1981 (as amended); the Countryside and Rights of Way Act 2000; the Natural Environment and Rural Communities Act 2006; and by the Conservation of Habitats and Species Regulations (CHSR) 2010.

Under the WCA 1981 it is an offence to:

- intentionally, recklessly or deliberately disturb a roosting or hibernating bat i.e. disturbing it whilst it is occupying a structure or place used for shelter or protection)
- intentionally or recklessly obstruct access to a roost (i.e. a structure or place used for shelter or protection).

Under the CHSR 2010 it is an offence to:

- deliberately capture (or take), injure or kill a bat;
- intentionally, recklessly or deliberately disturb a bat, in particular (i) any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young; (ii) any disturbance which is likely to impair their ability in the case of hibernating or migratory species, to hibernate or migrate; or (iii) any disturbance which is likely to affect significantly the local distribution or abundance of the species to which they belong;
- damage or destroy a breeding site or resting place (roost) of a bat.

2.0 Methodology

Bat Emergence/Re-entry Surveys

- 2.1 Dusk emergence surveys were carried out on 2nd May and 9th August 2017. During the surveys all activity, including emergence points from the building, was recorded. The surveys followed Bat Conservation Trust guidelines (Collins 2016). Prior to each survey, the house was inspected externally in order to assess features of interest and all potential exit locations. Surveyors were positioned in order to cover areas of interest and record any flyovers and activity around the building (Figure 2).

- 2.2 Dusk surveys started 30 minutes before sunset and observations were maintained until 2 hours after sunset. Bats usually emerge about twenty minutes after sunset depending on the species, light level, weather conditions and time of year. Peak activity will normally last for about two hours after sunset, during times of peak insect activity.
- 2.3 A dawn re-entry survey was carried out on 23rd June 2017. A dawn survey can increase the chance of surveyors visually assessing bat behaviour and movement as well as providing good opportunities for recording. This is especially true if the roost is a maternity roost and the young bats are returning to roost. The dawn survey started 1.5 hours before dawn and was completed at dawn.
- 2.4 All surveyors were equipped with Bat Box Duet heterodyne and frequency division detectors and hard disc recorders, a Batscanner, an Echometer touch and/or anabat walkabout technology.



*Figure 2: Surveyor positions around the house to cover all areas of interest
(Yellow circles indicate areas of lifted weatherboarding)*

Limitations

- 2.5 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment.

3.0 Results

- 3.1 The first emergence survey was carried out on 2nd May 2017. Sunset was at 20:35 and surveyors were on site from 19:45. The temperature at the start of the survey was 12.2°C and fell to 10.9°C at the end. There was a brief light rain shower for approximately 10 minutes occurring around 20:40. The bat activity around the building was considered to be relatively high. The first bat was a common pipistrelle (*Pipistrellus pipistrellus*) heard at 20:15 by surveyor 1. All three surveyors observed both common and soprano pipistrelles (*Pipistrellus pygmaeus*) foraging and commuting around the house, the driveway and the garden throughout the survey.
- 3.2 Surveyor 1 was positioned close to the lane with 33 bat passes observed commuting up and down the lane. This surveyor also heard approximately 15 *Myotis* species passes at various times between 21:00 and 21:44 and a serotine (*Eptesicus serotinus*) pass at 21:14.
- 3.3 Surveyor 1 did not record any bats emerging from the weatherboarding on the garage feature.
- 3.4 Surveyor 2 heard predominantly common and soprano pipistrelle calls with a serotine pass at 21:23. Pipistrelles were seen to be foraging within the driveway continuously for 10 minutes between 21:25 and 21:34. A bat was seen by surveyor 2 to emerge from the corner of the eastern dormer window, from underneath the weatherboard, three boards up (Figure 3). The bat did not echolocate, however the next call heard was a soprano pipistrelle. It is considered likely that the bat was a pipistrelle species.



Figure 3: Location of bat emergence observed by surveyor 2 on 2nd May 2017

3.5 Surveyor 3 had the lower number of bat calls altogether and recorded the same species as the other surveyors with the addition of three brown long-eared bat passes at 21:06. The bat was not seen however. The bat calls recorded have been summarised in Table 1 below.

Table 1: Number of bat calls heard at each surveyor point on 2nd May 2017

Bat species	Surveyor 1	Surveyor 2	Surveyor 3	Total
Common pipistrelle <i>Pistrellus pipistrellus</i>	6	15+	4	25+
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	11	4	2	17
Myotis species <i>Myotis sp.</i>	15	0	2	17
Serotine <i>Eptesicus serotinus</i>	1	1	4	6
Brown long-eared bat <i>Plecotus auritus</i>	0	0	3	3
Total	33	20	15	

- 3.6 The dawn survey was conducted on the morning of 23rd June 2017. Sunrise was at 04:49 and the survey commenced at 03:15. The weather was dry, still and clear with a temperature of 13.2°C at the start of the survey, rising to 14.1°C at the end. The first bat of the survey was a common pipistrelle heard by surveyor 1. Numerous passes of common pipistrelles were recorded by surveyor 1 foraging along the lane and around the building between 03:31 and 04:26. At least 22 passes were recorded between 03:31 and 03:50 and another 24 passes between 03:57 and 04:15. Surveyor 1 also recorded the occasional soprano pipistrelle pass between 03:50 and 03:55.
- 3.7 The bat passes recorded by surveyor 2 were much fewer in number. The first bat recorded was a common pipistrelle at 03:46. A common pipistrelle was then observed foraging around the garden at 03:56, 04:01 and 04:13. A soprano pipistrelle was seen returning to roost under the weatherboarding at 04:26. It landed on the weatherboarding and crawled into a gap in a similar position to where a bat was seen emerging in May (Figure 3).
- 3.8 Surveyor 3 only recorded two bat passes throughout the duration of the survey. These were a common pipistrelle at 03:42 and another at 03:56. Both were heard on the detector but not seen. No bats were seen to return to roost at this location. The bat calls recorded during this survey have been summarised in Table 2 below.

Table 2: Number of bat calls heard at each surveyor point on 23rd June 2017

Bat species	Surveyor 1	Surveyor 2	Surveyor 3	Total
Common pipistrelle <i>Pipistrellus pipistrellus</i>	59	6	2	67
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	4	1	0	5
Total	63	7	2	

- 3.9 The second dusk survey was conducted on 8th August 2017. Sunset was at 20:35 and the survey started at 20:05. The weather was still with 40% cloud cover and temperatures

around 13°C. Bat activity for this survey was considerably lower than the previous surveys.

- 3.10 The first bat recorded was a soprano pipistrelle at 20:43 commuting around the house and through the garden. At 20:40 a soprano pipistrelle was observed emerging from under the weatherboarding at the front window by surveyor 1 (Figure 4). The rest of the survey consisted of brief passes by pipistrelles. Soprano pipistrelles were observed commuting over/around the house at 20:55, 21:10 and 21:17. A common pipistrelle also passed over the house at 20:59. The last bat recorded during the survey was a serotine at commuting through the garden at 21:19. No other bats were recorded or seen emerging from the house.



Figure 4: Location of bat emergence observed by surveyor 1 on 8th August 2017

4.0 Discussion

Bat Activity Surveys

- 4.1 Whilst no evidence of bats was found in the voids of the house, the areas of external weatherboarding were warped and slipped in places and therefore considered to be suitable for roosting bats. All three surveys identified evidence of roosting by at least one pipistrelle bat. The first two surveys identified a pipistrelle to be using the weatherboarding around the northeast dormer window to roost whilst the last survey identified a soprano pipistrelle using the weatherboarding around the southern dormer window (Figure 5). No other bats were seen to exit or re-enter any other features on the house.



Figure 5: Locations of roosting pipistrelle(s) identified during the 2017 surveys

- 4.2 The house is therefore considered to be an active pipistrelle roost and a Natural England licence will be required to demolish the building. As only a single pipistrelle was seen emerging/re-entering the house during each survey, it is considered that the house is a

day roost for an individual soprano pipistrelle as opposed to a maternity roost. Only the weatherboarding is being used for roosting.

- 4.3 The garage, which was considered to have 'low' potential for bats was also surveyed for bats. No bats were seen to emerge on the initial survey and subsequent surveys did not reveal any bats emerging or re entering the garage. As such it is considered that the garage does not support a bat roost. No further surveys are required.

Implications for Development - Appropriate Mitigation

- 4.4 The demolition of the house on site is not considered to be significant in terms of bats. However, since this is a confirmed and active roost, the demolition will require a licence from Natural England. The following methods will need to be carried out under this licence:

- Establish two Schwegler 2F bat boxes on mature trees close to the house prior to works on site;
- Conduct a Tool Box Talk (TBT) with all team members on site with regards to bats using the building, their legal protection, measures to ensure that bats are not harmed, good working practices, licensable activities and what to do if a bat is found;
- Once the TBT has been conducted then works to the building can commence under direct supervision of a registered consultant (RC);
- The weatherboarding will be removed individually by hand with the boards being turned prior to stacking. If a bat is found then the RC will gently move the bat to a nearby bat box;
- Once the weatherboarding has been removed, other features such as the tiles and bitumen felt lining will be removed, again under direct supervision of the RC;
- Lastly, the soffit boards will be removed using hand tools and checked gently before final removal under supervision of the RC;
- Once the RC has rechecked the whole of the building and is happy that all licensable activities to the building have occurred (i.e. the features used for

roosting by bats have been removed), then demolition can occur without further supervision;

- It is considered that this process is likely to take between 1-2 days.

4.5 The timing of the works will occur when bats are considered to be active. Therefore, works should be avoided between November and March, however this is dependent on local weather conditions.

4.6 Compensation for the loss of the roost will be through providing two Schwegler 2F bat boxes. These will be established prior to any site works on mature trees close to the house.

Low Impact Bat Licence

4.7 Due to the low number of individuals using the building and the common nature of the species (soprano pipistrelle), it is considered that the demolition of the house can be carried out under a Nature England low impact licence. This licence covers bat roosts of low conservation importance for the most common species found within the UK.

4.8 This roost is considered to be a day roost for an individual or low number of soprano pipistrelles and as such is considered to be well within the remit of the low impact licence scheme.

4.9 The time of the works with regards to the licence requirements are as follows:

- The licence can only be applied for once planning permission has been granted.
- Once approved, the licence application can be submitted a minimum of 15 days prior to the works commencing.
- An update survey (walkover or internal survey) must occur 3 months prior to the demolition works.
- The two Schwegler 2F boxes should be established on mature trees close to the house as soon as possible;

- Once the licence is issued (can take up to 10 working days), all licensable works can commence if weather conditions are appropriate. All licensable works (removal of weatherboarding etc.) should take in the region of 1-2 days.
- The registered low impact licence consultant (the RC) must be on site for all of the licensable works.
- Once the licensable works are complete and the RC is satisfied that the structure is free of bats, then the building can be demolished.

General Ecological Enhancements

- 4.10 Bat activity recorded around the house during the surveys highlighted that the track on site is a good foraging and commuting corridor for bats, particularly pipistrelles. It is recommended that the tree line and hedgerows on site be retained where possible. Any linear features removed should be planted elsewhere on site to ensure corridors are present throughout the site.
- 4.11 Oak trees (*Quercus robur*) are present throughout the site and are known to support a range of invertebrates. Indeed, the oak tree provides habitats for more organisms than any other tree in the UK. Large numbers of moth larvae feed on oak trees including micro moths. Beetles and weevils are also associated with the oak, boring into the wood or using acorns as nurseries. Therefore, it is recommended that these are retained on site where possible and sensitively managed to ensure their longevity.
- 4.12 Dead wood is present on site and should be retained and incorporated into log piles along the boundary of the site. Dead wood is a valuable habitat for a range of invertebrate species, particularly saprophytic insects such as the beetles that noctules and serotines forage for. Log piles can be further enhanced by encouraging flowering climbers to grow over them, for example, clematis or honeysuckle. These nectar-rich plants are also an important food source for invertebrate species.
- 4.13 Planting on site should focus on a wide range of native species to increase invertebrate abundance and diversity which will in turn provide a better food source for bats.

Appropriate wildflower seed mixes can be obtained from local native species stockists. Herbs can also be planted in open spaces and gardens. Species which provide nectar opportunities for invertebrates should be used such as lavender, jasmine, chamomile, fennel, oregano, evening primrose, thyme, mint and heather.

- 4.14 To enhance the local bat population and provide roosting opportunities within the new development, it is recommended that integrated bat boxes/tubes be incorporated into the structure of the new buildings (Figure 6). These provide good opportunities for crevice-dwelling species such as pipistrelles. The opening of the bat box/tube will be the only section visible and they are designed so that they require little to no maintenance. Several of these tubes can be established in a row together providing a good-sized roost space. The bat tubes should be inserted as high up as possible in the brickwork. Habitat, in association with the Bat Conservation Trust, provide a range of boxes which are unfaced for render or designed to match the brickwork of the building.

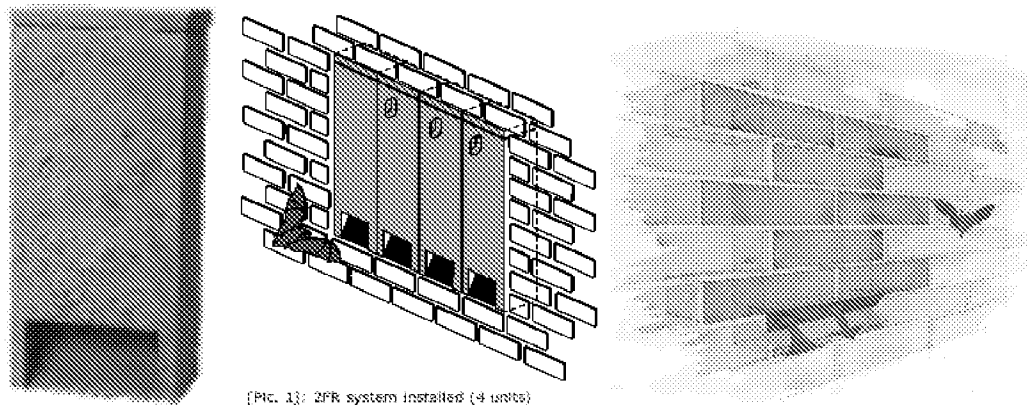


Figure 6: Bat tubes incorporated into the wall of a building to provide roosting space

- 4.15 Additional roosting opportunities can be provided by hanging bat boxes on mature trees around the site. Recommended boxes include:
- Schwegler 2F Bat Box – These boxes are attractive to small bats such as pipistrelles and long-eared bats and can be hung on trees (Figure 7).

- Schwegler 2FN Bat Box – This is slightly larger than the 2F and provides opportunities for the larger bats such as noctules. These should be hung on mature trees.
- Schwegler 1FD Bat Box - This box has been designed specifically for smaller bats and provides opportunities as a maternity roost (Figure 7).

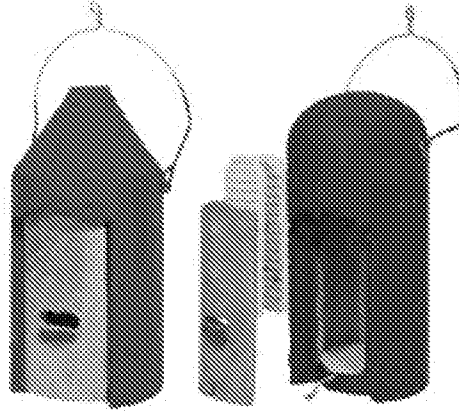


Figure 7: Schwegler 2F (left) and 1FD (right) bat boxes

5.0 Conclusions

- 5.1 Bat emergence/re-entry surveys of the house were recommended following an external examination of the house and garage on site. Whilst no evidence was found inside the void of the house or garage and the tiles across both the house and garage were considered to be relatively flush with one another, the weatherboarding around the dormer windows was warped and had slipped in places on the house and warped over the front of the garage. These areas were therefore considered to be suitable for roosting bats.
- 5.2 The weatherboarding around two of the dormer windows on the house were confirmed to be day roosts for an individual or small number of soprano pipistrelles. No other bats were found to be using the site as a roost during any of the three surveys. No bats were recorded using the garage.

- 5.3 Given the type of roost identified and the species roosting in the house, it is considered that the demolition of the house can be covered by a Natural England low impact licence. This can only be applied for once planning permission has been granted for the site.
- 5.4 It is considered that the licence, method statement and enhancements outlined in this report will ensure that no bats are harmed as a result of the development and the favourable conservation status of bats in the local area will not be affected.

6.0 References

Bat Conservation Trust (2008) *Bats and Lighting in the UK – Bats and the built environment series (Version 2)*. Bat Conservation Trust, London.

CIRIA C567 (2005) *Working with wildlife – site guide*. CIRIA, London.

Collins, J. (ed.) (2016) *Bat surveys for Professional Ecologists: Good Practice Guidelines (3rd edition)*. The Bat Conservation Trust, London.

English Nature (1994) *Species Conservation Handbook*. English Nature, Peterborough.

Mitchell-Jones, A.J. (2004) *Bat Mitigation Guidelines*. English Nature, Peterborough.

Internet resources:

Magic Interactive Map: www.magic.gov.uk

Google Maps: www.google.co.uk/maps

The Ecology Partnership

Thorncroft Manor

Thorncroft Drive

Leatherhead

KT22 8JB



Approved by: Alexia Tamblyn MA (Oxon) MSc CEnv MCIEEM FRGS

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