



Bat Survey - Emergence and Re-Entry

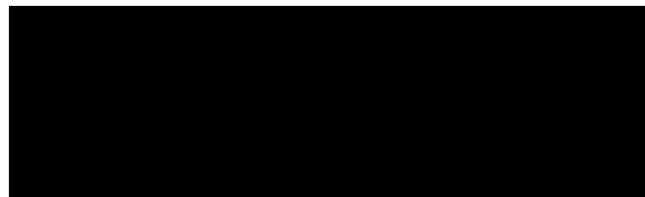
29 Elm Grove, Barnham, West Sussex PO22 0HL

Marilyn McManus

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Executive summary

Arbtech Consulting Ltd. Are undertaking a suite of emergence/re-entrance surveys at 29 Elm Grove, Barnham, West Sussex PO22 0HL on 10th September 2018. The aim of the assessment was to determine the presence/likely absence of bat roosts in the building as identified in the PRA (Arbtech, September 2018).

This includes providing evidence for species, numbers and levels of activity, to identify any entrance and egress points, and to gain an understanding of the activity of bats using the site in the local landscape.

The development proposals involve the demolition of the garage and rear extension and the addition of a side and rear single storey extension to the existing dwelling.

Recommendations

Ref	Survey assessment conclusions (Type of bat roost present)	Foreseen impacts	Recommendations / Mitigation	Enhancements
B1	Common pipistrelle roosts have been confirmed x 4 bats (three roost sites) within the roof structures on the main building. These will all be retained. The potential roosting features identified in the PRA on the rear extension and front porch roof are considered to have low-negligible habitat value due to the presence of	Roosts could be disturbed during the development.	A precautionary working method will be employed to avoid impacting bat roosts present. The work will be carried out over the winter months between November and March to prevent noise and vibration disturbance to the roosts in the roof structures which will be used over the spring/summer/early autumn. The roof and hanging tiles on the rear extension and porch roof will be removed carefully by hand. In the unlikely even that a bat is found, the bat must be carefully re-covered, and work must stop. Arbtech must then be contacted for further advice. There are no planned works that will directly impact the main roof structures, eaves, dormer window or chimneys on the property. If there is to be any work of this nature	The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99 To increase bat habitat on site a bat box should be added to the south west elevation. A wall mounted box such as the Schwegler 1FQ would be ideal. The box will need to be placed high up close to the eaves

	the ideal roosting habitat in the main roof structures where roosts have been confirmed. It is unlikely that these lower, sub-optimal features would also be used.		carried out, a further two surveys (one at dusk and one at dawn) within the optimal survey season (mid-May-August) will be required to provide a robust assessment of roost type, species and numbers as these works could directly impact these roosts. If impacts cannot be avoided an EPSM licence will be required.	and away from artificial light sources.
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For full justification of these recommendations, please go straight to section [4.0 Conclusions, Impacts and Recommendations](#). Otherwise, the full report starts below.

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1.0 Introduction and Context

1.1 Background

Arbtech were commissioned by Marilyn McManus to undertake a suite of emergence/re-entrance surveys at 29 Elm Grove, Barnham, West Sussex PO22 0HL. The assessment is informed by the Bat Conservation Trust Publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed.) 2016).

These surveys were completed following recommendations made in the Preliminary Roost Assessment Survey report (Arbtech Consulting Ltd. September 2018)

1.2 Site Context

The site is located at National Grid Reference SU 9552 0510 and measures approx. 0.11ha. There is one building on site. The site lies in a residential area in Barnham.

1.3 Scope of the report

This report provides a description of the bat activity observed and recorded during each survey. The aim of the assessment was to characterise any roosts present including species, numbers and access points, roosting locations, timing of use and type of roost, and to gain an understanding of how bats use the site.

Robust data has been collected, following good practice guidelines, to inform an assessment of the potential impacts of the proposed development on bats, and inform mitigation and enhancement. This report provides information on constraints to the proposals as a result of roosting bats, and summarises any mitigation required to achieve planning permission, and statutory consent to comply with wildlife legislation.

To achieve the aims of the assessment, the following steps have been taken:

- A desk study has been carried out, including a request for information from the local records centre - please refer to the Preliminary Roost Assessment Survey report (Arbtech, 2018).
- A field survey has been undertaken, including an external survey and internal inspection.
- An outline of likely impacts on any known roosts has been provided, based on current development proposals.
- Recommendations for further survey and assessment have been made, along with advice on European Protected Species Mitigation Licensing if appropriate.

A survey plan is presented in Appendix 1 showing the location of each surveyor and the bat activity observed and recorded during each survey, the proposed plan is included in Appendix 2 (where available), and a summary of relevant legislation can be found in the Appendix 3.

1.4 Project Description

The development proposals involve the demolition of the garage and rear extension and the addition of a side and rear single storey extension to the existing dwelling.

2.0 Methodology

2.1 Desk Study methodology

Existing bat records relating to the site and a surrounding 2km radius (the study area) are required to conform to national guidelines and these have been obtained from SxBRC. A review of the landscape structure using aerial images from Google Earth and OS maps, and designated sites, habitat and granted EPSL records held on Magic.gov.uk was completed for the PRA.

2.2 Site Survey methodology

The survey methods were informed by the Preliminary Roost Assessment (PRA) completed by Arbtech Consulting Ltd (September 2018). This survey identified the following survey requirements in line with best practice:

B1 – Roost presence/likely absence surveys are required on the building.

Three bat emergence/re-entry surveys are required during the active bat season (May – September). To comply with national guidelines at least two of the surveys should be completed during the optimal survey period (mid-May to August), and one of the surveys must be a dawn re-entry survey.

Three surveyors are required to provide full coverage of the building.

The surveys involved surveyors positioned around the building ensuring that all elevations and roof sections could be clearly observed. Particular attention was paid to the areas of the building identified as providing suitable access points to bat roosts. The location of each surveyor during each survey is shown in Appendix 1. Each surveyor was assigned an area of the building to observe for the duration of the survey. Surveyors used Heterodyne and Frequency Division bat detectors, and Wildlife Acoustics EM3+ and Echo Meter Touch detectors connected to iPads. Bat echolocation calls recorded during the surveys were analysed using Wildlife Acoustics sound analysis software Kaleidoscope V3.1.7 when required. That is, the Echo Meter Touch includes an Auto ID bat species, however this is not 100% accurate and further post-survey sound analysis is often required to confirm species misidentified by the Auto ID software during the survey. Surveyors also used survey record sheets, pens/pencils, head torches for recording all activity observed during the surveys including foraging and commuting behaviour as well as emergence/re-entries by bats. Surveyors equipped with night vision binoculars and/or thermal imaging equipment are identified by “NV” or “ThIm” in Table 7. All surveyors had hand held radios for communication between surveyors to assist with confirming obscure bat activity e.g. a bat emergence or a bat passing over the building.

In accordance with the latest bat survey guidelines (Collins, J. 2016) dusk emergence surveys commenced 15 minutes before sunset and continued for 1½ - 2 hours after sunset – depending upon bat activity and surveyor visibility. Dawn re-entry surveys commenced 2 hours before sunrise and continued until 15 minutes after sunrise.

Surveys were completed during optimal weather conditions i.e. when temperatures were above 10°C, with no rain or strong winds, as these environmental variables can impact upon bat emergence and foraging behaviour.

2.3 Surveyors

The lead surveyor was Natalie Evans, Bat Licence England: 2016-11257-CLS-CLS. The lead surveyor was assisted by two other surveyors. The designated position of each surveyor during each survey is detailed in the tables in Section 3.6 below and shown on the plan in Appendix 1.

2.4 Survey Timings and Weather Conditions

The dates and times of each survey are presented in Table 1, along with sunset/sunrise times as applicable and the weather conditions at the start and end of each survey.

Table 1: Survey schedule and weather conditions

Reference	Survey date	Survey Start and End Times Sunset/sunrise time	Weather Conditions Start	Weather Conditions END
B1	10/09/18	19:10 – 21:30 Sunset: 19:30	Temp: 17°C Humidity: 60% Cloud Cover: 50% Wind: 7 mph Rain: none	Temp: 15.3°C Humidity: 92% Cloud Cover: 20% Wind: 7 mph Rain: None

2.5 Limitations – evaluation of the methodology

These surveys follow best practice guidance to confirm presence/absence of roosting bats and where present, characterise the roost. However, this information is collected at finite dates and times, and provides an indication of the conditions on site only. The use of the building and the site as a whole by bats, at all times cannot be established based on this information.

The survey was carried out at a sub-optimal time of year and therefore maternity roosts could have been missed as these would have dispersed by September. This is unlikely to affect the recommendations in this report as the roosting features will be retained and a precautionary working method will avoid disturbance to the roosts over the summer months.

3.0 Results and Evaluation

3.6 Survey Results

The results of each survey are provided in the tables below.

Table 2: Survey results – Dusk Emergence Survey

Date		10/09/2018
Start and End Times		19:10 – 21:30 Sunset: 19:30
Surveyor (position) As shown in Appendix 1		Natalie Evans - Natural England Bat Licence Number: 2015-11257-CLS-CLS (Position 1 – observing the south east and south west elevations and roof structures of B1) Jonathan Kewell – four years survey experience (Position 2 – observing the south west and north west elevations and roof structures of B1) Michelle Barnes – one year's survey experience (Position 3 – observing the north east elevations and roof structures of B1)
Building Reference	Surveyor Position	Notes/observations:
B1	1	During the survey the previously identified potential roosting features on the rear extension were checked again in the low light with a torch to provide a better assessment of the gaps under tiles and under fascia boards. On closer inspection the tiles, although warped, did not lead to any crevices or crawl spaces and therefore are considered generally unsuitable for crevice dwelling bats. The gaps under the fascia boards also do not lead anywhere and would not provide the enclosed secure environment required for crevice dwelling bats. <i>A common pipistrelle <i>Pipistrellus pipistrellus</i> emerged from beneath the ridge tile on the north west facing roof of the south west elevation at 19:47 and flew around the building and off to the north east. A second common pipistrelle emerged from the same location at 19:50 and flew south west down the garden. See below for location:</i>  Photo 1: common pipistrelle x 2 emergence point. A soprano pipistrelle <i>Pipistrellus pygmaeus</i> passed south west to north east across the site at 19:55.

		<i>A common pipistrelle emerged from the hanging tiles on the dormer window at 19:57 and flew north west. See below for location:</i>  Photo 2: common pipistrelle emergence point. A soprano pipistrelle passed across the site from the north east and headed south west down the garden at 19:58. Common pipistrelles passed from the adjacent property to the north west at 20:04 and 20:05 travelling south east and south west. Only infrequent distant common and soprano pipistrelle passes were recorded for the rest of the survey.
B1	2	Same activity and emergences recorded as Surveyor 1 above.
B1	3	A common pipistrelle passed around the building at flew north east at 19:47 (bat emerged as seen by Surveyors 1 and 2). A common pipistrelle passed in the distance unseen at 19:52. A common pipistrelle passed from the south west up the side of B1 and then over to the adjacent property to the north west at 19:57 (bat emerged as seen by Surveyors 1 and 2). A common pipistrelle passed from the property to the north west and flew north east across the driveway at 19:59. A soprano pipistrelle passed unseen at 20:02. <i>A common pipistrelle emerged from beneath the eaves on the north east elevation and flew north east at 20:08. See below for location:</i>

		 Photo 3: common pipistrelle emergence. Infrequent common and soprano pipistrelle distant passes thereafter.
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4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

It is assessed that a European protected species mitigation licence (EPSML) will not be required in this instance as impacts to bat roosts can be avoided using a precautionary working methodology.

4.2 Evaluation

Taking the desk-based assessment and site survey results into account, the following recommendations are reached for each site survey feature.

Table 5: Evaluation of buildings on site

Ref	Survey assessment conclusions (Type of bat roost present)	Foreseen impacts	Recommendations / Mitigation	Enhancements
B1	Common pipistrelle roosts have been confirmed x 4 bats (three roost sites) within the roof structures on the main building. These will all be retained. The potential roosting features identified in the PRA on the rear extension and front porch roof are considered to have low-negligible habitat value due to the presence of the ideal roosting habitat in the main roof structures where roosts have been confirmed. It is unlikely that these lower, sub-optimal features would also be used.	Roosts could be disturbed during the development.	A precautionary working method will be employed to avoid impacting bat roosts present. The work will be carried out over the winter months between November and March to prevent noise and vibration disturbance to the roosts in the roof structures which will be used over the spring/summer/early autumn. The roof and hanging tiles on the rear extension and porch roof will be removed carefully by hand. In the unlikely even that a bat is found, the bat must be carefully re-covered, and work must stop. Arbtech must then be contacted for further advice. There are no planned works that will directly impact the main roof structures, eaves, dormer window or chimneys on the property. If there is to be any work of this nature carried out, a further two surveys (one at dusk and one at dawn) within the optimal survey season (mid-May-August) will be required to provide a robust assessment of roost type, species and numbers as these works could directly impact these roosts. If impacts cannot be avoided an EPSM licence will be required.	The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99 To increase bat habitat on site a bat box should be added to the south west elevation. A wall mounted box such as the Schwegler 1FQ would be ideal. The box will need to be placed high up close to the eaves and away from artificial light sources.

5.0 Bibliography

- Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists —Good Practice Guidelines, 3rd edition, Bat Conservation Trust, London.
- Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected?
- Google Earth (2018)
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

Appendix 1: Survey Plan 2018



Appendix 2: Proposed Site Plan





Appendix 3: Legislation and Planning Policy related to bats

LEGAL PROTECTION

All species of bat are fully protected under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2.

Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. all bats)
- Deliberate disturbance of bat species as:
 - a) to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young
 - (ii) to hibernate or migrate
 - b) to affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

Bats are also protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale

Effect on development works:

A European Protected Species Mitigation (EPSM) Licence issued by the relevant statutory authority (e.g. Natural England) will be required for works likely to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficiency/success to be monitored.

The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost (Garland & Markham, 2008)

Emergence and Activity Bat Surveys

NATIONAL PLANNING POLICY (ENGLAND)*National Planning Policy Framework*

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as UK Biodiversity Action Plan priority species) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act, 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.