



Bat Survey - Emergence and Activity Surveys

13 Highdown Hill Road, Reading, Berkshire RG4 8QR

Mr and Mrs Robinson

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Executive summary

Arbtech Consulting Ltd. undertook a suite of emergence and activity surveys on 13 Highdown Hill Road, Reading, Berkshire RG4 8QR on 27th June and 3rd August 2017. The aim of the assessment was to confirm the presence/likely-absence of a bat roost and to provide a current status on all survey features.

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 are for a 'two-storey rear extension'. A planning application is being prepared for submission to Reading Borough Council.

Recommendations

Survey feature/Roost Status	Recommendation
B1 No roost present	In the unlikely event that bats are unexpectedly found during any stage of the development, work should stop immediately and a suitably qualified ecologist should be contacted to seek further advice.

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 Mr and Mrs Robinson to undertake a suite of emergence/re-entry and activity surveys at 13 Highdown Hill Road, Reading, Berkshire RG4 8QR. 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. April 2017).

1.2 Site Context

The site is located at National Grid Reference SU 7128 7684, and has an area of approximately 0.1ha. There is one building assessed within the site boundaries. Building B1 was the subject of the surveys as this will be impacted by the proposed development.

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, April 2017)
- 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

This report is prepared in support of 'two-storey rear extension'. A planning application is being prepared for submission to Reading Borough Council.

The proposed site plan is included in Appendix 2 (where available).

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 will need to be requested from Herts Environmental Records Centre. 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 to inform these surveys. Please refer to the Preliminary Roost Assessment Survey report (Arbtech, April 2017).

2.2 Site Survey methodology

The survey methods were informed by the Preliminary Roost Assessment Survey completed by Arbtech Consulting Ltd (April 2017). This survey identified the following survey requirements in line with best practice:

B1: Moderate habitat value for roosting bats – two roost presence/likely-absence surveys required.

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 is Laura Mclellan BSc (Hons) AMIEnvSc [Accredited agent on Natural England Bat Licence Number: 2016-22119-CLS-CLS] and was assisted by two other surveyor over the two visits, all with several years of bat survey experience. Three surveyors were used to provide sufficient cover of the building during each survey. 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	27/06/17	03:10 – 05:15 Sunrise: 04:49	Temp: 15°C Humidity: 73% Cloud Cover: 50% Wind: 0.30m/s Rain: None	Temp: 13.1°C Humidity: 80% Cloud Cover: 70% Wind: 0.30m/s Rain: None
B1	03/08/17	20:30 – 22:10 Sunset: 20:49	Temp: 16.7°C Humidity: 76% Cloud Cover: 70% Wind: 2.30m/s Rain: None	Temp: 16.3°C Humidity: 77% Cloud Cover: 90% Wind: 2.50m/s 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.

There were no specific limitations to the survey.

3.0 Results and Evaluation

3.6 Survey Results

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

Table 2: Survey results – Dawn Re-entry Survey

Date		27/06/17
Start and End Times		03:10 – 05:15 Sunrise: 04:49
Surveyor (position) As shown in Appendix 1		Laura Mclellan - Accredited agent on Natural England Bat Licence Number: 2016-22119-CLS-CLS (Position 1 – observing the west elevation and roof structure of B1) Sam Sale - 1yrs experience of conducting these types of surveys (Position 2 - observing the north and east elevations and roof structure of B1) Adrian Grocott - 1yrs experience of conducting these types of surveys (Position 3 - observing the south and east elevations and roof structure of B1)
Building Reference	Surveyor Position	Notes/observations:
B1	1	A commuting pass by a common pipistrelle at 03:20, 03:21, 03:24 and 03:29. Bat not seen, but direction of echolocation suggests the bat was flying to the rear (west) of Surveyor 1. Foraging activity by a common pipistrelle at 03:24. Bat not seen, but direction of echolocation suggests the bat was flying to the rear (west) of Surveyor 1. A distant pass by a noctule at 03:36. Bat not seen and direction of echolocation could not be determined. A pass by a brown long-eared bat at 03:49. Bat not seen, but direction of echolocation suggests the bat was flying overhead to the rear (west) of Surveyor 1. A distant pass by a noctule at 04:22 and 04:23. Bat not seen and direction of echolocation could not be determined. A distant pass by a common pipistrelle at 04:24. Bat not seen and direction of echolocation could not be determined.
B1	2	A distant pass by a common pipistrelle at 03:13, 03:14, 03:23, 03:24 and 03:32. Bat not seen, bat not seen but direction of echolocation suggests the bat was flying along the treeline to the rear (east) of Surveyor 2. Foraging activity by a common pipistrelle at 03:15 and 03:21. Bat not seen, but direction of echolocation suggests the bat was circling the treeline to the rear (east) of Surveyor 2. A distant pass by a noctule at 03:36. Bat not seen and direction of echolocation could not be determined. A pass by a common pipistrelle at 03:40 and 03:44. Bat not seen, bat not seen but direction of echolocation suggests the bat was circling the treeline to the rear (east) of Surveyor 2. Foraging activity by a common pipistrelle at 04:12 and 04:23. Bat observed circling the garden at the rear (east) elevation of B1.
B1	3	A pass by a common pipistrelle at 03:16. Bat not seen and direction of echolocation could not be determined. A distant pass by a common pipistrelle at 03:24, 03:25 and 03:40. Bat not seen, bat not seen but direction of echolocation suggests the bat was circling the treeline to the rear (east) of Surveyor 2.

		A commuting pass by a common pipistrelle at 03:44, 04:12, 04:13 and 04:24. Bat flying from north to south past the rear (east) elevation of B1, before continuing past the side (south) elevation of B1.
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Table 3: Survey results – Dusk Emergence Survey

Date		03/08/17
Start and End Times		20:30 – 22:10 Sunset: 20:49
Surveyor (position) As shown in Appendix 1		Laura Mclellan - Accredited agent on Natural England Bat Licence Number: 2016-22119-CLS-CLS (Position 1 – observing the west elevation and roof structure of B1) Sam Sale - 1yrs experience of conducting these types of surveys (Position 2 - observing the north and east elevations and roof structure of B1) Mollie Mclellan - 1yrs experience of conducting these types of surveys (Position 3 - observing the south and east elevations and roof structure of B1)
Building Reference	Surveyor Position	Notes/observations:
B1	1	A pass by a soprano pipistrelle at 21:23 and 21:45. Bat not seen, but direction of echolocation suggests the bat was flying overhead to the rear (west) of Surveyor 1.
B1	2	A distant pass by a common pipistrelle at 21:03. Bat not seen and direction of echolocation could not be determined. Foraging activity by a common pipistrelle at 21:09 and 21:13. Bat was observed flying from west to the east past the side (south) elevation of B1, before continuing eastwards. A pass by an unidentified pipistrelle species at 21:45. Bat not seen and the echolocation call was very brief, making species identification difficult to determine with certainty.
B1	3	A pass by a common pipistrelle at 21:09. Bat was observed flying from west to the east past the side (south) elevation of B1, before continuing eastwards. (Same bat was observed by Surveyor 2). A pass by a common pipistrelle at 20:12 and 21:45. Bat not seen and direction of echolocation could not be determined.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

The surveys undertaken to date in and around B1 provide sufficient information to inform a planning decision. An EPSML **will not** be required to enable the proposed works to be lawfully undertaken.

Appropriate justification for this assessment is provided in Section 3 and Tables 1 and 2 of this report.

4.2 Evaluation

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

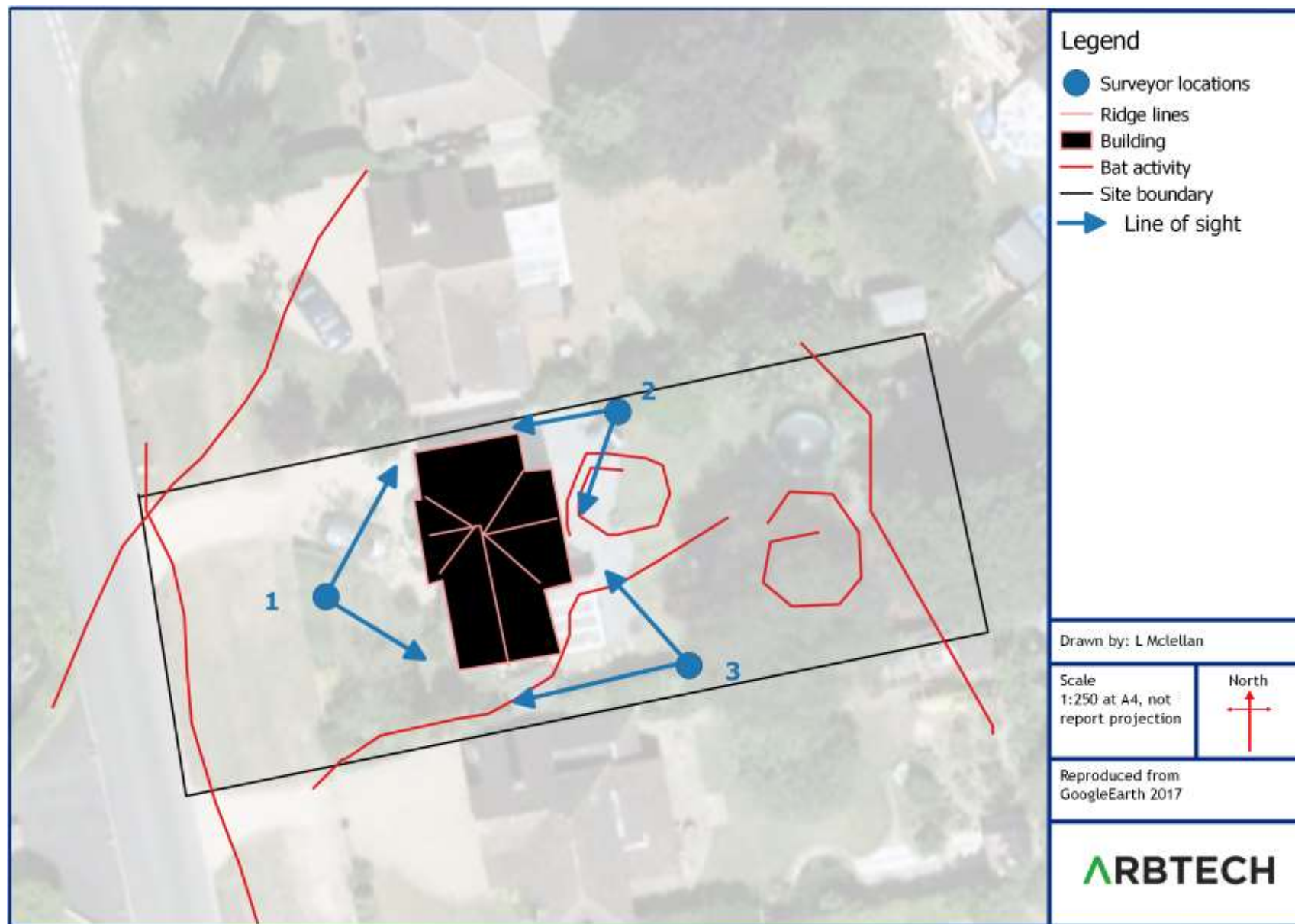
Table 5: Evaluation of buildings on site

Ref	Survey assessment conclusions (Type of bat roost present)	Foreseen impacts	Recommendations / Mitigation	Enhancements
B1	No roost present.	No bat roost present in B1. Bats are very unlikely to be roosting within B1 and as such, there are not anticipated to be any impacts on bats as a result of the proposed works.	In the unlikely event that bats are unexpectedly found during any stage of the development, work should stop immediately and a suitably qualified ecologist should be contacted to seek further advice.	The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99 The developed site can be enhanced for the bat species observed to be foraging and commuting across the site during the surveys by installing of a minimum of three bat boxes on mature trees around the site boundaries or retained buildings e.g. 2F Schwegler Bat Box 1FF Schwegler Bat Box 2FN Schwegler Bat Box Box Bat boxes should be positioned 3-5m above ground level facing in a south/south-westerly direction, with the exception of the 2FN bat box which will face in a northerly direction. All bat boxes will be positioned with a clear flight path to and from the entrance. Bat boxes should also be positioned away from any artificial light sources.

5.0 Bibliography

- Collins, J. (ed.) (2012). 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 (2017) accessed on 05/07/2017.
- Magic database (2017) <http://www.magic.gov.uk/MagicMap.aspx> accessed on 19/07/2017.
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

Appendix 1: Survey Plan



Appendix 2: Proposed Site Plan

None provided.

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)

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.