



Bat Survey - Emergence and Re-Entry

20 Chalgrove Way, Emmer Green, Reading, RG4 8SJ

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Executive summary

Arbtech Consulting Ltd. undertook a suite of emergence/re-entrance surveys at 20 Chalgrove Way, Emmer Green, Reading RG4 8SJ on 24th August and 20th September 2017. The aim of the assessment was to determine presence/likely-absence of bats in the buildings as identified in the PRA (Arbtech 2017).

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 demolition of the existing dwelling and garages and the creation of two new residential units.

Recommendations

Ref	Survey assessment conclusions (Type of bat roost present)	Foreseen impacts	Recommendations / Mitigation	Enhancements
B1, B2 and B3	No roosts present.	No bat roost present in the buildings. Bats are very unlikely to be roosting within B1, B2 or B3 and as such, there are not anticipated to be any impacts on bats as a result of the proposed works.	As a precautionary measure, the hanging tiles and roof tiles must be removed carefully by hand before demolition. 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 bats by adding a 'Habibat' bat brick to each of the new buildings. These are integrated bat boxes that match the brickwork of the building and do not require any maintenance. They should be positioned high up around the eaves and face south/south west. Bat boxes should also be positioned away from any artificial light sources.

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 Archway Green to undertake a suite of emergence/re-entrance surveys at 20 Chalgrove Way, Emmer Green, Reading RG4 8SJ. 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. 2017)

1.2 Site Context

The site is located at National Grid Reference SU 7204 7682 and covers approx. 900m². Three buildings were surveyed as these will be impacted by the development. The site lies in a residential area in Emmer Green in close proximity to a golf course and woodland.

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, 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

The development proposals involve demolition of the existing dwelling and garages. 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 have been obtained from Berkshire and South Buckinghamshire Bat Group. 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 (Arbtech 2017).

2.2 Site Survey methodology

The survey methods were informed by the Preliminary Ecological Appraisal completed by Arbtech Consulting Ltd (June 2016). This survey identified the following survey requirements in line with best practice:

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

Two bat emergence/re-entry surveys are required during the active bat season (May – September). To comply with national guidelines at least one 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. If bats are observed using the building as a roost, a further survey will be required to inform a European Protected Species Mitigation Licence application to Natural England once planning has been granted.

Four surveyors are required to provide full coverage of the buildings.

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.

Emergence and Activity Bat Surveys

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 Natalie Evans, Bat Licence England: 2016-11257-CLS-CLS and was assisted by 7 other surveyor over the three visits, all with several years of bat survey experience. 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	24/08/17	04:00 – 06:15 Sunrise: 06:03	Temp: 15.2°C Humidity: 93% Cloud Cover: 60% Wind: 1mph Rain: None	Temp: 14.3°C Humidity: 90% Cloud Cover: 40% Wind: 2mph Rain: None
B1	20/09/17	18:50 – 21:10 Sunset: 19:08	Temp: 16.2°C Humidity: 65.5% Cloud Cover: 80% Wind: 5mph Rain: None	Temp: 15.1°C Humidity: 74.6% Cloud Cover: 70% Wind: 7mph 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 north west elevations of B2 and B3 and the western roof of B2 could be not be viewed due to their proximity to the site boundary. This could lead to an under recording of bat activity and therefore precautionary measures have been recommended.

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		24/08/17
Start and End Times		04:00 – 06:15 Sunrise: 06:03
Surveyor (position) As shown in Appendix 1		Joseph Slade – four years survey experience – (Position 1 – observing the south and west elevations of B1 and the southern elevation of B2) Toby Bowman – four years survey experience – (Position 2 – observing the northern elevation of B1 and the eastern elevation of B2) Charlotte Hammond - (Natural England Bat Licence Number: 2016-27302 CLS-CLS) – (Position 3 – observing the northern elevation of B1 and the western elevation of B3) Josephine McCarthy – four years survey experience – (Position 4 – observing the eastern elevation of B1 and the southern and eastern elevations of B3)
Building Reference	Surveyor Position	Notes/observations:
B1 and B2 south and west	1	A brown long-eared bat <i>Plecotus auritus</i> passed unseen at 04:47 The calls were too brief to determine direction of flight. A soprano pipistrelle <i>Pipistrellus pygmaeus</i> passed south to west at 05:25.
B1 and B2 north and east	2	An unidentified <i>Myotis</i> bat passed unseen at 05:06. The calls were too brief to determine species and direction of flight.
B1 and B3 north and west	3	A soprano pipistrelle passed unseen at 04:51. An unidentified myotis passed from the south over B1 at 05:05.
B1 and B3 south and east	4	An unidentified <i>Myotis</i> bat passed unseen at 05:06. The calls were too brief to determine species and direction of flight.

Table 3: Survey results – dusk emergence survey

Date		20/09/17
Start and End Times		18:50 – 21:10 Sunset: 19:08
Surveyor (position) As shown in Appendix 1		Natalie Evans - Natural England Bat Licence Number: 2015-11257-CLS-CLS (Position 1 - observing the south and west elevations of B1 and the southern elevation of B2) Jonathan Kewell – three years survey experience - (Position 2 - observing the northern elevation of B1 and the eastern elevation of B2) Charles Ryder – one year's survey experience - (Position 3 - observing the northern elevation of B1 and the western elevation of B3) Joanna Andrews - four years survey experience – (Position 4 - observing the eastern elevation of B1 and the southern and eastern elevations of B3)
Building Reference	Surveyor Position	Notes/observations:
B1 and B2	1	A noctule <i>Nyctalus noctula</i> passed south east to north west at 19:17. Infrequent unseen soprano pipistrelle activity to the south from 19:37.
B1 and B2	2	A noctule passed south east to north west at 19:17.
B1 and B3	3	A noctule passed south east to north west at 19:17. Common pipistrelles passed unseen at 19:43 and 19:47.
B1 and B3	4	A noctule passed south east to north west at 19:17. A common pipistrelle emerged from the adjacent property at 19:25. Infrequent unseen soprano pipistrelle activity to the south from 19:42.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

The surveys undertaken to date in and around B1, B2 and B3 demonstrate a likely-absence of bat roosts within the buildings. An EPSML **will not** be required for the development.

Appropriate justification for this assessment is provided in Section 3 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.

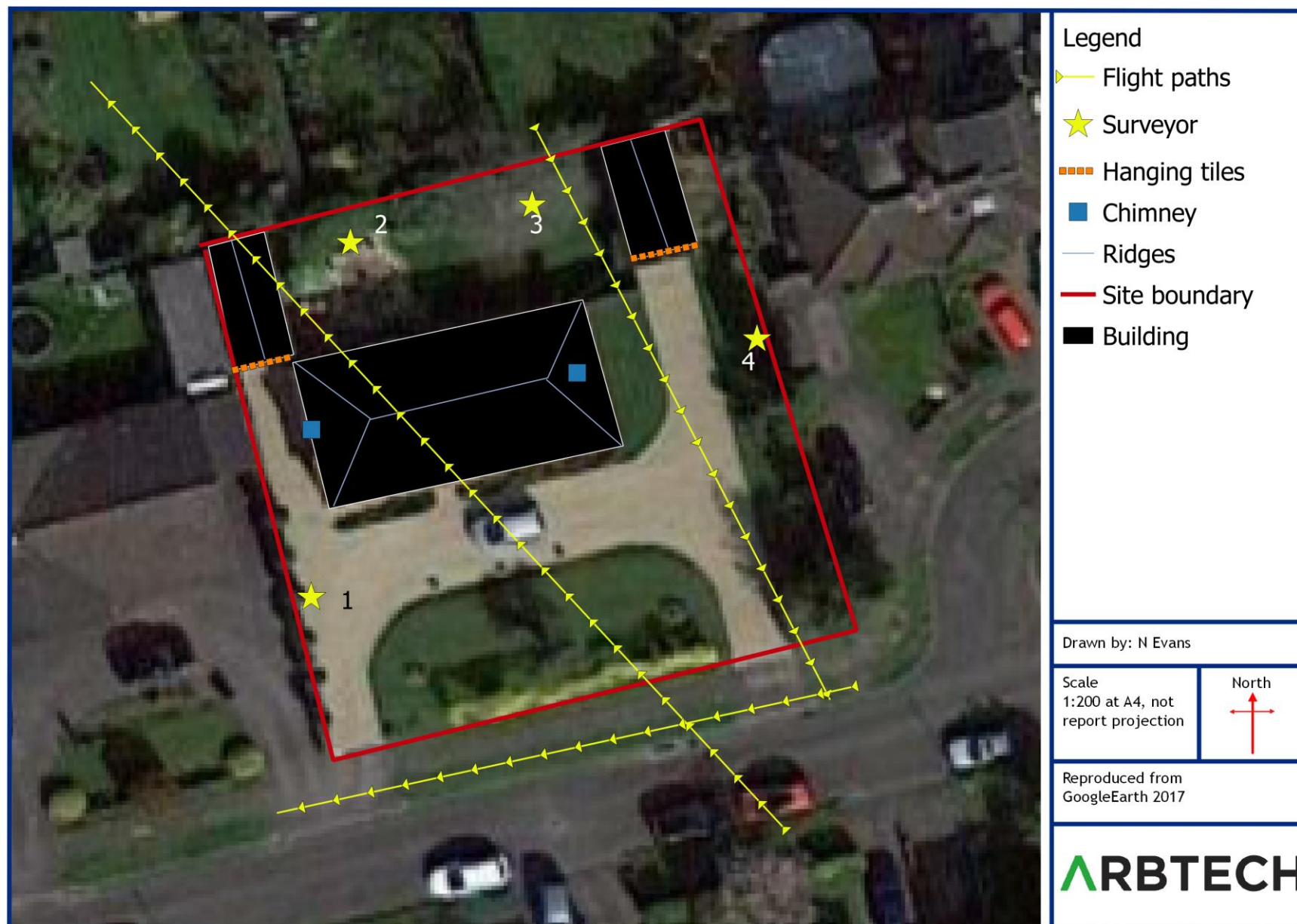
Table 5: Evaluation of buildings on site

Ref	Survey assessment conclusions (Type of bat roost present)	Foreseen impacts	Recommendations / Mitigation	Enhancements The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99
B1, B2 and B3	No roosts present. There was a very low level of bat activity around the buildings and no bats were seen to emerge or re-enter. Although some elevations could not be observed, it is unlikely that emergences were missed due to the general low level of bat activity in the near vicinity of the site.	No bat roost present in the buildings. Bats are very unlikely to be roosting within the buildings and as such, there are not anticipated to be any impacts on bats as a result of the proposed works.	As a precautionary measure the hanging tiles and roof tiles must be removed carefully by hand before demolition. 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 developed site can be enhanced for bats by adding a 'Habibat' bat brick to each of the new buildings. These are integrated bat boxes that match the brickwork of the building and do not require any maintenance. They should be positioned high up around the eaves and face south/south west. 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?
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

Appendix 1: Survey Plan



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)

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.