Bat Presence / Absence Survey

Buildings

At

Serpentine Road, Cleckheaton, West Yorkshire, BD19 3HU

Address	Serpentine Road, Cleckheaton, West Yorkshire, BD19 3HU		
Client	McCarthy & Stone Retirement Lifestyles Ltd	**Ecologist**	Victoria Telford
Our Ref	E2402161302	**Director**	Andy Hobbs
Report Date	07 July 2016	**Quality Checked**	Jonathan Jones
Scope of Report	Bat Absence / Presence Survey – Buildings		

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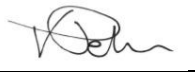
Version	Date	Author	Checked	Approved
1	07/07/2016	V Telford 	T Davison 	J Jones 

The opinions and information contained within this report were gathered using due skill, care and diligence. The report complies with the Biodiversity Code of Practice for Planning and Development (BS42020:2013) and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

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Executive Summary

A thorough survey, both external and using ultrasonic detection equipment with data analysis, was made of the building scheduled for demolition, by experienced ecologists.

The external building inspection identified a number of possible ingress/ egress points for bats, these observations were used to guide the ultrasonic surveys at dawn and dusk.

Prior to the dusk emergence survey taking place, internal access was gained; only one small loft space was accessed, the main loft space was sealed and inaccessible. A dusk emergence survey was carried out 8th June 2016. Commuting by Common Pipistrelle was noted. A dawn re-entry survey took place 21st June 2016 which revealed foraging by a single Common Pipistrelle. The bat was seen leaving the site heading East at 03:55 and did not return.

At no point were bats seen entering or leaving the buildings on site and no evidence of their presence was observed in the loft space.

Therefore, based on the findings of the survey the following recommendations have been made:

1. Bat and bird boxes are required within the new development design wherever possible, located on or integrated into the buildings. In this instance, 3 x Bat boxes will be included within the new development design incorporated into the masonry of the new building. Boxes must be situated between 4m and 6m above ground level, with entrances facing North, South-east and South-west to allow for use all year round. Assistance will be engaged from an ecologist in the design and location of bird / bat boxes. A suitable planting scheme is also required, including native and species beneficial to wildlife with native trees and shrubs used to landscape areas surrounding all buildings.

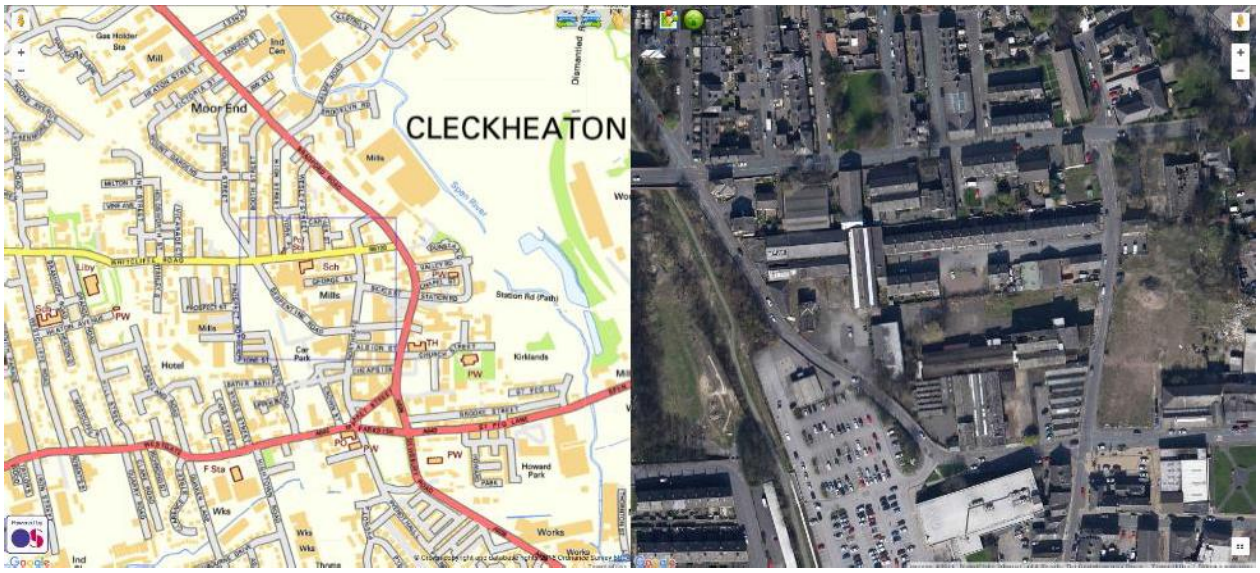
2. A suitable lighting scheme will be incorporated to prevent light pollution into the garden areas after dark with suitable PIR timers only activated by large moving objects (NOT BATS).

Contents

1.0 Introduction

1.1 Background

This report details the results of a Bat Presence/ Absence Survey of all buildings at Serpentine Road, Cleckheaton, West Yorkshire, BD19 3HU. The survey was undertaken to determine whether bats were using these buildings as roosts and was carried out on behalf of McCarthy & Stone Retirement Lifestyles Ltd. The site is centered at Ordnance Survey Grid Reference SE 188 255.



OS. Licence No.100043218

1.2 Site Description

The site comprises hardstanding consisting of concrete poured bases and loose rubble resulting from the demolition of the industrial buildings which previously occupied the site. Now only two built structures remain; an open structure supported by metal frames and joists, and a former residential building. The boundaries, rubble and some areas of concrete have become colonised by tall ruderal species dominated by *Buddleia sp*. The site is enclosed by hoarding.

1.3 Scope of Survey and Limitations

Most of the buildings have already been demolished. We have been advised that the remaining building on site and the surrounding hard landscaping will be demolished and stripped respectively to facilitate later living apartments, townhouses and a car home, with associated hard and soft landscaping. The scope of the report is to assess the presence/ absence of bats and make recommendations based upon the findings of the survey.

One of the loft spaces was sealed and inaccessible. A second survey was recommended to account for the limitation.

Bats are highly mobile in their nature and may only use buildings at certain times of the year that favour a particular part of their roosting, maternity and hibernating requirements.

2.0 Legislation

2.1 Planning and Biodiversity

Local Authorities have a requirement to consider biodiversity under the following European legislation:

- Natural Environment and Rural Communities (NERC) Act (2006);
- The Habitats Directive (EC directive 92/43/EEC);
- Environmental Impact Assessment (85/337/EEC as amended by directive 09/31/EC);
- Strategic Environmental Assessment (2001/42/EEC);
- The Environment Act (1995).

Section 40 of the Natural Environment and Rural Communities Act 2006 (the NERC Act) places a legal duty on public bodies, including planning authorities, to 'have regard' to the conservation of biodiversity when carrying out their normal functions, which includes consideration of planning applications.

In compliance with Section 41 of the NERC Act, the Secretary of State has published a list of species and habitats considered to be of principal importance for conserving biodiversity in England under the UK Post-2010 Biodiversity Framework. This is known as the England Biodiversity Priority (EBP) list, previously referred to as Local Biodiversity Action Plan (LBAP), of which there are 56 habitats and 943 species (Natural England, 2014). Seven bat species are EBP species; these are Barbastelle, Bechstein's, Brown Long-eared, Greater Horseshoe, Lesser Horseshoe, Noctule and Soprano Pipistrelle. The EBP list is used to guide planning authorities in implementing their duty under the NERC Act.

Local Authorities must also have regard for the following national planning policies:

- National Planning Policy Framework (NPPF) (DCLG, 2012);
- ODPM Circular 06/2005 (Defra Circular 01/2005);
- ODPM (March 2006) Planning for Biodiversity and Geological Conservation.

In addition, Soprano Pipistrelle, Noctule and Brown Long-eared Bat are currently listed on Kirklees Local BAP.

2.2 Bat Legislation

All species of bat and their breeding sites or resting places (roosts) are protected under Schedule 2 of The Conservation of Habitats and Species Regulations 2010 and Section 9 of the Wildlife and Countryside Act 1981 (as amended). It is an offence for anyone intentionally to kill, injure or handle a bat, to possess a bat (whether live or dead), disturb a roosting bat, or sell or offer a bat for sale without a licence. It is also an offence to damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not (*Natural England, 2016*).

A roost is protected whether or not bats are present and any activity or works affecting a roost, even when bats are absent, is likely to be subject to the relevant licence procedure with Natural England.

This legislation makes it is an offence either deliberately or recklessly to:

- possess or control any live or dead specimens;
- destroy, damage or obstruct access to any bat roost, or place used for shelter, protection or breeding;
- disturb a bat using such place ('disturbing' a bat can include simply entering its roost and as such the appropriate licence should be held prior to doing so).

Such offences are punishable with a maximum fine is £5,000 per incident or per bat, up to six months in prison, and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.

3.0 Survey Methodology

3.1 Desk Study

A desk study was undertaken to locate all known bat records within a 1km radius of the site, data was requested from West Yorkshire Ecology.

3.2 Weather Conditions and Timing

To comply with current national Best Practice Guidelines (Collins, 2016) bat activity surveys should be carried out in dry weather as bats may not leave their roost site if it is raining heavily, making any survey results suspect. Bat activity surveys should be carried out between May and September and winter hibernation surveys between October and April. The months can vary a little, depending on seasonal and geographic variations.

3.3 Personnel

During the survey effort a minimum of two surveyors were used per survey; all surveyors have been appropriately trained and have had at least three full seasons bat surveying experience. The first survey was supervised by the Senior Ecologist who holds a full Natural England Bat Licence and has had vast experience in bat surveying and mitigation.

Personnel used on surveys are as follows:

Jonathan Jones (Assistant Ecologist): Over 5 years' experience in bat surveying using both heterodyne and Anabat survey equipment.

Paul Hiscocks (Senior Ecologist) (NE Bat Licence CLS001868): Over 10 years' experience with bats, extensive experience in surveying all types of habitat for bats and mitigation including numerous mitigation licences held for exclusion and roost destruction.

Victoria Telford (Graduate Ecologist): Over 4 years' experience in bat surveying using both heterodyne and Anabat survey equipment.

Thomas Hiscocks (Seasonal Field Ecologist): Over 2 years' experience in bat surveying using both heterodyne and Anabat survey equipment.

3.4 Internal / External Building Inspections

A walkover survey of the site and detailed visual inspection of the exterior and interior of the buildings was undertaken to evaluate bat roost potential of the buildings and to locate suitable ingress / egress points that bats could use to fly into the buildings and use areas within to roost. The external inspections were carried out from ground level using a Clulite CB2 1,000,000 candle power torch, Bushnell Nature view Close Focusing 10x42 Roof Prism Binoculars, and a Sony Cyber-Shot 14.1 Mega Pixel camera and where appropriate a Rigid Seesnake Micro Inspection Camera Mk II CA-100 was used to examine inaccessible cavities and a Flir i5 Lightweight Thermal Imaging Camera to check for heat sources (roosting bats).

The internal inspections were carried out using a Clulite CB2 1,000,000 candle power torch, Rigid Seesnake Micro Inspection Camera Mk II CA-100 where necessary, to examine inaccessible cavities, a Sony Cyber-Shot 14.1 Mega Pixel camera for photographs and a Flir i5 Lightweight Thermal Imaging Camera to check for heat sources (Roosting Bats). The following features were the main focal points of the surveys:

- Bats and or bat corpses;
- Droppings, staining and remains of feeding debris;

- Externally: access points such as displaced/missing tiles and ridge tiles, holes in walls, windows or woodwork; and
- Internally: potential roosting points such as cracks and crevices in the structural layout.

3.5 Dusk Surveys (Emergence Survey)

The object of dusk surveys was to detect active bat use of the site and possible exit from buildings at points identified during the daytime inspection; this involved:

- being at the site 15 minutes before sunset and approximately 2 hours after;
- using heterodyne, frequency division and time expansion detectors; additionally, recordings were made using four passive Anabat SD2 detectors left on continuous recording; and
- standing at different vantage points around the buildings (no more than 50m separation), using the bat detectors and attempting to see bats emerging from buildings.

3.6 Dawn Surveys (Re-Entry Survey)

The object of dawn surveys was to detect bats returning to possible roost sites from their night of foraging. Bats tend to swarm around their roost entrance for a period of time before going into the roost, which helps in identifying roost locations; this involved:

- being at the site 1 ½ hours before sunrise;
- use of bat detectors as (3.4 above); and
- observation for swarming bats around the buildings.

3.7 Site Status Assessment

Based on the internal / external inspection and emergence survey results, structures with evidence of bats have been assessed to determine which of the following categories they fall into, if any (Hundt L 2012):

- **Night roost (March-November) –** used by bats as roosts other than traditional day roosts to rest in during the night. May be used by a single individual on occasion or regularly by an entire colony;
- **Day roost (March-November) –** used by bats during the day to rest in, often by males. Bats may regularly use a number of days roosts or the same site for several weeks;
- **Transitional roost (April-September/October)** – used by a few individuals or occasionally small groups of bats on waking from hibernation or in the period prior to hibernation;
- **Feeding roost (May-November) –** can be occupied by a single bat or a few individuals to an entire colony to feed, shelter from the weather or to rest temporarily;
- **Maternity roost (May-August) –** used by breeding females, where babies are born and raised to independence. Adult males rarely found here;

- **Satellite roost (May-August)** – used by a few individuals to small groups of breeding females as alternative roost sites in close proximity to maternity roosts;
- **Swarming sites (August-November)** – where large numbers of bats from several species gather, generally around caves and mines;
- **Mating roost (September-November) –** established by males of some species to display/call to females to mate;
- **Hibernation roost (October-March)** - where bats may be found during the winter. They vary greatly in terms of the number of individuals and diversity of species using them.

The roost assessment criteria in Appendix 4 were then used to ascertain the importance of any roosts present.

4.0 Results: Desk-based Assessment

Bat records within a 1km radius of the application site were obtained from West Yorkshire Ecology.

Species	Scientific Name	Grid Ref (SD)	Source	Date
Lesser Noctule	*Nyctalus leisleri*	7 records	WYE	2002 - 2010
Noctule	*Nyctalus noctula*	3 records	WYE	2011 - 2014
Pipistrelle	*Pipistrellus sp.*	3 records	WYE	2007 - 2014
Common Pipistrelle	*Pipistrellus pipistrellus*	24 records	WYE	2003 - 2014
Bat species	*Vespertilionidae*	12 records	WYE	1999 - 2009

Table 1: Bat Species Desktop Records

4.1 Review of Desk Based Assessment Data

Most of the records are 1km from the site or more. The closest records are for Common Pipistrelle at SE186 254 recorded between 2003 and 2014, located 0.2km West. Several species of bat have been recorded in the area, and during the survey Common Pipistrelle were recorded on site.

5.0 Results: Survey

5.1 Weather Conditions

Survey times, temperatures and weather conditions are detailed below. At all times, weather conditions were conducive to bat survey work.

Date	08/06/2016	Sunset/ rise Time	Sunset 21:35	Survey Type	Dusk Emergence	
				From/ To	21:15	23:00

	Temperature ºC	Humidity %	Cloud Cover / Oktas	Wind Bft Scale	Precipitation Y/N
Start	17.6ºC	70%	8	0 - 1	N
End	15.8ºC	78%	8	0 - 1	N

Date	21/06/2016	Sunset/ rise Time	Sunrise 04:36	Survey Type	Dawn Re-entry	
				From/ To	03:00	04:40

	Temperature ºC	Humidity %	Cloud Cover / Oktas	Wind Bft Scale	Precipitation Y/N
Start	13.5ºC	63%	8	1	N
End	12.1ºC	75%	8	0	N

5.2 External Inspection of the Buildings

An internal and external inspection of the buildings was undertaken to determine their Bat Roost Potential (BRP); this revealed a number of possible ingress/ egress points for bats. The results of the Internal Bat Roost Potential Assessment of the buildings are included in Appendix 2, together with the Bat Roost Potential rating for each building.

The results of the external inspection were used to help focus survey effort during the dusk emergence/ dawn re-entry surveys.

5.3 Dusk Emergence & Dawn Re-Entry Surveys

Date	From	To	Temp	Weather	Species Recorded	Comment
08/06/2016	21:15	23:00	17.6^{O}C	100% cloud, light breeze	Common Pipistrelle	Commuting by Common Pipistrelle was noted at 22:08, 22:10 and 22:22.
21/06/2016	03:00	04:40	13.5^{O}C	100% cloud, occasional slight breeze.	Common Pipistrelle	Foraging by a single Common Pipistrelle noted from 03:24 near the building and along the row of adjacent housing over the gardens. Foraging continued until 03:55, at this point the bat was last seen heading East and did not return to site.

Table 2: Bat Survey Summary of Data

5.4 Data Analysis

Ultrasonic survey data was collected throughout the survey period using four individually placed Anabat SD2 recording devices and one EM3+ on the first survey. Two Anabats were used on the second survey.

On the first survey one was placed in the small accessible loft of the remaining intact building, others were placed externally; all recordings were analysed through Analook software. On the second survey both Anabats were placed externally adjacent the West and East building elevations.

Species positively identified from a combination of visual sighting, flight patterns and data analysis are recorded within Table 2 above.

At no time during data analysis were bats recorded on Anabat recording equipment within the building. All recordings and subsequent screenshots (Appendix 3) were taken from the Anabats placed centrally on site.

6.0 Analysis of Results

An Extended Phase 1 Habitat Survey carried out 16th February 2016 identified the remaining building as Low Bat Roost Potential (LBRP) therefore a minimum of one dusk emergence or dawn re-entry survey was recommended in line with current guidelines (Collins, 2016).

An internal inspection was completed prior to the first dusk emergence survey on 8th June 2016; no evidence of use by bats either current or historic were found although the main loft space was sealed and inaccessible. The dusk survey revealed the site to be used for occasional commuting by Common Pipistrelle, heading North or South. A second survey was recommended to account for the limitation of the internal inspection.

The dawn re-entry survey was undertaken 21st June 2016. Foraging by a single Common Pipistrelle was observed over the building and along the gardens of the adjacent row of houses. Approximately 40 minutes before sunrise at 03:55 the bat was seen leaving the site heading East and did not return.

At no point during the survey effort were bats seen entering or emerging from the remaining building on site.

Impact Assessment

The development to take place is expected to have a slight negative impact on roosting opportunities. The existing building supports features which are suitable for roosting bats and these will be lost upon demolition. This impact can be offset by the inclusion of bat boxes incorporated in the masonry of the new buildings.

The development is expected to have a positive impact on foraging activity, as the site will be transformed from an area dominated by hardstanding (and previously by industrial buildings) to a site with amenity areas and planted borders. To enhance the foraging activities, native trees and shrubs (or trees and shrubs of benefit to wildlife) will be used to landscape areas surrounding the buildings wherever possible. Additionally, a suitable lighting scheme will be incorporated in the proposed scheme to prevent light pollution into the garden areas after dark with suitable PIR timers only activated by large moving objects (NOT BATS).

7.0 Recommendations

A thorough survey, internally/ externally and using ultrasonic detection equipment with data analysis, was made of the building scheduled for demolition at Serpentine Road, Cleckheaton, West Yorkshire, BD19 3HU by experienced ecologists.

Following an Extended Phase 1 Habitat Survey in February 2016, the remaining building was classified as Low Bat Roost Potential (LBRP) and a minimum of one dusk emergence or dawn re-entry survey was recommended.

Prior to the first absence/ presence survey taking place, an internal check was initiated on 8th June 2016. No signs of bats either current or historic were discovered within the inspected loft space. The dusk emergence survey revealed commuting by Common Pipistrelle, with the first sighting being at 22:08 heading North to South.

The dawn re-entry survey took place 21st June 2016. This revealed foraging by a single Common Pipistrelle. At 03:55 the bat was seen heading off site Eastwards and did not return.

At no point were bats seen entering or emerging from the building.

Therefore, based on the findings of the surveys the following recommendations have been made:

1. Bat and bird boxes are required within the new development design wherever possible, located on or integrated into the buildings. In this instance, 3 x Bat boxes will be included within the new development design incorporated into the masonry of the new building. Boxes must be situated between 4m and 6m above ground level, with entrances facing North, South-east and South-west to allow for use all year round. Assistance will be engaged from an ecologist in the design and location of bird / bat boxes. A suitable planting scheme is also required, including native and species beneficial to wildlife with native trees and shrubs used to landscape areas surrounding all buildings.

2. A suitable lighting scheme will be incorporated to prevent light pollution into the garden areas after dark with suitable PIR timers only activated by large moving objects (NOT BATS).

8.0 References

British Standards Institute (BSI) (2013). BS42020 - Biodiversity Code of Practice for Planning and Development. BSI, London.

Collins (2016). *Bat Surveys – Good Practice Guidelines (3rd Edition).* Bat Conservation Trust: London.

Institute of Ecology and Environmental Management (IEEM) (2006). *Guidelines for Ecological Impact Assessment in the United Kingdom*. Available at: http://www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/EcIA_Guidelines/TGSEcIA-EcIA_Guidelines-Terestrial_Freshwater_Coastal.pdf.

Joint Nature Conservation Committee (JNCC) (2004). *Bat Workers Manual* (3rd Edition). JNCC: Peterborough.

Natural England (2014). *Habitats and Species of Principal Importance in England*. Available at: http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx

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

Wray, S., Wells, D., Long, E. & Mitchell-Jones, T. (2007). *EcIA: Specific Issues Associated with Bats.* Presentation at the Mammal Society/Zoological Society of London/IEEM Symposium on Advances in EcIA for Mammals.

Websites for access to Full Legislation and Policy Text:

Conservation of Habitats and Species Regulations 2010 (as amended):
http://www.legislation.gov.uk/uksi/2012/1927/contents/made

Countryside and Rights of Way Act 2000:
http://www.legislation.gov.uk/ukpga/2000/37/contents

Habitats Directive:
http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

National Planning Policy Framework:
http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf

Natural Environment and Rural Communities Act 2006:
http://www.legislation.gov.uk/ukpga/2006/16/contents

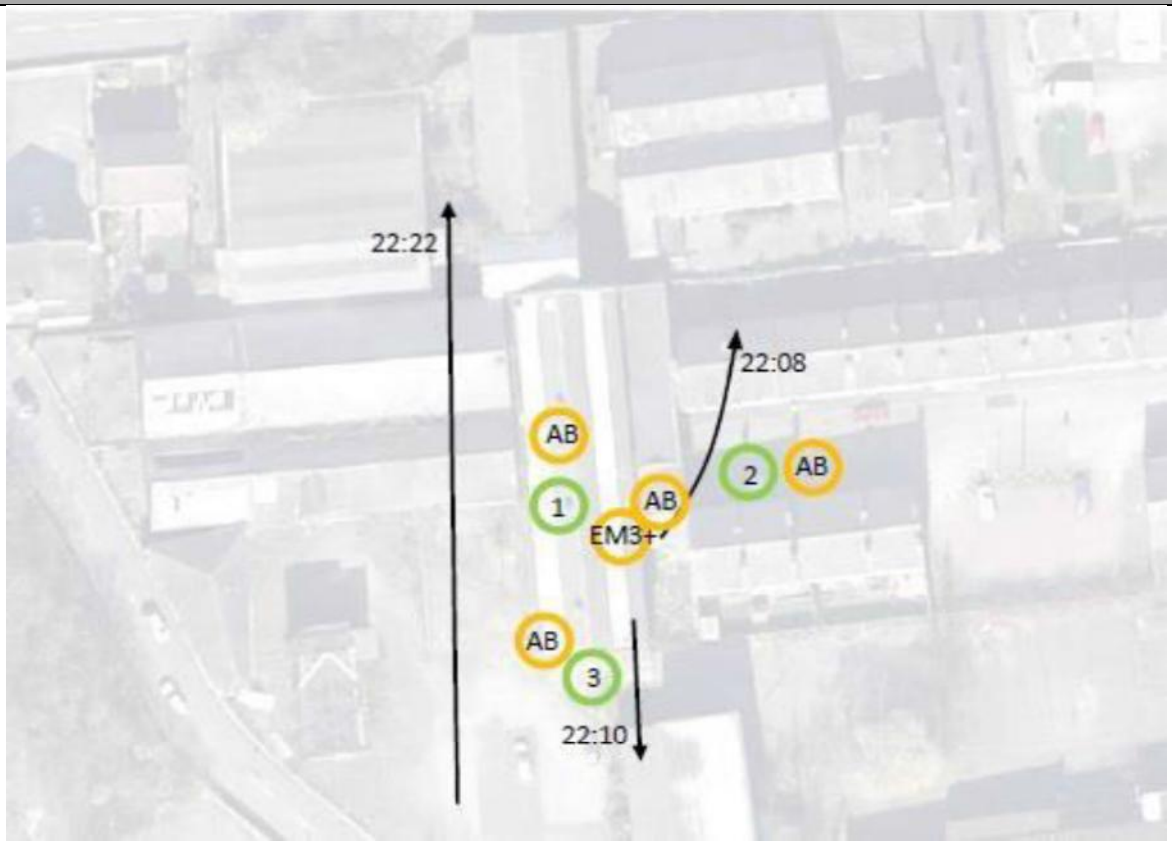
UK Post-2010 Biodiversity Framework:
http://jncc.defra.gov.uk/page-6189.

Wildlife and Countryside Act 1981 (as amended):
http://www.legislation.gov.uk/ukpga/1981/69

APPENDIX 1

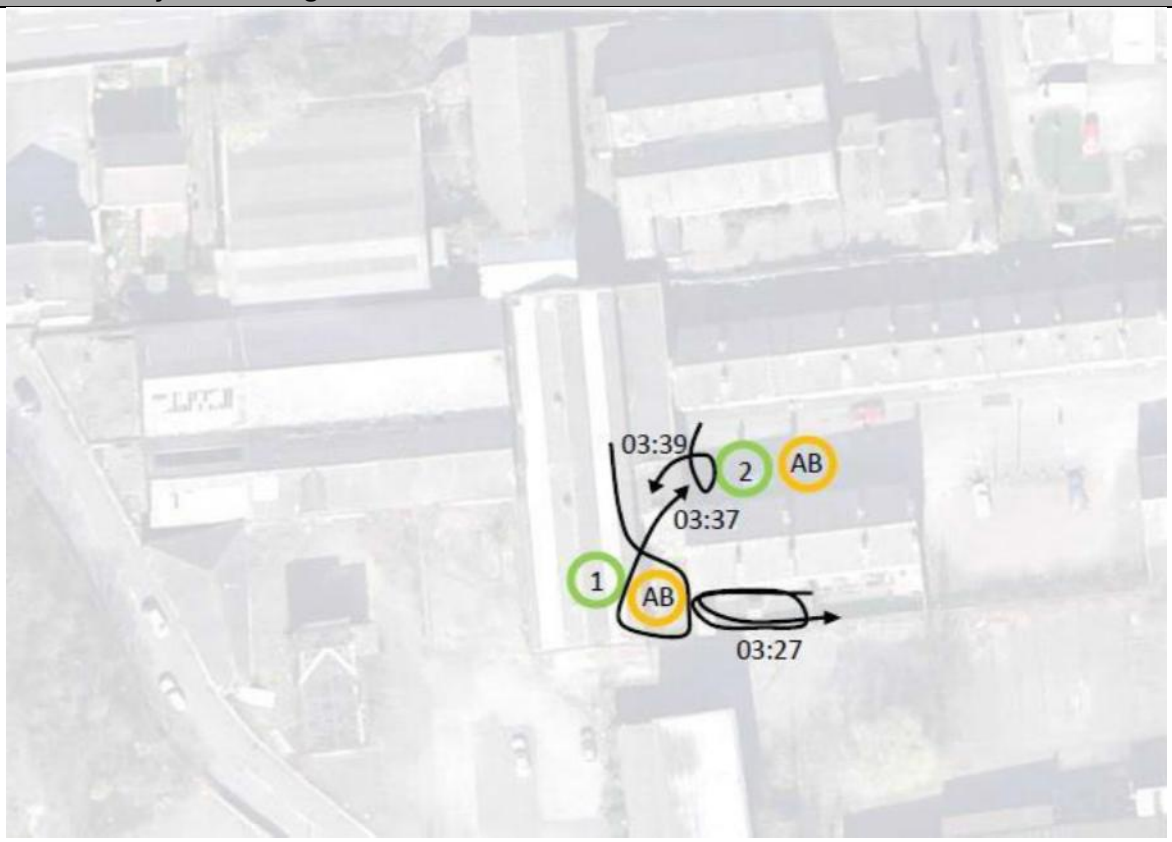
Surveyor Location and Flight Lines

Location of Surveyors and Flight Lines: Dusk 8th June 2016



1	Surveyor 1	P Hiscocks	
2	Surveyor 2	J Jones	
3	Surveyor 3	T Hiscocks	
AB & EM3+	Anabat and EM3+ Recording Device Locations		
↘	Bat flight lines	Common Pipistrelle	

Location of Surveyors and Flight Lines: Dawn 21st June 2016



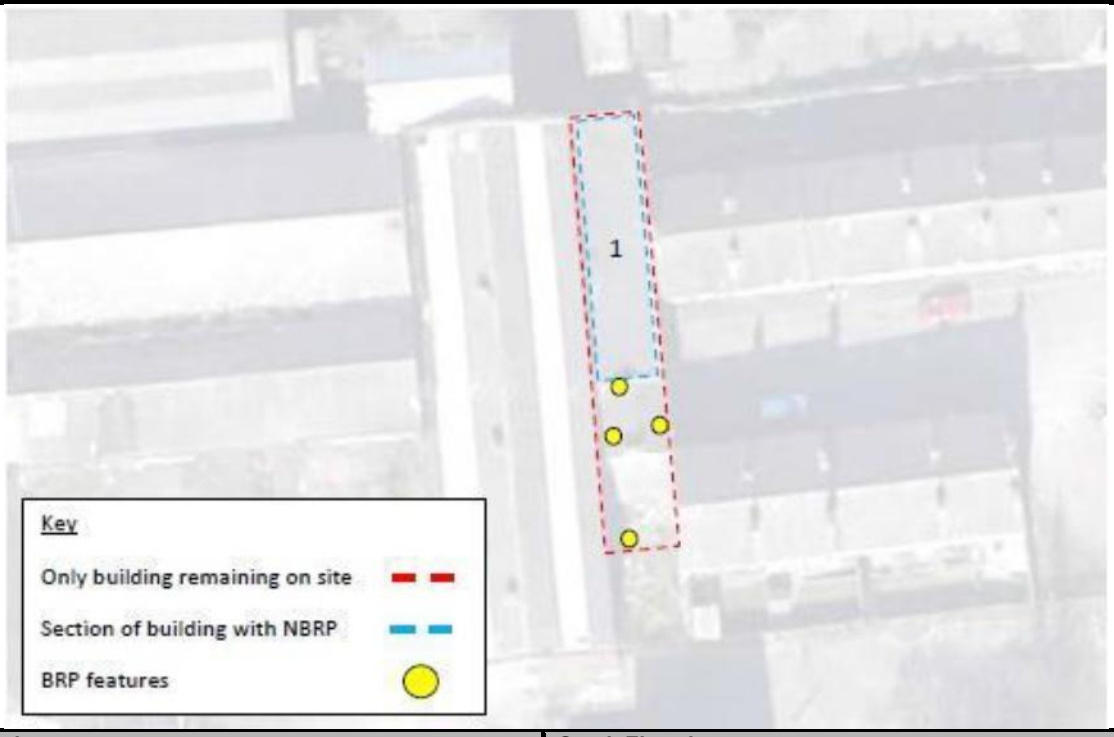
1	Surveyor 1	V Telford	
2	Surveyor 2	J Jones	
AB	Anabat Locations		
↘	Bat flight lines	Common Pipistrelle	

APPENDIX 2

Bat Roost Potential Assessment Results of Buildings

Surveyor	Victoria Telford	**Case Ref**	E2402161302
Site Address	Serpentine Road, Cleckheaton, West Yorkshire, BD19 3HU	**Survey Date**	08/06/2016
Building Type	Unoccupied formerly residential	**Roof Shape**	Pitched with mono pitch extension
Approximate Construction Date	1960	**Roof Cover**	Slate
Number of Stories	2	**Roof Condition**	Some tiles damaged and slipped
Number of Chimneys	1	**Soffits & Condition**	Small section along Southern extension – potential access point
Walls & Condition	Red engineering brick and breeze block in good condition	**Windows & Condition**	PVC in good condition. Most are boarded up
Signs of Bats	No	**BRP**	Low
Additional comments: There was no access to the main loft space as it was sealed.			

Building Plan



Western Elevation

South Elevation