



River Arun, Littlehampton Bat Roost Inspection Survey Report

August 2017

GHD





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Drawing Number: 172768/2/dwg1 Bat Survey Results - Buildings

Appendices

Appendix 1 Criteria for Assessment of Bat Roost Potential in Built Structures

Contact details can be found at the end of this document.

1.0 Introduction

Background

- 1.1 Keystone Ecology was instructed by GHD to undertake a Bat Roost Inspection Survey of Buildings at their site on the River Arun, Littlehampton (central grid reference: TQ 02357 02132). The site is an actively used garage which abuts the River Arun. There are no proposals to directly affect the onsite building however the installation of a new flood defence wall could result in indirect disturbance as a result of increased noise and vibrations.
- 1.2 The report has been produced in accordance with Chapter 11 of Collins (2016) and report writing guidelines produced by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2015).

Aims and Objectives

- 1.3 The aim of the survey was to ascertain the following:
- Presence/absence of bat roosts/potential bat roosts;
 - Status of roosts if present, including the type of roost, likely species and their numbers;
 - Presence of potential roost features (PRFs);
 - Whether additional surveys are required;
 - Whether a European Protected Species (EPS) licence is likely to be required to ensure legal compliance; and
 - Which type of mitigation measures would need to be employed (if any).

Site Characteristics

- 1.4 The site consists of a hardstanding compound, with the main building situated to the northern corner abutting River Road. The site is bordered immediately to the north-east by River Road and to the south-west by the tidal River Arun. Residential properties are situated on its south-east and north-west flanks. The nearby buildings could provide bats with suitable roosting opportunities and the River and linear distribution of buildings could offer bats with suitable commuting features.
- 1.5 Further to the north and west of site lies Littlehampton train station, scattered pockets of park land and further residential properties. Beyond the River Arun to the south and west lie pontoons with boat moorings, industrial areas and a large golf course.

Legislation, Planning Context and Status¹

Protection Legislation

- 1.6 All UK bat species are listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended) (the Conservation Regulations) and as such receive protection under Regulation 41 of these Regulations. All UK bat species are also listed under Schedule 5 of The Wildlife and Countryside Act 1981 and therefore receive protection under Section 9 of this Act (as amended by the Countryside and Rights of Way Act 2000).
- 1.7 This legislation makes it an offence to:
- Deliberately capture or kill a bat;
 - Deliberately disturb² a bat;
 - Intentionally or recklessly disturb³ a bat;
 - Intentionally or recklessly obstruct access to any structure or place a bat uses for shelter or protection; and
 - Damage or destroy a breeding site or resting place of a bat.
- 1.8 In the case of *Vivienne Morge vs. Hampshire County Council* (2010), the Supreme Court has defined deliberate disturbance as 'an intentional act knowing that it will or may have a particular consequence, namely disturbance of the relevant protected species.'
- 1.9 Since 2007 it is no longer a valid defence to show that the killing, capture or disturbance of a species covered by the Conservation Regulations or the destruction or damage of their breeding sites or resting places was the incidental and unavoidable result of an otherwise lawful activity.
- 1.10 EPS licences can be granted by Natural England in respect of development to permit activities that would otherwise be unlawful under the Conservation Regulations, providing that the following 3 tests (set out in the EC Habitats Directive) are passed:
- The development is for reasons of overriding public interest;
 - There is no satisfactory alternative; and
 - The favourable conservation status of the species concerned will be maintained and/or enhanced.

¹Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References Section.

² Affect its ability to survive, breed or rear young, impair its ability to migrate or hibernate, affect its local distribution or abundance.

³ Whilst occupying a structure or place used for shelter or protection.

Protection Afforded by the Planning System

1.11 The National Planning Policy Framework (NPPF) sets out government policy regarding consideration of biodiversity in planning decisions. Under the NPPF the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.

1.12 The NPPF states that:

'When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- proposed development on land within or outside a Site of Special Scientific Interest (SSSI) likely to have an adverse effect on a SSSI (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of SSSIs;*
- development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;*
- opportunities to incorporate biodiversity in and around developments should be encouraged;*
- the following wildlife sites should be given the same protection as European sites: potential Special Protection Areas (SPA) and possible Special Areas of Conservation (SAC); listed or proposed Ramsar sites; and sites identified, or required, as compensatory measures for adverse effects on European sites, potential SPAs, possible SACs, and listed or proposed Ramsar sites.'*

1.13 Under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 public bodies, including Local and Regional Planning Authorities have a duty to 'have regard' to the conservation of biodiversity in England when carrying out their normal functions, which includes consideration of planning applications. In compliance with Section 41 of the Act, the Secretary of State has published a list of species considered to be of principal importance for conserving biodiversity in England under the UK Post-2010 Biodiversity Framework. This is referred to as the list of Species/Habitats of Principal Importance in England, of which there are 56 habitats (HPI) and 943 species (SPI). The list is used to guide planning authorities in implementing their duty under the NERC Act.

1.14 Seven bat species are SPI, these are:

- Barbastelle Bat;

- Bechstein's Bat;
- Noctule Bat;
- Soprano Pipistrelle Bat;
- Brown Long-eared Bat;
- Greater Horseshoe Bat; and
- Lesser Horseshoe Bat.

1.15 A further 2 species are local BAP species for West Sussex (Sussex Biodiversity Partnership, 2001)

- Common Pipistrelle; and
- Nathusius Pipistrelle.

1.16 Under Regulation 9(5) of the Conservation Regulations, Planning Authorities also have a legal duty to 'have regard to the requirements of the Habitats Directive in the exercise of their functions.' As demonstrated by the case of Woolley vs. Cheshire East Borough Council and Millennium Estates Ltd (2009), this means that they must consider the 3 Habitats Directive tests (see above) when determining whether Planning Permission should be granted for developments likely to cause an offence under the Conservation Regulations. As a consequence, Planning Applications for such developments must demonstrate that the 3 tests will be passed.

2.0 Methodology

Desk Study

- 2.1 As part of the Preliminary Ecological Appraisal carried out by Keystone Ecology (Keystone Ecology, 2017), Sussex Biodiversity Record Centre was contacted for records of bats, bat roosts and non-statutory sites designated for bats within 2 kilometres of the proposed development site.
- 2.2 Web-resources (Natural England, 2016; Gov.uk 2016) were also searched for any European statutory sites designated for bats on site and within a 15 kilometre radius of the site boundary and any national statutory sites designated for bats on site and within a 10 kilometre radius of the site boundary.

Field Survey

Roost Inspection - Structures

- 2.3 All buildings on site were surveyed on 14th August 2017 by a bat licensed ecologist (Andrew Blincow, MSc, Natural England Licence Number: 2016-22321-CLS-CLS) who satisfies all necessary field survey competencies as set out by our governing body, the Chartered Institute for Ecology and Environmental Management (CIEEM). Building locations are shown on *Drawing Number: 172768/2/dwg1*.
- 2.4 The buildings were inspected externally and internally, where access was available, for bats and signs of bat activity (e.g. droppings, feeding remains, urine stains, and grease marks). Equipment used to aid the survey included high-powered torches and ladders.
- 2.5 With reference to current survey guidelines (Chapter 5 of Collins, 2016), notes were made on the following:
- Type and age of building;
 - Type of construction;
 - Presence of potential roost features (e.g. hanging tiles, raised tiles, roof voids);
 - Potential/actual bat entry/exit points;
 - Information or evidence of work having been undertaken that could affect use of the structure by bats; and
 - Amount and location of evidence of roosting bats (e.g. presence of live or dead bats, droppings, feeding remains, urine stains, grease marks).
- 2.6 Where feasible, given the evidence collected, any structures with evidence of bats have been evaluated to assess which of the following categories they fall into, if any (based on Collins, 2016):

- Transitional/Occasional 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;
- 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 throughout the breeding season as alternative roost sites in close proximity to maternity roosts;
- Mating roost (September-November) - established by males of some species to display/call to females to mate. May continue to be used over the winter;
- Hibernation roost (October-March) - where bats may be found individually or together during the winter. They have a constant temperature and humidity. They vary greatly in terms of the number of individuals and diversity of species using them;
- 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. Rarely found by night in the summer. Bats may regularly use a number of days roosts or the same site for several weeks;
- 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. Rarely present by day; and
- Swarming sites (August-November) - where large numbers of bats from several species gather, generally around caves and mines. Appear to be important mating sites.

2.7 In the absence of any evidence, structures have been assigned a rating of suitability from negligible to high potential for supporting bats (as set out in Table 4.1 of Collins (2016)). The rating is based primarily on the location of the structure in the wider landscape (proximity to suitable foraging habitats and/or commuting routes) and the number and type of features suitable for use by bats, with other factors considered including the age of the structure and the level of disturbance. Refer to *Appendix 1* for features of buildings and built structures and their location that are correlated with the likelihood of bats being present in summer⁴.

2.8 Create benefits for wildlife are explored alongside the hierarchy of aforementioned measures.

Nomenclature

2.9 The English names of flora and fauna species are given in the main text of this report. Scientific names are used only in the absence of English names. Vascular plants and

⁴ The features listed in *Appendix 1* may not be indicative of use of the site by bats in winter or spring.

Charophytes follow the nomenclature of The Botanical Society for the British Isles database (2007) with all other flora and fauna following the UK Species Inventory (Natural History Museum, 2016).

Limitations

- 2.10 The results of the survey and assessment work undertaken by Keystone Ecology are representative at the time of surveying.
- 2.11 Keystone Ecology staff and their sub-consultants will endeavour to identify the presence of protected species wherever possible on site, where this falls within the agreed scope of works.
- 2.12 Up to date standard methodologies will be used, which are accepted by Natural England and other statutory conservation bodies. No responsibility will be accepted where these methodologies fail to identify all species on site. Keystone Ecology cannot take responsibility where Government, national bodies or industry subsequently modify standards.
- 2.13 Keystone Ecology cannot accept responsibility for data collected from third parties.

3.0 Results and Assessment

Desk Study

- 3.1 There are no European statutory sites designated for bats within 15 kilometres, no national statutory sites designated for bats within 10 kilometres, and no non-statutory sites designated for bats within 2 kilometres of the proposed development site.
- 3.2 There are records of at least 1 bat species roosting within 2 kilometres of the site and records of at least 5 bat species otherwise occurring within 2 kilometres of the site. Details are provided below in *Table 1*.

Table 1: Bat Records within 2 Kilometres of the Site

Species	Roost records (No. of Records / Closest Minimum Distance from Proposed Development Site (m))	Other records (No. of Records / Closest Minimum Distance from Proposed Development Site (m))
Common Pipistrelle	3/1,261	5/1,261
Unidentified Bat Species	1/890	3/1,575
Daubenton's Bat	-	1/1,646
Long-eared Bat species	-	1/1,646
Myotis Bat species	-	1/2,000
Serotine Bat	-	2/1,280
Soprano Pipistrelle Bat	-	1/2,000

Roost Inspection - Buildings

- 3.3 *Table 2* provides a description of each building surveyed, along with details of any bat signs and potential roost features that were found and the resulting assessment of bat roost potential.

Table 2: Bat Roost Inspection Survey Results and Assessment

Building No.	Photo and Description,	Factors that Increase the Likelihood of Bats being Present (including PRFs)	Factors that Decrease the Likelihood of Bats being Present	Bat Signs	Roost Status/Potential
1	 A stone garage and workshop with pitched roof topped with asbestos roof tiles. The southern elevation is lined with corrugated metal panels, the remaining elevations comprise stone and mortar. The building is in a dilapidated condition. Internally the ground floor is utilised as a garage with the loft area above used for storage.	Numerous access points into the building and/or potential roosting features are present. Features include: • Cavities and small niches in masonry. • Gaps between bitumen felt lining and roof tiles above. • Gaps around corrugated paneling and ill fitted windows/doors. • Gaps under damaged/slipped tiles. Internally there is a loft area which is used for storage. This loft provides a large open flight space measuring approximately 12 metres by 8 metres with a floor to apex height of 2.5 meters which could be used by bats.	There are draughty/exposed internal conditions due to access points around the eaves and gable ends. Fluctuating internal conditions would deter continuous usage of the loft by bats. Small windows in the gable end create light internal conditions which could deter bats from roosting in the main loft area during the day. The garage below the loft is frequently used. High levels of human disturbance and noise/vibrations from compressor machinery and vehicles are a deterrent to bats. The accessible crevices in the masonry were inspected with a torch. These crevices extended through the wall and did not provide access into a cavity wall. The access points were also covered in cobwebs indicating they have not been used recently.	None present.	Moderate potential to support roosting bats during the summer. Due to the high levels of ongoing disturbance within the building it is unlikely the building could support hibernating bats.

4.0 Impacts

- 4.1 A new flood defence wall, approximately 20 metres in length is proposed along the south-west boundary of the site. The surveyed building is being retained and will continue to operate as a garage and workshop.
- 4.2 No direct impacts will occur to the building which has moderate bat roosting potential (summer only) and considered unlikely to support hibernating bats. In the event bats are present on site they are already habituated to high levels of frequent disturbance. A short term increase in noise/vibrations will not prevent bats from continuing to function on site or in the locality.

5.0 Recommendations and Requirements

Further Survey

- 5.1 Further surveys are not required on site for the following reasons:
- The building is subject to frequent disturbance impacts and any bats present will be habituated to fluctuating periods of acute noise and vibrations.
 - The proposals will be undertaken in the winter when bats are unlikely to be present.
 - No direct impacts to the building will occur.
 - The works will be completed in a short period of time.
- 5.2 Further survey may be required if the parameters detailed above alter.

Legal Compliance

- 5.3 No EPS licence is required for the building surveyed based on the proposals detailed in this report as they will not result in a significant impact to any bats that may be present on site.

Mitigation

Provision for Bats

- 5.4 Provision for bats across the site is not required provided the building remains unaffected by the flood defence wall proposals.

Timing of Works

- 5.5 The works are proposed during the winter when bats are unlikely to be present. Advice from an ecologist should be sought if the timing of works changes.

Care and Vigilance during Works

- 5.6 The contractor(s) should be advised to avoid any activity that could accidentally damage the building.

6.0 References

Botanical Society for the British Isles (2007). *BSBI 2007 List*. Available at:
<http://www.bsbi.org.uk/taxonomy.html> [Accessed on 16th August 2017].

Chartered Institute of Ecology and Environmental Management (2016). *Guidelines for Ecological Impact Assessment in the United Kingdom. Terrestrial, Freshwater and Coastal*. Available at:
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Gov.uk (2016). *Find protected areas of countryside*. Available at: <https://www.gov.uk/check-your-business-protected-area> [Accessed on 16th August 2017].

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Keystone Ecology (2017). *Preliminary Ecological Appraisal*. Ecological Ecology: Tetbury

Natural England (2016). *Natural England GIS Digital Boundary Database*. Available at:
http://www.gis.naturalengland.org.uk/pubs/gis/tech_ds.htm [Accessed on 16th August 2017].

Natural History Museum (2016). UK Species Inventory. Available at:
<http://www.nhm.ac.uk/research-curation/scientific-resources/biodiversity/uk-biodiversity/uk-species/index.html> [Accessed on 16th August 2017].

Sussex Biodiversity Partnership (2001) *Species action plan for Sussex*. Available at:
<http://www.biodiversitysussex.org/> [Accessed on 7th August 2017].

Web Addresses for Access to Full Legislation and Policy Text:

Conservation of Habitats and Species Regulations 2010 (as amended):
<http://www.legislation.gov.uk/ukxi/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:
<http://www.legislation.gov.uk/ukpga/1981/69>

Plans



Key

Site boundary

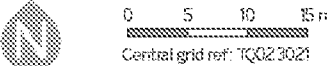
Building Bat Roost Potential (Collins, 2016)

Moderate



GH-D
River Arun, Littlehampton
Drawing Number: 172768/2/dwg1
Bat Roost Inspection Survey Results: Buildings

Revision	Date	Drawn	Approved
rev0	16/8/2017	RF	AB



No dimensions to be scaled from this drawing
All dimensions are to be checked on site
Measurements displayed are for indicative purposes only

Appendices

Appendix 1

Criteria for Assessment of Bat Roost Potential in Built Structures

The judgement and experience of the author and the information provided below has been used to assign a category for the potential likelihood of a bat roost occurring, with reference to available guidance (Hundt, 2012).

Factors Likely to Increase the Probability of Bat Roost Presence

- Dark roof spaces and limited external lighting around building.
- Warm lofts/boilers, and roof aspects heated by the sun warm lofts.
- Undisturbed roof spaces and buildings.
- Open, uncluttered loft void including king and queen timber supports (PA, NL, MY, RH).
- Niche features such as tenon and mortise joints (NL, MY, PP, BB, PA).
- Gaps between Bituminous underfelt/wooden boarding and roof covering (PP).
- Roof coverings with numerous access features, e.g. Rosemary tiles, clay 'pan' tiles, thatched roofs (PP, BB, MY).
- Ridge tiles with eroded mortar joints beneath (PP, BB, MY).
- Areas of hanging tiles.
- Soffit boxes with at least 25 millimetres access points (PP).
- Fascia and barge boards with at least 25 millimetres access points (PP).
- Cavities/niches within brick/masonry - e.g. eroded mortar joints (PP, PA).
- Large open access features or other means of 'fly-through' access (to loft or other undisturbed, dark area) - e.g. open stable doors, windows etc. (PA, RH, MY).
- Timber/wall junctions (e.g. wall plates, door frames, window frames) with at least 25 millimetres access point (PP, PA, MY).
- Boarded up windows (gap between glass and board) (PP).
- Cavity walls, including cavities within 'breeze' blocks and similar ceramic blocks and access via window frames (PP, MY).
- Ship-lap wooden boarding.
- Boarded up buildings with dark/damp interior rooms (PA, RH).
- Good cover for bats to emerge into but not obstructing egress/ingress points.
- Presence of good quality foraging/commuting habitat nearby including prominent linear features such as mature tree lines, rivers, and railways.
- Bat boxes.
- Presence of cellars and ice houses.

Factors Likely to Decrease the Probability of Bat Roost Presence

- High internal light levels (in loft void).
- Artificial lighting at /close to access features.
- Cluttered loft voids (especially gang nailed 'W' trussed roofs).
- Presence of non-porous roof liner membranes.
- Roof spaces recently subject to timber treatment or pest control chemicals.
- Concrete interlocking roof tiles.
- Sheet lined walls.
- Sheet lined roofs and steel frames.
- Presence of rats (in lofts).
- Draughty/exposed conditions in building interior.
- High levels of vibration & noise from industrial machinery.
- High levels of human disturbance.
- Isolation from potential foraging/commuting habitat.
- Presence of ultrasonic rodent deterrents.

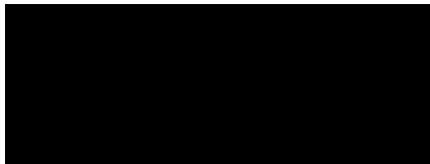
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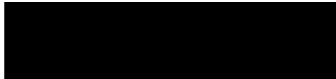
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