Bat Activity Survey Report

Site at 7 Mill Hill, Shoreham-by-Sea

December 2023

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04/12/2023

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Non-technical Summary

Phlorum was commissioned by Fresh Architects to carry out a single bat activity (emergence/re-entry) survey, which was carried out at 7 Mill Hill, Shoreham-by-sea, BN43 5TG, on the 9th August 2023 prior to development. The bat survey follows on from a Preliminary Ecological Appraisal (PEA) and concurrent preliminary roost assessment for bats and this report should be read in conjunction with the PEA report (Phlorum 2023).

Current proposed development plans involve the demolition of the existing building and the construction of a new building which includes a basement. The survey area extended over approximately 0.2 hectares (ha).

The main findings of the survey are as follows:

- Loose tiles on the west and south aspects of the roof providing potential points of ingress/egress.
- No bats were seen to emerge from any of the onsite building's features.
- Overall, there was a **low** level of bat activity at the site. A total of four bat species were recorded foraging and commuting at the site which included common pipistrelle (*Pipistrellus pipistrellus*), Nathusius' pipistrelle *(Pipistrellus nathusii),* Natterers bat (*Myotis nattereri)* and noctule (*Nyctalus noctula*). Common pipistrelles were most frequently observed commuting across the site.
- Therefore, it was determined likely that bats were not present within the on-site building at the time of the survey and therefore bats will not be a constraint to works. However there remains potential for bats to use the site later on in the year and therefore a precautionary approach to the start of works is recommended to minimise disturbance should any bats utilise the potential roosting feature in the interim before developments start.
- Providing a precautionary approach is followed, and no bats are found, then a European Protected Species Mitigation **will not be required**. A suitably experienced ecologist should oversee the start of the works and discuss the stages of the proposed works with the on-site contractors. The ecologist may then return to the site to oversee certain stages of the works as considered necessary.

Further information regarding mitigation and site enhancement is provided in the recommendations section of the report.

1. Introduction

Background

1.1 Phlorum Limited was commissioned by Fresh Architects to carry out a bat activity (emergence/re-entry) survey in relation to 7 Mill Hill, Shoreham-by-Sea (hereafter referred to as "the site") prior to development.

1.2 The bat survey follows on from a Preliminary Ecological Appraisal (PEA) and concurrent preliminary roost assessment for bats and this report should be read in conjunction with the previous PEA report (Phlorum 2023).

1.3 Current proposed development plans involve the demolition of the existing building and the construction of a new building which includes a basement. The survey area extended over approximately 0.2 hectares (ha).

1.4 During the initial preliminary roost assessment features were observed that could provide suitable access for roosting bats. These include missing tiles to the south and west roof aspects. It was therefore recommended that a single activity survey be undertaken to assess whether or not bats are using the onsite building.

1.5 This report provides an assessment of the status of bats within the site, providing information on their presence/likely absence and distribution. Potential impacts of the proposed development are identified and measures to mitigate the effects of the proposed development on bats are discussed in outline.

Site Description

1.6 The site is located at 7 Mill Hill, Shoreham-by-sea, BN43 5TG. The site is in a residential area, with a large green space adjacent to the western boundary, the river Adur SSSI 0.5km to the west, residential areas to the east and south of the site and the Shoreham-by-pass immediately to the north. In the wider surroundings are the town of Shoreham, the Adur estuary Shoreham beach, the English Channel to the south, and agricultural fields to the north and the Mill Hill and Benfield Hill LNRs to the north and northeast.

1.7 The site comprised buildings, hardstanding, modified grassland, introduced shrub, planted beds, hedge, hedge and trees, standalone trees and a compost pile.

1.8 The National Grid Reference for the centre of the site is TQ21250640. The survey area extended over approximately 0.2 hectares (ha).

2. Methodology

Data Search

2.1 Records for bats within a 2km radius of the site were obtained from the Local Records Centre (SxBRC 2023) as part of the Preliminary Ecological Appraisal.

Review of Bat Building Inspection (Preliminary Roost Assessment)

2.2 A bat building inspection (Preliminary Roost Assessment) was carried out as part of the Preliminary Ecological Appraisal (Phlorum 2023). A review of this document was carried out to guide the activity surveys and ensure appropriate coverage.

Personnel

2.3 The survey was led by Harry Webster, an ecological consultant with over 3 years' professional experience undertaking ecological surveys, including bats. Harry now holds a bat level 1 survey class licence (2023-11013-CL17-BAT).

Dusk Emergence Survey

2.4 An activity survey was carried out on the 9 August 2023. Four surveyors were used to assess the site for roosting, foraging and commuting activity. Echo Meter Touch pro 2 detectors were used for the surveys. Night vision aids (Sony FDR-AX53 4K camcorders and infrared LED lights) were used for surveys one and two, it is considered that this method would allow any roosts present to be identified and located with high accuracy (Bat Conservation Trust, 2023).

2.5 During the survey the lead surveyor was positioned to the north of the building, the second surveyor was positioned at the southeast, the third at the south and the fourth to the west of the building. Surveyors were positioned to ensure adequate coverage of the roof building's features.

2.6 The evening surveys commenced at least 15 minutes before sunset and lasted for at least two hours after sunset.

2.7 All surveys followed standard protocols and accepted standards (Mitchell-Jones and McLeish, 2004; Collins, 2016).

Roost Characterisation

2.8 Where a potential bat roosting feature or confirmed roost was identified, the surveyor assessed how these could be used by bats throughout the year, in accordance with Natural England (2015):

- day roost - where individual bats, or small groups of males, rest or shelter in the day, but rarely on summer nights;
- night roost - where bats rest or shelter at night, but rarely during the day;
- feeding roost - where bats rest at night between feeding sessions, but rarely during the day;
- hibernation roost - where bats are found during winter;
- transitional or occasional roost - where bats gather at a temporary site before and after hibernation;
- mating site - where males and females gather from late summer to early winter;
- maternity roost - where babies are born and raised until they're independent;
- satellite roost - where breeding females roost close to the main nursery colony in the breeding season; and
- swarming site - where bats gather in large numbers from late summer to autumn.

Constraints

Data Search Constraints

2.9 It is important to note that, even where data is held, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest; the area may be simply under-recorded.

Bat Survey Constraints

2.10 Bats are mobile animals which can move roost sites both within and between years. It is possible that surveys carried out in August may miss roosts occupied earlier in the year.

3. Results

Data Search

3.1 The data search returned records (post 2004) for at least X different species of bat within 2km of the site, including serotines (*Eptesicus serotinus*), noctule (*Nyctalus noctule*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), Daubentons Myotis (*Myotis daubentonii*), Whiskered bats *(Myotis mystacinus)* long-eared bat species (*Plectous sp.)* and brown long-eared bats (*Plecotus auratus*) The closest records for bats were located approximately 1km west of the site in 2021. There have been bat licenses granted in the area, the closest was approximately 1.5km to the southeast.

Review of Bat Building Inspection (Preliminary Roost Assessment)

3.2 A bat building inspection (Preliminary Roost Assessment) was carried out as part of the Preliminary Ecological Appraisal (Phlorum 2023). This discovered the following potential roost features:

3.3 Potential ingress/egress points including missing tiles to the south and west elevations of the building roof, allowing potential access for roosting bats.

Survey Overview

3.4 The survey concentrated on the potential entry points across the south and west roof aspects.

3.5 No bats were seen to emerge from the building during the survey.

3.6 Overall, there was a low level of bat activity recorded at the site. A total of four bat species were recorded commuting and foraging across the site including common pipistrelle (*Pipistrellus pipistrellus*), Nathusius' pipistrelle *(Pipistrellus nathusii),* Natterers bat (*Myotis nattereri)* and noctule (*Nyctalus noctula*). Common pipistrelles were most frequently observed commuting across the site.

3.7 The area surveyed is illustrated in the Map in Appendix A.

Dusk Emergence Survey

9th August 2023

3.8 Sunset was at 20:18hrs and the temperature at the start of the survey was 20°C, falling to 18°C at the end of the survey. The weather conditions were warm dry and mild, with a light breeze.

3.9 A total of four bat species were recorded during the survey. These were common pipistrelle (*Pipistrellus pipistrellus*), Nathusius' pipistrelle *(Pipistrellus nathusii),* Natterers bat (*Myotis nattereri)* and noctule (*Nyctalus noctula*).

3.10 No bats were seen to emerge from any features for the duration of the survey.

3.11 The first bat pass was recorded at 21:06hrs which was a Nathusius pipistrelle which was heard and seen commuting across the site. Based on the time of the first passes, it can be assumed that [roosts are close by for these species. Common pipistrelle were the most frequently recorded species observed commuting across the site. The highest level of activity was recorded between 21:13 to 21:55. The last pass was recorded at 22:08hrs which was a common pipistrelle which was heard but not seen.

3.12 The full survey data can be found in Appendix C.

4. Discussion and Recommendations

Discussion

4.1 Overall, there was a **low** level of bat activity recorded at the site. A total of four bat species were recorded foraging and commuting at the site. No emergences were recorded.

4.2 Based on the findings of this survey a European Protected Species Mitigation (EPSM) licence **will not be required**.

4.3 A precautionary approach to the removal of any potential bat roost features is recommended. A suitably experienced ecologist should oversee the start of the works and discuss the stages of the proposed works with the on-site contractors. The ecologist may then return to the site to oversee certain stages of the works as considered necessary. If during the precautionary works a bat is found, then the ecologist needs to be informed and all work stopped until it has been assessed. If a roost is confirmed, then a bat EPSM licence may be required before the work commences.

Recommendations

Construction Phase

4.4 A precautionary approach to works should be adopted in order to safeguard the potential bat roosts within the onsite buildings.

4.5 It is recommended that any works to demolish/renovate the onsite buildings commence outside of the hibernation period, when bats are considered least vulnerable. The hibernation period is taken to run between mid to late November and mid-March, weather dependant.

4.6 A suitably experienced ecologist should oversee the start of the building works. On arrival to the site the ecologist will re-inspect the building to look for evidence of roosting bats. An on-site assessment can then be made by the ecologist regarding the status of any roosts present.

4.7 The ecologist will then discuss the different stages of the proposed works with the on-site contractors. The ecologist may need to return to the site to oversee certain stages of the works.

4.8 If considered necessary following consultation with the on-site contractors, the ecologist will guide the start of the works.

4.9 The ecologist should be kept informed throughout the construction phase and an ecological watching brief may be required to oversee certain phases of the re-development for example, the ecologist may need to oversee any ground excavation works to ensure noise levels will not impact the off-site roost etc.

4.1 If bats are subsequently found to be present during the remainder of the work, activities should cease immediately and advice sought from a suitably experienced ecologist.

Habitat Enhancement/Retention

4.2 Any trees within the immediate This linear feature provides habitat connectivity to the wider landscape.

4.3 Additional roosting opportunities could be incorporated into the final design to enhance the site for roosting bats post works. This could include the installation of at least two bat boxes such as the Schwegler 1FF bat box located on surrounding mature trees within the site. These should be orientated with a south east or south west aspect and located at least 3m from ground level.

Bats and Lighting

4.4 Different species of bat have been found to react differently to night-time lighting however research has found that generally, all species of bats are sensitive to artificial lighting and that excessive lighting can delay bats from emerging, thus shortening the time available for foraging, as well as causing individuals to move away from suitable foraging grounds or roost sites, to alternative dark areas (Jones, 2000). Bats can also become isolated from their foraging grounds if the linear features they use for commuting are suddenly illuminated, creating a light barrier (Fure, 2006).

4.5 The current site is not well lit at night and therefore the development should serve to maintain the site's value for foraging bats and to minimise indirect impacts from lighting associated with the new building. This can be achieved by following accepted best practice (Institute of Ecology and Environmental Management 2006, Institute of Lighting Professionals 2018, Bat Conservation Trust, 2014):

- The level of any artificial lighting including flood lighting should be kept to a minimum, particularly around the site boundaries;
- LED lights are a preferred option to low pressure sodium lights or high pressure sodium or mercury lamps. LED lights do not emit UV radiation, towards which some insects are attracted, drawing them away from bat foraging areas in the surrounding landscape;
- all lights should be directed at a low angle with minimal light spillage wherever possible;
- ideally the site boundaries should be kept dark, preferably at bat emergence (0-1 hour after sunset) and during peak bat activity periods (e.g. 1.5 hours after sunset and 1.5 hours before sunrise);
- Artificial lighting should not directly illuminate any potential bat commuting areas such as boundary features. Similarly, any newly planted linear features or buffer areas around the site boundary should not be directly lit; and

- If security lights are required, then they will be set on a Passive Infrared (PIR) sensor and timer so that the light is only emitted for the short time period required.

5. Conclusions

Conclusions

5.1 The site is located at 7 Mill Hill, Shoreham-by-sea. The onsite habitats together with scattered fragmented woodland parcels, hedgerows and the river Adur provide potential roosting, foraging and commuting opportunities for bats in the wider landscape.

5.2 The site comprises buildings, hardstanding, modified grassland, introduced shrub, planted beds, hedge, hedge and trees, standalone trees and a compost pile. It is understood that current proposals involve the demolition of the existing building and the construction of a new building which includes a basement. The survey area extended over approximately 0.2 hectares (ha).

5.3 During the initial preliminary roost assessment undertaken on 18th July 2023 (Phlorum 2023) the onsite building was considered to offer **low** potential for roosting bats. The potential roosting features observed included missing tiles on the south and western aspects of the building roof.

5.4 Overall, there was a **low** level of bat activity at the site. A total of four bat species were recorded foraging and commuting at the site which included common pipistrelle (*Pipistrellus pipistrellus*), Nathusius' pipistrelle *(Pipistrellus nathusii),* Natterers bat (*Myotis nattereri)* and noctule (*Nyctalus noctula*). Common pipistrelles were most frequently observed commuting across the site.

5.5 No bats were seen to emerge from the onsite building during the survey.

5.6 There remains potential for bats to roost in the building and therefore a precautionary approach to the start of works is recommended to minimise disturbance to the potential roost. Providing a precautionary approach is followed, a European Protected Species Mitigation licence in **will not be required.**

6. References

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Appendix A
Bat Survey Map

Figure 1: Site at 7 Mill Hill Bat Survey Map

Drawn by: AH
On the: 13/11/2023
Not to Scale
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Appendix B
Legislation

Legislation

This section contains information pertaining to the legislation and planning policy applicable in Britain. This information is not applicable to Northern Ireland, the Republic of Ireland the Isle of Man or the Channel Islands. Information contained in the following appendix is provided for guidance only.

Species

The objective of the EC Habitats Directive1 is to conserve plants and animals which are considered to be rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and also implements the obligations set out for species protection from the Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Various amendments have been made since the Wildlife & Countryside Act came into force in 1981. Further details pertaining to alterations of the Act can be found on the following website: www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CRoW) Act (2000) and Nature Conservation (Scotland) Act 2004.

There are a number of other legislative Acts affording protection to species and habitats. These include:

- Countryside and Rights of Way (CRoW) Act 2000;
- Deer Act 1991;
- Natural Environment & Rural Communities (NERC) Act 2006;
- Protection of Badgers Act 1992; and
- Wild Mammals (Protection) Act 1996.

Bats

Bats are protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). This act protects individuals from:

- intentional or reckless disturbance (at any level);
- intentional or reckless obstruction of access to any place of shelter or protection; and

[1] Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora.

- selling, offering or exposing for sale, possession or transporting for purpose of sale

In addition, 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 (all bats);
- deliberate disturbance of bat species as to impair their ability:

  (i) to survive, breed, or reproduce, or to rear or nurture young; and

  (ii) to hibernate or migrate.
- deliberate disturbance of bat species as to affect significantly the local distribution or abundance of the species;
- damage or destruction of a breeding site or resting place; and
- keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

A European Protected Species Mitigation (EPSM) Licence issued by Natural England will be required for works liable to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake activities listed above. A licence is required to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and monitored.

Appendix C
Bat Survey Data

Bat Survey Data

Dusk Emergence Survey

09/08/2023

Number of Surveyors	Site and Job no:	Start Time	Sunset Time	Finish Time	Temperature (°C) at start	Temperature (°C) at end	Cloud Cover (Oktas 1-8)	Windspeed (Beauforts 1-12)	Rain
4	12059 7 Mill Hill	20:18	20:23	22:33	20	18	0	0-1	0

Surveyor 1: LD				Bat Detector Used: Echometer Touch Pro (light blue) & Infra-Red Camera (red)
Time	Location	Activity observed	Number of passes	Comments/Notes
21:10	Facing north roof aspects	Commuting	1	Common pipistrelle- Heard not seen
21:21	-	-	1	Common pipistrelle- Heard not seen
21:24	-	-	1	Noctule- Heard not seen
21:37	-	-	1	Common pipistrelle & Noctule- Heard not seen
21:46	-	-	1	Common pipistrelle- Heard not seen
21:54	-	-	1	Common pipistrelle- Heard not seen
22:05	-	-	1	Common pipistrelle- Heard not seen. Continuous activity ~15mins

Surveyor 2: IAT				Bat Detector Used: Echometer Touch Pro (black)
Time	**Location**	**Activity observed**	**Number of passes**	**Comments/Notes**
	Facing east roof aspects			No bats recorded

Surveyor 3: JB				Bat Detector Used: Echometer Touch Pro (red)
Time	**Location**	**Activity observed**	**Number of passes**	**Comments/Notes**
21:11	Facing west roof aspects	Commuting	1	Common pipistrelle- Seen and heard
21:14	-	-	4	Common pipistrelle- Heard not seen
21:31	-	-	7	Natterers bat- Heard not seen

Surveyor 1: SR				Bat Detector Used: Echometer Touch Pro (pink)
Time	**Location**	**Activity observed**	**Number of passes**	**Comments/Notes**
21:06	Facing south roof aspects	Commuting	1	Nathusius pipistrelle- Seen and heard
21:13	-	Commuting	1	Common pipistrelle- Seen and heard
21:15	-	Commuting	1	Common pipistrelle- Seen and heard
21:21	-	Foraging	2	Common pipistrelle- Seen and heard

21:23	-	-	1	Common pipistrelle- Heard not seen
21:55	-	-	1	Common pipistrelle- Heard not seen
21:57	-	-	1	Noctule- Heard not seen
22:01	-	-	1	Noctule- Heard not seen
22:08	-	-	1	Common pipistrelle- Heard not seen

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