



BiOME
CONSULTING

www.BiOMEconsulting.com

Garage at The Pines
Frostenden Corner
Suffolk

Bat Survey Report

Mr & Mrs Catterall

VERSION 2
Final

26 June 2023

BiOME Consulting Limited, Horseshoe Barn, Halvergate, Norfolk, NR13 3AJ
info@biomeconsulting.com

COPYRIGHT: The concepts and information contained in this document are the property of BiOME Consulting Limited. Use or copying of this document in whole or in part without the written permission of BiOME Consulting Limited constitutes an infringement of copyright.

LIMITATION: This report has been prepared on behalf of and for the exclusive use of BiOME Consulting Limited's Client, and is subject to and issued in connection with the provisions of the agreement between BiOME Consulting Limited and its Client. BiOME Consulting Limited accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report by any third party.



Document History and Status

Revision	Date Issued	Reviewed By	Approved By	Date Approved	Revision Type
1	26/06/2023				Draft for Technical Review
2	26/06/2023	MO	MO	26/06/2023	Final

Author	Richard Moores MCIEEM
Reviewer	Martyn Owen MCIEEM
Project Manager	Richard Moores MCIEEM
Client	Mr & Mrs Catterall
Name of Project	Garage at The Pines, Frostenden Corner, Suffolk
Name of Document	Bat Survey Report
Document Version	2
Document Status	Final

Contents

1.	Introduction	1
1.1.	Existing Ecological Information	2
1.2.	Site Description and Development Proposals	2
2.	Legislative Context	3
2.1.	Bats	3
2.2.	Nesting Birds	3
3.	Methodologies	5
3.1.	Desk Study	5
3.2.	Field Survey	5
3.2.1.	Suitably Qualified Ecologist	5
3.2.2.	Preliminary Roost Assessment	5
3.3.	Emergence/Re-entry Surveys	7
3.4.	Limitations	8
4.	Results	9
4.1.	Desk Study	9
4.1.1.	Designated Sites	9
4.1.2.	Protected Species	10
4.2.	Site Survey	10
4.2.1.	Bats	10
4.3.	Nocturnal Emergence Surveys	11
4.4.	Other Species	14
5.	Conclusions and Required Actions	15
5.1.	Bats - Roosts	15
5.1.1.	Summary	15
5.1.2.	Natural England Licencing	15
5.1.3.	Timing	16
5.1.4.	Supervision of Works	16
5.1.5.	Compensation	16
5.2.	Bats and Lighting	16
5.3.	Nesting Birds	18
5.4.	Report/Survey Validity	19

1. Introduction

BiOME Consulting Ltd was commissioned by Mr & Mrs Catterall in January 2023 to undertake a Preliminary Roost Assessment (PRA) and subsequent nocturnal emergence bat surveys in relation to the proposed conversion of a garage at The Pines, Frostenden Corner, Suffolk (*'the site'*) (**Photograph 1**).

The site (National Grid Reference TM 486803) comprised a single garage. Due to the nature of the redevelopment project, this appraisal focused on assessing the potential presence/likely absence of roosting bats and/or nesting birds in areas to be impacted.

Photograph 1. Garage at The Pines, Frostenden Corner – south and east aspects



1.1. Existing Ecological Information

The garage (in addition to two other buildings on site; the dwelling and a lean-to type building, since collapsed) was subject to bat survey work in 2018¹, including three nocturnal dusk emergence/dawn return to roost surveys:

"25 September 2028: A single bat (not recorded echolocating) emerged from the western gable end of Building 2 |(the garage) at 19:09. This emerged from a gap between bricks near to the apex and flew directly south towards the woodland. The bat emerging from Building 2 (the garage) is considered likely to be a pipistrelle (common or soprano) based on the emergence time (25 minutes after sunset). "

No roosting bats were recorded using the building on the other nocturnal surveys on 29 August and 26 September 2018.

1.2. Site Description and Development Proposals

The garage is a brick built, single-storey building with a pantile roof. The wider area comprised mixed agricultural land (predominantly arable) and occasional dwellings to the north and west with marshland to the south and east.

It is proposed to convert the garage to a dwelling.

¹ Abrehart Ecology (2018). *Bat Survey Report for The Pines, Frostenden Corner, Suffolk*

2. Legislative Context

2.1. Bats

All British bat species are fully protected at national and European levels, through their inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended)² and in Schedule 2 of the Conservation of Habitat and Species Regulations 2010³. Under this legislation, it is an offence to deliberately kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or resting place used for shelter or protection by a bat or disturb an animal while it is occupying a structure or place which it uses for that purpose.

Four species of bat, Greater Horseshoe Bat *Rhinolophus ferrumequinum*, Lesser Horseshoe Bat *R. hipposideros*, Bechstein's Bat *Myotis bechsteinii* and Western Barbastelle *Barbastella barbastellus*, are included on Annex II of the Habitats Directive⁴, which requires the designation of Special Areas of Conservation to ensure the maintenance of favourable conservation status (and these are therefore generally considered as perhaps the most important UK species). Seven bat species are listed as Section 41⁵ priority species; Barbastelle, Bechstein's Bat, Noctule *Nyctalus noctula*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Brown Long-eared Bat *Plecotus auritus*, Greater Horseshoe Bat and Lesser Horseshoe Bat.

2.2. Nesting Birds

All birds, their nests and eggs are protected by law and it is thus an offence, with certain exceptions, to:

- Intentionally kill, injure or take any wild bird.
- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built.

2 The Wildlife and Countryside Act 1981 (as amended)

3 The Conservation of Habitats and Species Regulations 2010

4 Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

5 Of the Natural Environment and Rural Communities Act 2006

- Intentionally take or destroy the egg of any wild bird.
- Have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act or the Protection of Birds Act 1954.
- Have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act or the Protection of Birds Act 1954.
- Use traps or similar items to kill, injure or take wild birds.
- Have in one's possession or control any bird of a species occurring on Schedule 4 of the Act unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations (see Schedules).
- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Penalties that can be imposed for criminal offences in respect of a single bird, nest or egg contrary to the Wildlife and Countryside Act 1981 (as amended) is an unlimited fine, up to six months imprisonment or both.

3. Methodologies

3.1. Desk Study

Details in relation to internationally designated sites and nationally designated sites with 2km were obtained from www.magic.gov.uk. A search was also completed using the same database for the following, within 2km of the site:

- Granted European Protected Species (EPS) (bats) development licences.

Due to the nature of the proposals, the extent of potential impacts and the results of the site survey, the purchase of species records from the local biological records centre was considered unnecessary.

3.2. Field Survey

3.2.1. Suitably Qualified Ecologist

Fieldwork and assessment were completed by Richard Moores MCIEEM. Richard holds survey licenses in relation to bats (NE bat licence no. 2015-12259-CLS-CLS) and a variety of Schedule 1 birds (including Barn Owl *Tyto alba*). Assistance with the nocturnal surveys was provided by Will Soar BSc, Sarah Morrison MA and William Moores, all of whom are experienced nocturnal bat surveyors.

3.2.2. Update Preliminary Roost Assessment

An update Preliminary Roost Assessment (PRA) survey was completed on 2 May 2023, in line with appropriate survey guidance⁶.

The survey involved a systematic search of the exterior of the building to identify potential or actual bat access points and roosting sites, and to locate any evidence of bats such as live or dead specimens, bat droppings, urine splashes, fur-oil staining and/or squeaking noises. It should be noted that sometimes bats leave no visible sign of their presence on the outside of a building (and even when they do wet weather can wash away evidence).

⁶ Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn.). The Bat Conservation Trust, London

The external inspection also included the examination of the ground, particularly beneath any potential bat access points, for example any windowsills, window panes, walls, hanging tiles, weatherboarding, eaves, soffit boxes, fascias, lead flashing, gaps under felt, and under tiles/slates.

A systematic search of the interior of the building was completed, searching for actual/potential bat access points, roosting sites and to locate any evidence of bats (e.g. live/dead specimens, droppings, urine splashes, fur-oil staining, feeding remains (such as moth wings), squeaking noises, bat-fly *Nycteribiidae* or odour). Again, it should be noted that occasionally bats leave no visible sign of their presence in a building’s interior, particularly when there are hidden cracks, crevices and/or voids.

The inspection of buildings and built structures for evidence of bats⁵, which can be conducted at all times of year, was facilitated by the use of ladders, a high-powered torch, endoscope and small dental mirrors to inspect accessible crevices considered likely to support bats. Weather conditions on the day of the survey were appropriate for undertaking ecological fieldwork (sunny and dry).

The potential suitability of the building for roosting bats was assessed in line with relevant guidelines⁵ and allocated to one of the categories detailed within **Table 1**.

Table 1. Guidelines for assessing the potential suitability of proposed development sites for bats

Suitability	Description of Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure/tree with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).

Suitability	Description of Roosting Habitats
Moderate	A structure/tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure/tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Confirmed Roost	Definitive evidence of roosting bats, i.e. live animals or accumulation of droppings associated with a PRF.

3.3. Emergence/Re-entry Surveys

Three update emergence/re-entry bat surveys of the building were completed in line with good practice guidance⁵ to further assess the presence/likely absence of roosting bats in areas to be impacted.

To ensure coverage of all potential bat access points/roost features, surveys were completed by two surveyors (located on opposite corners (southwest and northeast) of the building). Surveyors were equipped with electronic bat detectors (EM Touch Pro 2/Batlogger M) and sound files were analysed with appropriate bat analysis software (Kaleidoscope) once the survey was completed, if necessary. A single infra-red camera (Canon XA60) and additional infrared lighting (Nightfox XB5 IR and flood lamp) was also used, with the camera positioned at the same location as the surveyor located on the southwest side. Following the survey, recorded footage was analysed.

The nocturnal bat surveys were undertaken in weather conditions considered appropriate for surveys of this kind (Table 2).

Table 2. Nocturnal bat activity survey information

Date	Sunset	Surveyors	Time		Cloud	Wind (Beaufort/ Direction)	Min. Temp (°C)	Precip.
			Start	Finish				
02/05/2023	20.21	RM, WM	20.00	21.51	1/8	Still	10	Nil
26/05/2023	20.58	WS, SM	20.43	22.32	1-3/8	E 2	11	Nil
22/06/2023	21.20	WS, SM	21.05	22.50	0/8	NE 1	15	Nil

3.4. Limitations

The findings presented in this study represent those at the time of survey and reporting, and data collected from available sources. Ecological surveys are limited by factors which affect the presence of plants and animals, such as the time of year, migration patterns and behaviour.

4. Results

The results of the desk study (Section 4.1) and the site surveys (Section 4.2) are presented below.

4.1. Desk Study

4.1.1. Designated Sites

There is one internationally designated site and one nationally designated site within the 2km search area. Details are provided in **Table 3**.

Table 3. Statutorily designated within the relevant search areas

Site	Approx. distance from site boundary	Qualifying Features
Benacre to Easton Bavents Special Protection Area (SPA)	0.13km/SE	<p>ARTICLE 4.1 QUALIFICATION (79/409/EEC) During the breeding season the area regularly supports:</p> <ul style="list-style-type: none"> • Great Bittern <i>Botaurus stellaris</i> (Europe - breeding) 5% of the GB breeding population 5 year mean, 1992-1996 • Marsh Harrier <i>Circus aeruginosus</i> 5.1% of the GB breeding population 5 year mean, 1993-1997 • Little Tern <i>Sterna albifrons</i> (Eastern Atlantic - breeding) 0.9% of the GB breeding population 5 year mean, 1992-1996
Pakefield to Easton Bavents Site of Special Scientific Interest (SSSI)	0.08km/SW	<p>Pakefield to Easton Bavents is nationally important for the geological exposures of the Lower Pleistocene Norwich Crag Formations and associated Pleistocene vertebrate assemblages, and the coastal geomorphology of Benacre Ness. The site is also nationally important for its vegetated shingle features, saline lagoons, flood-plain fens, an assemblage of nationally rare and nationally scarce vascular plants, scarce breeding birds, four breeding bird assemblages in four different habitats and wintering Great Bitterns.</p>

Considering the nature of the proposals, and assuming environmental best practice during redevelopment, no impacts in relation to designated sites are anticipated and no further works are required. Designated sites are not considered further within this report.

4.1.2. Protected Species

The desk study did not identify any granted EPS development licences in relation to bats within the search area.

4.2. Site Survey

4.2.1. Bats

The building was constructed of red-brick with a pantile roof with 1F felt lining on a wooden frame (**Photograph 2**).

Photograph 2. Interior



A small number of mixed-age, scattered, unidentified bat droppings were recorded in the barns interior.

PRFs were numerous, including the ridge, holes in brickwork, lifting roof tiles damaged beams and gaps in window frames etc.

On the basis of the 2018 results, the building is a confirmed roost (**Table 1**) and a minimum of two nocturnal surveys were recommended (three were ultimately completed given findings during the second survey).

4.3. Nocturnal Emergence Surveys

2 May 2023

No bats were recorded roosting during the survey.

All activity was to the east and northeast of the building, with Common Pipistrelles recorded at 20.39 and 20.47, Soprano Pipistrelle at 20.54, Noctule at 20.29, and Serotine on three occasions between 20.56 and 21.16.

No other bats were recorded.

26 May 2023

A single Barbastelle emerged from the main door on the south side of the garage at 21.32. it flew around the yard briefly before re-entering the garage and roosted at west end of garage, still present at end of the survey (**Photograph 3**).

Photograph 3. Barbastelle roosting in garage on 26 May 2023



Two Soprano Pipistrelles emerged from day roosts during the survey (**Photograph 4**):

- 1x from a gap in brickwork on the eastern elevation at 21.07 (red circle, **Photograph 4**) before what was considered likely to be the same individual bat returned to roost in the same area at 22.20 (yellow circle, **Photograph 4**).
- 1x from beneath a roof tile (bottom row) at the eastern gable end at 21.21 (green arrow, **Photograph 4**)

Photograph 4. Emergence locations of two Soprano Pipistrelles on 26 May 2023



Bat foraging activity in the area comprised several passes each of Noctule, Serotine (up to two individuals), Soprano Pipistrelle and Common Pipistrelle. A single Brown Long-eared Bat was recorded (but not seen) at 22.05 with 1-2 individuals recorded to the southwest of the garage 22.14.

22 June 2023

A single Natterer's Bat was recorded flying in the garage at 22.22 before alighting at the west gable before exiting the garage at 22.26.

A single Soprano Pipistrelle emerged from its day roost from beneath a roof tile (bottom row) at the eastern gable end at 21.33 (green arrow, **Photograph 4**).

Bat foraging activity in the area comprised several passes each of Noctule, Serotine, Soprano Pipistrelle, Brown Long-eared Bat and Common Pipistrelle (up to two individuals).

4.4. Other Species

No nesting birds were recorded but the barn is considered to have the potential to support common species of nesting bird. No potential for Barn Owl *Tyto alba* was identified.

No other protected species issues were identified.

5. Conclusions and Required Actions

5.1. Bats - Roosts

5.1.1. Summary

A suite of bat surveys completed in line with best practice guidance concluded that the garage at The Pines is used by the following roosting bats (**Table 4**).

Table 4. Garage at The Pines – Bat Roost Details

Species	Roost Details	Conservation Significance
Natterer’s Bat	Single bat day/night-roosting inside building (during one emergence survey)	Local
Barbastelle	Single bat night day and night roosting (during one emergence survey)	Local
Soprano Pipistrelle	Two bats day-roosting (during two emergence surveys)	Local

It is considered that the results of the completed survey work have provided an accurate reflection of the status of roosting bats within the barn.

Any works that could destroy/modify a bat roost/access point or disturb⁷ roosting bat/s will require a Natural England licence to enable the works to be completed legally.

5.1.2. Natural England Licencing

As the barn supports a Barbastelle roost, the site cannot be registered under the Bat Mitigation Class Licence (BMCL) scheme and a full licence⁸ application will need to be submitted. Following submission of appropriate forms, the application takes up to 30 working days to be assessed by Natural England.

⁷ Disturbance of animals in this context includes in particular any disturbance which is likely—(a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young; or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or (b) to affect significantly the local distribution or abundance of the species to which they belong.

⁸ <https://www.gov.uk/government/publications/bats-apply-for-a-mitigation-licence>

No works that may disturb roosting bats or prevent access to a potential bat roost should be completed until a licence is in place.

5.1.3. Timing

All permissions are required to have been obtained before the licence can be obtained.

It is recommended that works are completed outside of the hibernation period.

5.1.4. Supervision of Works

Prior to works commencing, the ecologist would provide a 'toolbox talk' to those contractors on site in which details of e.g. best working practices and what to do in the event of discovering a bat would be discussed.

Once the licence is in place, during supervised works to the areas of the roosts the ecologist would capture any bats that do not fly away and move them to a temporary bat box (erected on a nearby tree/structure prior to works commencing).

These works (when capture/handling and exclusion of bats is possible) should ideally take place in conditions suitable for bats to be active (spring-autumn inclusive).

5.1.5. Compensation

It is recommended that two bat boxes (Ibstock type C or similar) are built in to the re-developed building at each gable end apex. In addition, two raised ridge tiles are to be installed that will allow access for bats into the ridge. Further, three bat boxes (Vincent Pro bat boxes or similar) are to be erected on trees within the land-holding.

5.2. Bats and Lighting

The site currently supports relatively low numbers of foraging bats although a moderate level of diversity and as such, it will be important to take this into account with regards to future site lighting proposals.

Artificial lighting can result in impacts to bats via a variety of mechanisms⁹. Many night flying species of insect are attracted to light, especially those lamps that emit an ultra-violet component, and particularly if it is a single light source in a dark area. Studies have shown that Noctule, Leisler's *N. leisleri* Serotine and pipistrelle *Pipistrellus* spp. bats swarm around white mercury street lights (this would also apply to metal halide) feeding on the insects attracted to the light. Such behaviour is not true for all bat species, notably the slower flying broad-winged species such as long-eared bats *Plectotus* spp, *Myotis* species and Barbastelle. In addition, it is also thought that insects are attracted to lit areas from further afield. This is thought to result in adjacent habitats supporting reduced numbers of insects. This is a further impact on the ability of the light-avoiding bats to be able to feed. It is noticeable that most of Britain's rarest bats are among those species listed as avoiding light. Clearly, effective mitigation where there is potential for impacts on bats has importance in the conservation of these species.

Artificial lighting is thought to increase the chances of bats being preyed upon. Many avian predators will hunt bats which is one reason why bats avoid flying in the day. Observations have been made of a diurnal raptor, Kestrel *Falco tinnunculus*, hunting at night under the artificial light along motorways.

Lighting can be particularly harmful if used along river corridors, near woodland edges and near hedgerows used by bats. Artificial lighting disrupts the normal 24-hour pattern of light and dark which is likely to affect the natural behaviour of bats. Bright light may reduce social flight activity and cause bats to move away from the lit area. Studies have shown that continuous lighting along linear features (i.e. roads/paths) creates barriers which some bat species cannot cross. For example, Daubenton's Bats move their flight paths to avoid streetlamps.

The lighting scheme for the development should be sympathetic to bats, this should include:

- the use of low-pressure sodium lamps or high-pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics.

⁹ Bat Conservation Trust (2018). *Guidance Note 08/18; Bats and Artificial Lighting in the UK.*

- Lighting should be directed to where it is needed and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. Planting can also be used as a barrier or manmade features that are required within the build can be positioned so as to form a barrier.
- The height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill. For pedestrian lighting this can take the form of low-level lighting that is as directional as possible and below 3 lux at ground level. The acceptable level of lighting may vary dependent upon the surroundings and on the species of bat affected.
- The light should be as low as guidelines permit. If lighting is not needed, don't light.
- The times during which any lighting is on should be limited to provide some dark periods.
- If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'.
- The light should be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. This lit area must avoid being directed at, or close to, any roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit. Avoid illuminating at a wider angle as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.

5.3. Nesting Birds

The barn is considered to have the potential to support common species of nesting bird.

The active nests of wild bird species (with certain exceptions) are legally protected from deliberate disturbance or destruction. If re-development works are proposed for the bird nesting season (March-August inclusive), it will be necessary to appoint SQE to complete a check for active birds' nests. Should any active nests

be found then it would be necessary to delay works until the nesting attempt has reached a natural conclusion. If works are planned for outside of the bird nesting period, then no such check is necessary.

5.4. Report/Survey Validity

The findings of this report are considered valid until 1 May 2024¹⁰. If the project is delayed beyond this date, updated bat survey work will be required to ensure the status of roosting bats within the site remains unchanged.

¹⁰ CIEEM (2019). *Advice Note on The Lifespan of Ecological Reports and Surveys* [online] available at: <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>