



**29 Fernbrook Road, Caversham,
Reading RG4 7HG**

Protected Species Survey Report

April 2024

on behalf of Mr A. Dine

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1 Introduction

1.1 Site Description

29 Fernbrook Road, referred to as the 'site' in this report, is a detached dwelling located to the east end of Fernbrook Road within the Reading suburb of Caversham RG4 7HG. The approximate Ordnance Survey grid reference for the site is SU 7018 7616

The site comprises the dwelling of 29 Fernbrook Road and its garden. The house is of brick construction, with a main, two-storey section with a pitched and hipped roof of clay tiles. To the south side is a sloping-roofed single-storey section with clay tiles, and there is a single-storey garage with flat roof of corrugated sheet asbestos and plastic. To the north side, and extending into the garden to the east, is a single-storey, flat-roofed section, attached brick shed (with a flat roof) and attached garden room. The rear garden comprises a patio, lawns, shrubs and trees.

The site is located within a suburban area of Caversham and is surrounded by residential development in the form of dwellings, gardens and roads. Habitats within the immediate local area are limited to private gardens.

1.2 Proposed Works

There is a proposal for a significant, two-storey extension to the east and north sides of the dwelling, which will also involve alteration and works to the existing pitched roof. The single-storey section with a sloping roof of clay tiles will be retained, but all other single-storey sections will be demolished.

1.3 Aims of Study

The aims of this study are to survey the building (29 Fernbrook Road, Caversham) for bats and/or evidence of bats, and other protected species including nesting birds, such as the house sparrow *Passer domesticus*. The study assesses the overall potential of the building to support roosting bats, and other protected species, and discusses the likely impact of the proposed works on bats, other protected species and their habitats.

The report makes recommendations for appropriate mitigation, compensation and enhancement measure and the potential impacts are assessed in accordance with the legal protection afforded to bats under The Conservation of Habitats & Species Regulations 2017. The need for a European Protected Species (Bat) Licence is also discussed in light of the impact assessment.

The report also discusses the potential for habitat loss under the footprint of the proposed extension and the impact that this may have on the ecology of the site, habitats of significant ecological value and protected or notable species.

1.4 Bat Ecology

Bats are the only mammals to have developed the ability of true flight. At present, over 1,100 species of bat are recognised worldwide, making bats the second largest mammal group after rodents. As well as flight, bats have evolved a system of navigation and orientation using echolocation which has allowed many species to become nocturnal. There are 18 species of bat that occur within the British Isles, of which 17 are known to breed here. More species occur in the south and west of the country, with species numbers declining towards the north and into Scotland.

All bat species in the UK are nocturnal and feed exclusively on insects (they are insectivorous) which they catch in flight during their night-time activity, using echolocation to locate and home-in on their prey. Bats will roost during the daytime and seek out dark, enclosed and undisturbed places in which to do so, often using a variety of roosting sites within their home range. Different roost sites are used

for different purposes (such as mating, giving birth and hibernation) and at different periods of a bat's life cycle.

During the summer, female bats will gather together in a maternity or breeding roost. In the UK, this starts to occur towards the end of May and the females will seek out a warm and undisturbed site in which to give birth. Because maternity roosts require a particular set of environmental attributes (such as location, temperature, orientation and size), breeding bats tend to return to roost and breed in the same locations year after year. Given that bats live a relatively long time (anywhere from 10-20 years), and only give birth to one pup a year, maternity colonies are crucial to the reproduction and survival of the local population and can be very sensitive to environmental change.

Relatively little is known about hibernation roosts, as tracking and locating hibernating bats is very difficult. However, many species (particularly those within the genera *Myotis* and *Rhinolophus*) have been found within underground sites such as caves, mines and cellars, where the temperature remains constant and low throughout the winter allowing the bats to remain in a state of torpor. The spring and autumn are periods of transition and bats can use a number of different locations on a temporary basis, often moving between roosts as environmental conditions change and temperatures fluctuate. In the autumn, bats will mate, and it has been shown that male and female bats will gather at particular locations (such as a building, cave or tree) to meet, socialise and mate.

Bats choose to roost in a number of different locations, depending on the species, their activity pattern and the period of their lifecycle. Certain species, such as the pipistrelles, favour crevices and small cavities for roosting and will use features such as cracks, crevices and small rot holes in the boughs and trunks of trees and within certain features of buildings such as boxed eaves, gaps under roof tiles, hanging tiles and soffit boards. Other species favour large, uncluttered roof spaces and lofts within buildings where they can hang up on the underside of the roof and use the interior space for flying prior to emergence. Hollow trees, cellars, caves, barns, churches and cavity walls can also all be used for roosting, given suitable access. Certain species, such as the noctule, favour roosting sites within trees whilst others tend to favour buildings. Roost sites may be used by only a very small number of bats, such as solitary males, or may offer shelter to tens or hundreds of bats within maternity and hibernation roost sites.

The suitability of roosting sites is also highly influenced by the location or context of a tree, building or cave. Roost sites are most often favoured when they are within close proximity to foraging habitats and where those habitats are connected to one another within the landscape by features such as hedgerows, woodlands, rivers or sunken lanes along which bats disperse and 'commute' from place to place. Suitable foraging habitats are any places where insect prey is diverse and abundant such as woodlands, ponds, lakes, rivers, scrub, hedgerows and unimproved grassland or pasture. Thus, the ecological context of a site is very important for determining if bats may be present within a roost and the potential for a roost to be present tends to be much higher within rural or village locations.

2 Methodology

2.1 UKHab Habitat Survey

A field survey, using the UK Habitat Classification (UKHab) system, was undertaken on 26th March 2024 by Jan-Piet Stuursma on behalf of Windrush Ecology Ltd. The field survey technique used is detailed in the UK Habitat Classification User Manual (Butcher, Carey, Edmonds, Norton, & Treweek, UK Habitat Classification Manual Version 1.1, 2020).

The MAGIC website and Google Earth Pro satellite imagery were also used to determine whether there are known or possible locations for rare and/or habitats of high nature conservation importance.

The UKHab system comprises a five-level Primary Habitat Hierarchy and a list of Secondary Codes, the latter is divided into Essential codes and Additional Codes. It is mandatory that each recorded habitat parcel (which can be a point, line or polygon using geospatial vector data terminology) is allocated a single Primary Habitat Code and to record the presence of all Essential Secondary Code features associated with that habitat parcel. Additional Secondary Codes can also be associated with habitat parcels, where it is relevant to the whole parcel. The UKHab system recommends that up to six Secondary Codes can be allocated to a single habitat parcel.

The UKHab system includes all habitat types identified in the UK, irrespective of scale and geographic range, including all habitats listed under Section 41 of the NERC Act 2006 and all Habitats Directive Annex 1 habitats recorded in the UK. Where possible, synonyms for UKHAB habitats in other major habitat classifications are provided in the definitions.

The UK Habitat Classification Version 2.0 has been used (UKHab Ltd, 2023), with the use of Level 3 to 5 Primary Habitats and Secondary Codes. Primary Habitats and Secondary Codes follow the UKHab. Definitions listed in the aforementioned document. The Secondary Codes selected are appropriate to the site and habitats recorded.

Target notes were also prepared on features of particular ecological interest and an assessment was made of the site's potential to support protected and notable species (such as species listed under Section 41 of the NERC Act 2006) as well as invasive species (listed on Schedule 9 of the Wildlife & Countryside Act 1981).

2.2 Initial Bat Survey & Preliminary Roost Assessment

An initial bat survey (daytime building inspection) and preliminary roost assessment (PRA) were undertaken on 26th March 2024 by Jan-Piet Stuursma on behalf of Windrush Ecology Ltd. Mr Stuursma holds a licence to survey for bats in all counties of England (Natural England Bat Survey Licence No. WLM-A34 Level 2: 2018-37063-CLS-CLS).

A detailed internal and external survey of 29 Fernbrook Road was undertaken using a 1 million candle-power torch in order to look for bats and/or evidence of bats and to assess the potential of the building to support roosting bats. Internal rooms, loft spaces (if present) and external elevations were inspected for evidence of bats including, bat droppings, urine stains, feeding remains (such as moth wings) and characteristic fur staining around access points.

The bat survey was undertaken according to best practice guidelines published by the Bat Conservation Trust (Collins, 2023) and the *Bat Workers Manual* (JNCC, 2010).

The study also takes into account the nature of the building and the ecological context of the site, including the following factors which may increase the likelihood of roosting bats being present (Collins, 2023):

- Age of the building (pre-20th Century or early 20th Century construction)
- Nature of construction; traditional brick, stone or timber construction
- Large and complicated roof void with unobstructed flying spaces
- Large (>20 cm) roof timbers with mortise joints, cracks and holes
- Entrances and gaps for bats to fly and crawl through
- Poorly maintained fabric providing ready access points for bats into roofs, walls; but at the same time not being too draughty and cool
- Roof warmed by the sun, south-facing roofs in particular
- Weatherboarding and/or hanging tiles with gaps
- Undisturbed roof voids

- Buildings and built structures in proximity to each other providing a variety of roosting opportunities throughout the year
- Buildings or built structures close to good foraging habitat, in particular mature trees, parkland, woodland or wetland, especially in a rural setting

The following criteria are used to determine the level of 'bat roost potential' within buildings (Collins, 2023):

Table 1. Criteria for the assessment of buildings for roosting bats (Collins, 2023).

Potential Suitability	Description of Roosting Habitats in Structures
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).
Negligible ^a	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^b 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 and not a classic cool/stable hibernation site, but could be used by individual hibernating bats ^c).
Moderate	A structure 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, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after the presence is confirmed).
High	A structure 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 habitats. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.
^a Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute), but it is unlikely that they actually would (due to another attribute). ^b For example, in terms of temperature, humidity, height above ground level, light levels or level of disturbance. ^c Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten <i>et al.</i> , 2016 and Jansen <i>et al.</i> , 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.	

Confirmed presence of roosting bats is where evidence indicates that a building or other structure is used by bats, this includes:

- bats seen roosting or observed flying from a roost or freely in the habitat;
- droppings, carcasses, feeding remains etc. found and/or
- bats heard 'chattering' inside a roost on a warm day or at dusk.

Where the possibility that bats are present cannot be eliminated or evidence of bats is found during the building inspection survey, then further surveys (such as winter hibernation, presence/absence and/or roost characterisation) are likely to be necessary if impacts on the roosting habitat (or the bats using it) are predicted.

2.3 Nesting Birds

In addition to the bat survey, the building was assessed for its suitability to support breeding birds. The survey involved a search for evidence of birds including inactive and active nests, droppings, eggs and feathers.

2.4 Other Species

The site was assessed for its potential to support other species, including amphibians and reptiles.

3 Results

3.1 Habitats

Photographs are presented in Appendix 1. Appendix 2 illustrates the location of the site and provides an aerial photograph of the site within the surrounding landscape.

The following UKHab types are present within the site:

Table 2. UKHab habitats within the site.

Primary Code	Secondary Code	Description
u1b5 & u1b6	-	Developed Land; Sealed Surface (buildings & other developed land)
u1	828	Vegetated Garden

3.1.1 Developed Land; Sealed Surface

3.1.1.1 Building

The house is of brick construction, with a main, two-storey section with a pitched and hipped roof of clay tiles and plastic boxed eaves. There is one loft space within this two-storey section of the house. The loft has an approximate floor-to-ridge height of 2m, and the underside roof tiles have a material underlay. Dense cobwebs were noted on the ridge beam and timber frame.

To the south side is a sloping-roofed single-storey section with clay tiles, and there is a single-storey garage with flat roof of corrugated sheet asbestos and plastic. To the north side, and extending into the garden to the east, is a single-storey, flat-roofed section, attached brick shed (with a flat roof) and attached garden room. The garden room is largely glazed, with brick walls and wooden frame to the roof, with corrugated sheet plastic covering. None of these sections have any loft spaces, or any dark and enclosed spaces that bats could use for shelter.

The building is in a good state of repair, with no slipped or missing roof tile, no gaps under ridge tiles and no gaps or crevices within the boxed eaves. The external brickwork of all sections is solid and intact. There are no external features, such as hanging tiles or wooden weatherboarding, that crevice-dwelling bat species could use for shelter.

29 Fernbrook Road is assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats within an undetected location.

3.1.2 *Vegetated Garden*

The remainder of the site comprises a vegetated garden. The garden habitat is considered to be of low ecological value. Specific habitats that will be directly affected by the proposals include patio, lawn and some shrubs.

3.2 **Species**

3.2.1 *Bats*

No bats or evidence of bats were found inside or outside of the building. In particular, no bat droppings were noted within the one loft space.

3.2.2 *Nesting Birds*

No evidence of nesting birds was found inside or outside of the building, and the building is not considered to offer suitable habitat to swifts or barn owls.

Trees and shrubs of the garden have the potential to offer nesting sites to breeding birds.

3.2.3 *Amphibians*

There are no ponds within the garden. There are no ponds, as shown on Ordnance Survey maps, within a 500m radius of the site. The nearest pond appears to be approximately 930m from the site.

It is considered that amphibians are absent from the site.

3.2.4 *Reptiles*

The garden is well-maintained, and the lawns are regularly mown to a short sward. The vegetated garden habitat is not considered to be suitable for common reptile species.

The site is surrounded on all sides by suburban, residential development and there are no adjacent or nearby habitats that are considered to be suitable for reptile species.

It is considered that reptiles are absent from the site.

3.2.5 *Other Species*

No evidence of other protected or notable species was noted. There is no evidence of badgers *Meles meles* within the garden.

4 **Discussion**

4.1 **Legislative Guidance**

4.1.1 *Bats*

As with many animal species within the UK, declines in the abundance and distribution of many bat species have been documented through recent decades. The reasons for these declines are various and complex but it is considered that the major factors are changes in landuse and agriculture, the loss of woodlands and hedgerows and the loss of suitable roosting sites.

Bats are particularly sensitive to human activity due to the fact that they roost within buildings, trees and underground structures such as mines, and the availability of suitable roost sites is considered to be a key factor in the conservation of bats within the UK. As a consequence, all species of bat and their roost sites are protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and under The Conservation of Habitats and Species Regulations 2017. Taken together, these make it an offence to:

- (a) Deliberately capture or intentionally take a bat
- (b) Deliberately or intentionally kill or injure a bat
- (c) To be in possession or control of any live or dead wild bat or any part of, or anything derived from a wild bat
- (d) Damage or destroy a breeding site or resting place of such an animal or intentionally or recklessly damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection
- (e) Intentionally or recklessly disturb any wild bat while it is occupying a structure or place that it uses for shelter or protection
- (f) Deliberately disturb any bat, in particular any disturbance which is likely
 - to impair their ability;
 - (i) to survive, breed, reproduce or to rear or nurture their young; or
 - (ii) in the case of hibernating or migratory species, to hibernate or migrate; or
 - to affect significantly the local distribution or abundance of the species to which they belong

A bat roost may be any structure a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, current legal opinion is that a bat roost is protected whether or not the bats are present at the time.

Although the law provides strict protection to bats, it also allows this protection to be set aside (derogation) under The Conservation of Habitats and Species Regulations 2017 through the issuing of licences. Where a lawful operation is required to be carried out but which is likely to result in one of the above offences, a licence may be obtained from Natural England (the statutory body in England with responsibility for nature conservation) to allow the operation to proceed. However, in accordance with the requirements of The Conservation of Habitats and Species Regulations 2017, a licence can only be issued where the following requirements are satisfied:

- The proposal is necessary 'to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment';
- 'There is no satisfactory alternative';
- The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'.

These three criteria are often referred to as the 'three tests' of the Regulations. All three must be satisfied in order for a licence to be granted.

4.1.2 *Nesting Birds*

Nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended), which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. The nesting season for most species is between March and August inclusive.

4.2 Impact Assessment

4.2.1 Habitats

The proposed extension will only affect the existing building and areas of vegetated garden. There are no foreseeable ecological impacts on habitats of any significant ecological value.

Vegetated garden habitats will remain in the long-term, and there is considered to be no significant impact on this habitat type.

There are no potential impacts on habitats of 'principal importance' or 'irreplaceable' habitats.

4.2.2 Species

4.2.2.1 Bats

The survey indicates that roosting bats are absent from 29 Fernbrook Road, Caversham. No bats or evidence of bats were found during the initial bat survey and internal building inspection. In particular, no bat droppings were noted within the loft space. There are not considered to be any features of the building that could offer shelter to bats in an undetected location.

Given the above, the proposed works are unlikely to result in any impacts on bats or places that bats may use for shelter or protection (roosts).

Since no significant impacts on bats are predicted under The Conservation of Habitats and Species Regulations 2017, a European Protected Species (bat) Licence will not be required for the proposed works to proceed. Since there are no predicted impacts on bats or their habitats, it is not necessary to consider the 'three tests' of The Conservation of Habitats and Species Regulations 2017 in this instance.

4.2.3 Birds

There are no foreseeable impacts on nesting birds as a result of the proposed works to the house.

4.2.4 Other Species

There are no foreseeable impacts on any other protected species.

5 Recommendations

5.1 Further Surveys

No further surveys are considered to be necessary at present.

5.2 Bats

As previously discussed, a European Protected Species (bat) Licence is not considered to be necessary for works to proceed.

5.2.1 Timing

No timing constraints are considered necessary.

5.2.2 Careful Work Practices

As bats are a highly mobile species, contractors should be briefed with regard to the fact that individual bats can often exploit very small crevices as roost sites (such as under roof tiles) and that bats can move between roost sites on a regular basis.

In the very unlikely event that bats or significant evidence of bats (for example large accumulations of fresh bat droppings) are encountered, works should stop immediately, and advice sought from a suitably qualified ecologist.

5.2.3 *Enhancement*

It is recommended that a bat box is erected on the building, or on a garden tree, as an enhancement measure. One bat box would be seen as an appropriate enhancement.

6 **References**

Altringham, J., 2003. *British Bats*. Harper Collins.

Collins, J. 2023. *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition)*. The Bat Conservation Trust, London.

Mitchell-Jones, A., 2004. *Bat Mitigation Guidelines*. English Nature.

7 Appendix 1. Photographs



Photograph 1. The dwelling of 29 Fernbrook Road, viewed from the west.



Photograph 2. The eastern elevation of the dwelling.



Photograph 3. Detail of the pitched and hipped roof.



Photograph 4. Detail of the boxed eaves.



Photograph 5. Detail of the garage.



Photograph 6. Detail of the garden room.



Photograph 9. Detail of the loft space.



Photograph 10. Detail of the loft space.

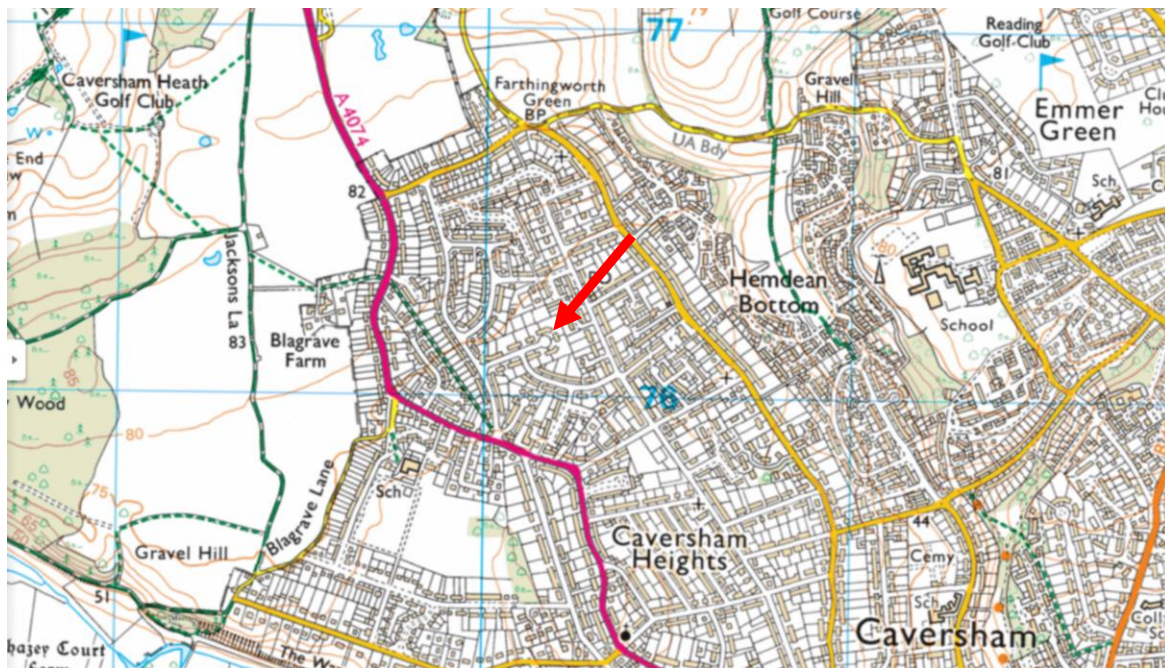


Photograph 11. Internal space of the garage.



Photograph 12. Vegetated garden.

8 Appendix 2. Site Location Plans



Ordnance Survey map showing the approximate location of 29 Fernbrook Road (indicated by the red arrow) within the local area.



Aerial photograph showing the location of 29 Fernbrook Road, indicated by the red arrow.