



**123 Peppard Road, Emmer Green,
Reading, Berkshire RG4 8TR**

Bat Survey Report

October 2015

on behalf of Mr Y. Baviskar

Client	Mr Y. Baviskar
Job name	123 Peppard Road, Emmer Green, Reading, Berkshire
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1 Summary of Study

- A bat survey of 123 Peppard Road, Emmer Green, Reading was undertaken on 20th October 2015 by Tracy Gray *BSc GradCIEEM* and Owen Crawshaw *BSc GradCIEEM*.
- Miss Gray holds a licence from Natural England to survey for bats in all counties of England (Natural England Level 2 WML-CL18 Licence 2015-14396-CLS-CLS).
- The interior and exterior of the building were surveyed for bats and evidence of bats in accordance with best practice guidelines published by the Bat Conservation Trust (Hundt 2012).
- The building was also assessed for its potential to offer shelter to bats within an undetectable roost site.
- No bats were found during the survey.
- A very small number of old bat droppings (3 bat droppings) were found within the loft space of the property. The droppings indicate that a bat has entered the space sometime in the past only to subsequently leave; there is no indication of a roost or maternity colony within the loft space.
- The building is considered to have 'negligible' potential to offer shelter to bats within an undetected roost site.
- No further ecological surveys are considered necessary.
- No significant impacts on bats or their roost sites are predicted under The Conservation of Habitats & Species Regulations 2010.
- It is not necessary to consider the 'three tests' of The Conservation of Habitats & Species Regulations 2010 in this instance.
- A European Protected Species (Bat) Licence is not considered to be necessary for the proposed works to proceed.
- Recommendations are made with regard to careful work practices.

2 Introduction

2.1 Site Description

123 Peppard Road is a semi-detached dwelling located within the suburb of Emmer Green, to the northern side of the town of Reading in Berkshire. The property is situated in a residential area to the west of Peppard Road (see Appendix 2 for a location plan), to the east of Buckingham Drive. The approximate Ordnance Survey grid reference for the property is SU 719 759.

The dwelling is constructed from brick, with a pitched roof of clay tiles. A single-storey, flat-roofed extension is present to the rear (north-west) of the building. The loft space covers the footprint of the building and a floor to ridge height of approximately 2m, with a bitumen and hessian underfelt.

The immediate surrounding area is dominated by residential development, comprising roads, houses and small gardens. Caversham Park is located approximately 280m to the north-east and includes areas of parkland, woodland and a pond. The open countryside is located approximately 1km to the north, with an agricultural landscape dominated by arable farmland and improved pasture set within a network of interconnecting hedgerows. Woodland is also relatively abundant within the wider area, with Blackhouse Wood and Clayfield Copse located approximately 1km to the north of the property.

2.2 Proposed Works

There is a proposal erect a two-storey extension to the south-western side of the house which will extend around to part of the north-western elevation. In addition, a single-storey extension will also be erected along the length of the north-western elevation (see Appendix 3 for proposal plans).

2.3 Aims of Study

The aims of this study are to survey the building for bats and/or evidence of bats. The study assesses the overall potential of the building to support roosting bats and discusses the likely impact of the proposed works on bats 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 2010. The need for a European Protected Species (Bat) licence is also discussed in light of the impact assessment.

2.4 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.

2.5 Legislative Guidance

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 land use 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 2010. 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 2010 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 2010, 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.

3 Methodology

A bat survey (building inspection survey) was undertaken on 20th October 2015 by Tracy Gray *BSc GradCIEEM* and Owen Crawshaw *BSc GradCIEEM*. Miss Gray holds a licence from Natural England to survey for bats within all counties of England (Natural England Level 2 WML-CL18 Licence 2015-14396-CLS-CLS).

A detailed internal and external survey of the building was undertaken using a 1 million candle-power torch and close-focusing binoculars in order to look for bats and/or evidence of bats and to assess the potential of the building to support roosting bats. The loft space and external elevations of the building were inspected for evidence of bats including, bat droppings, urine stains, feeding remains (such as moth wings) and characteristic fur staining around access points. Notes were made on the relative freshness, shape and size of bat droppings and the location and quantity of any feeding remains. 'Clean' gaps and crevices within the structure of the building were looked for as this can indicate where bats may have gained access the loft and the fabric of the walls.

The bat survey was undertaken according to best practice guidelines published by the Bat Conservation Trust (Hundt 2012) and the *Bat Workers Manual* (JNCC 2010). The study also takes into account the structure of the building and ecological context of the property, including the following factors which may increase the likelihood of roosting bats being present (Hundt 2012):

- 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 mortice/tenon 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:

- **None** – There are no features that roosting bats could use for shelter. No further surveys are required.
- **Negligible** – While presence cannot be absolutely discounted, no obvious features that could be used by bats for shelter are identified. No further surveys are required.
- **Low** – A small number of potential roosting features are identified. These features are most likely to offer shelter to small numbers of non-breeding and non-hibernating bats. One further survey (dusk/dawn watch) is likely to be necessary.
- **Moderate** – Several potential roost features are identified. Features have the potential to offer shelter to several bats, several species and/or a breeding colony. The site is set within suitable habitat for foraging and commuting bats. Two further surveys (dusk/dawn watches) are likely to be necessary.
- **High** – Particular features of potential significance for roosting bats are identified such as inaccessible loft spaces, deep cavities and crevices. Surrounding habitat is of high quality for foraging and commuting bats and the site is connected with the wider landscape by strong linear features that could be used by bats. Three further surveys (dusk/dawn watches) are likely to be necessary.
- **Presence Confirmed** – Evidence indicates the presence of bats:
 - bats seen roosting;
 - significant numbers of bat droppings, particularly fresh droppings, are present;
 - bats heard 'chattering' on a warm day or at dusk;
 - three further surveys (dusk/dawn surveys) are likely to be necessary.

4 Results & Discussion

4.1 Ecological Context

The property is located within a suburban, residential area and adjacent habitats appear largely sub-optimal for roosting and foraging bats, comprising buildings, roads and small gardens. However, suburban gardens can offer foraging opportunities to commoner bat species and there are areas of parkland and woodland within a 500m radius of the property. These habitats may be suitable for a number of bat species, including species which use buildings as roosting sites. Of particular note is the presence of Caversham Park located approximately 280m to the east, with its extensive grounds comprising grassland, parkland, woodland and a pond. There are also woodlands located to the east of the property, with Clayfield Copse located approximately 1km to the north-east and Blackhouse Wood just beyond.

Bat species that are known to occur within the local area include common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula* and brown long-eared bat *Plecotus auritus*. In addition, several species of bat within the genus *Myotis* are also known to occur within this part of Berkshire (and neighbouring Oxfordshire, to the north) including Natterer's bat *M. nattereri* and Daubenton's bat *M. daubentonii*. The majority of these species, with the exception of the noctule (which favours tree roosts), will use buildings as roosting sites.

4.2 Description of Building

123 Peppard Road is a semi-detached dwelling of brick construction, with render to the lower walls. The roof is pitched and has a covering of clay tiles. A narrow sloping roof of clay tiles runs along the porch to the south-eastern side of the property. There are wooden boxed eaves to the front and rear, and a brick chimney stack with lead flashing to the base to the north-eastern elevation. A single-storey red brick extension is present to the north-western corner of the property. The extension has a flat roof of bitumen roofing felt with wooden bargeboards fitted to the eaves.

There is a single loft space covering the footprint of the building. The loft measures approximately 2m from floor to ridge and has an area of approximately 50m². The roof has a bitumen and hessian underfelt. Two covered water tanks are situated to the south-eastern side of the loft and a single hatch allows access via the first floor landing to the south-western side of the space.

The building is in a very good state of repair; the external brick work is intact and there is no missing mortar. The clay roof tiles, lead flashing and barge boards are close-fitting.

4.3 Evidence of Bats

No bats were observed during the survey. A very small number of old bat droppings (3 droppings) were found loosely scattered within the loft. The droppings are of a size and shape that is characteristic of the brown long-eared bat *Plecotus auritus*. The droppings are not fresh and are not considered to have been left in 2015.

The number of droppings indicates that a single bat has accessed the loft space sometime in the past only to subsequently leave and not return. A covering of cobwebs on the underside of the roof and dense cobwebs at either end of the roof space indicates that bats have not been flying within the loft, or hanging up along the ridge beam in the recent past. There is no indication of a roost within the loft and no evidence of a maternity colony.

The building has been assessed as having 'negligible' potential to offer shelter to roosting bats.

Bats will choose to roost within different locations within the summer and winter periods (see Figure 1), favouring dark, enclosed, humid and cool locations for hibernation such as caves and cellars. These locations must maintain constant low temperatures (2-8°C), and temperatures must also not go below freezing on a regular basis. In addition, bats favour places that are dark, undisturbed and retain relatively high humidity during the winter period. The loft space is not considered to be suitable for hibernation due to the fact that it is unlikely to maintain the constantly cool and humid conditions which are required by overwintering bats.

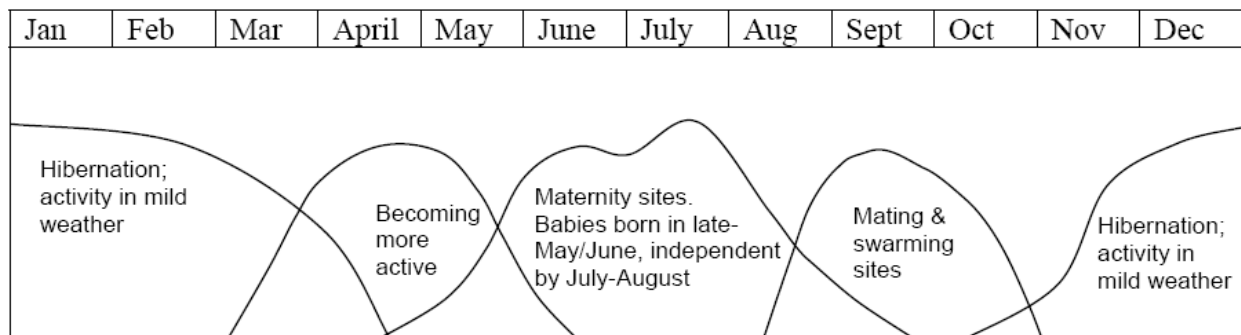


Figure 1. Diagram showing the yearly life cycle of a bat. Taken from the Bat Mitigation Guidelines by Mitchell-Jones 2004.

5 Potential Impacts

There is no evidence to suggest that the building has been used as a place of shelter/protection by roosting bats. The old bat droppings indicate that a single bat has investigated the loft space, only to leave soon after. As a result of this conclusion, the proposed works are unlikely to result in any significant impacts on bats or the places that they use for breeding, shelter and/or protection (roosts) and no specific compensation measures are considered necessary (Mitchell-Jones 2004).

In addition, since no significant impacts on bats are predicted under The Conservation of Habitats and Species Regulations 2010, a European Protected Species (Bat) licence will not be required for 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 2010 in this instance.

6 Recommendations

6.1 Further Survey

No further surveys are considered necessary in this instance.

1.1 Timing

No strict timing constraints are considered necessary in this instance.

1.2 Careful Work Practices

Works should proceed in a careful and controlled manner. Contractors should be briefed with regard to the fact that individual bats can often exploit very small crevices, such as gaps under roof tiles, as roost sites and that bats can move between roost sites on a regular basis.

Roof tiles should be removed by hand, while checking for bats or significant evidence of bats, such as large accumulations of fresh droppings. In the 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 qualified ecologist and/or Natural England.

If it is confirmed that bats are, or have been, roosting within the building, a European Protected Species Licence may be required to allow for the extension to proceed under the legal protection afforded to bats under The Conservation of Habitats and Species Regulations 2010. This is because the demolition will result in 'damage' of a place used by bats for shelter.

7 References

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

Hundt, L., 2012. *Bat Surveys: Good Practice Guidelines*. Bat Conservation Trust.

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

8 Appendix 1. Photographs



Photograph 1. The south-eastern elevation of the dwelling (123 Peppard Road).



Photograph 2. The south-western gable end of the dwelling to be affected by the proposed extension.



Photograph 3. The north-western (rear) elevation of the dwelling.



Photograph 4. A photograph showing the excellent condition of the brickwork.



Photograph 5. A gap noted during the survey, between the wall and the boxed eaves (indicated by the red circle).

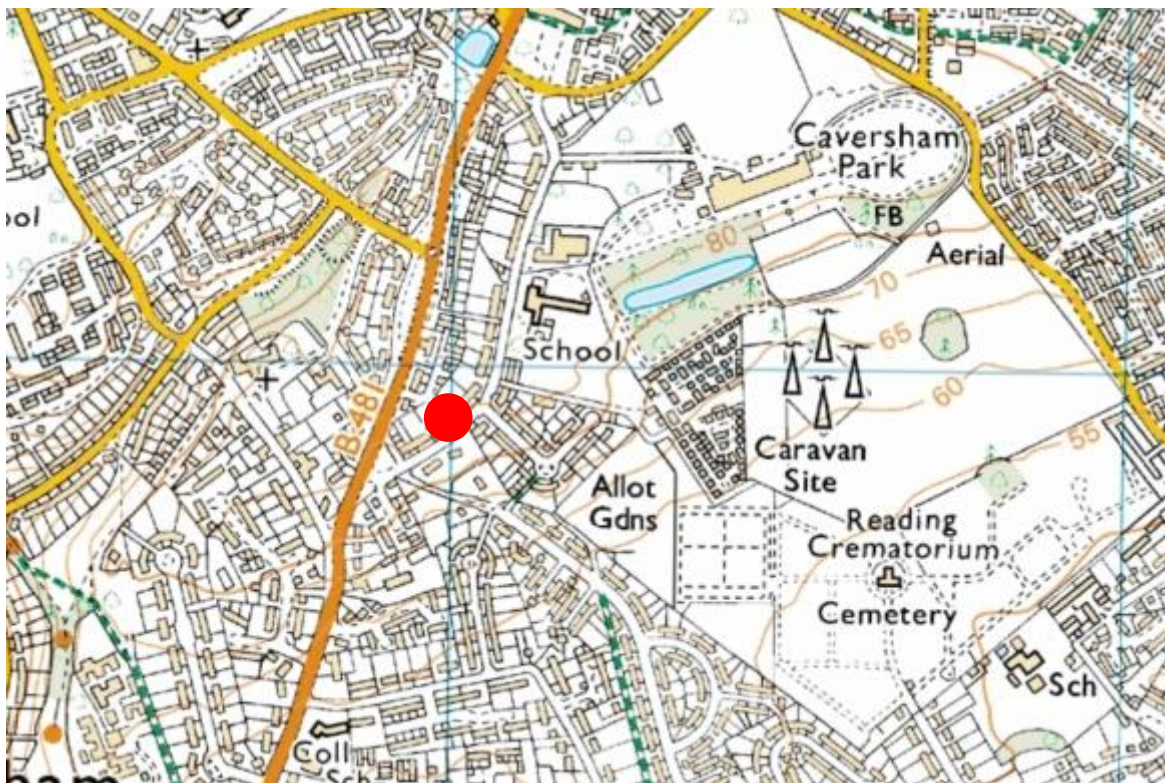


Photograph 6. The loft space within the dwelling.

9 Appendix 2. Site Location Plans



Aerial photograph of the approximate location of 123 Peppard Road, Emmer Green shown by the red outline. Source: <http://maps.google.co.uk/>



Ordnance Survey map showing the approximate location of the property (red dot) within the local area. Source: <http://www.bing.com/maps/>

10 Appendix 3. Proposal Plans

