



50 Chazey Road, Caversham, Reading RG4 7DU

Bat Survey Report

October 2015

on behalf of Mr & Mrs Smith

Client	Mr & Mrs Smith <i>care of</i> ZLA Ltd
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1 Summary of Study

- A bat survey of 50 Chazey Road, Caversham was undertaken on 15th 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 dwelling and outbuilding were surveyed for bats and evidence of bats in accordance with best practice guidelines published by the Bat Conservation Trust (Hundt 2012).
- The buildings were also assessed for their potential to offer shelter to bats within an undetectable roost site.
- No bats or evidence of bats were found during the survey.
- A gap was observed beneath a barge board to the northern side of the single-storey section. Crevice features under hanging tiles were noted at several locations.
- The crevices and gaps are considered to offer potential roost sites to small numbers of crevice-dwelling bat species.
- The dwelling is considered to have 'low' potential to offer shelter to bats within crevices on the exterior of the building.
- The outbuilding is considered to have 'negligible' potential to offer shelter to bat within an undetected roost site.
- Recommendations are made for a bat activity survey in order to confirm or rule out the presence of roosting bats within external features.
- If present, the most likely scenario is that small numbers of common species are present within non-breeding, day roosts that are used on an occasional or transient basis.
- If bats are present, and the roost features are to be affected, then a Bat Licence will be required from Natural England to allow for the 'destruction' or 'damage' of roost sites. This may be a Low Impact Bat Class Licence.
- Appropriate compensation in this scenario would be bat boxes on the exterior of the building and/or on trees.
- Even if bats are present, it is considered that the favourable conservation status of the species can be maintained through appropriate mitigation and compensation, and that there will be no killing or injury of bats.
- The continued ecological functionality of the roosts can be maintained.

2 Introduction

2.1 Site Description

50 Chazey Road is located to the north side of Chazey Road within the suburb of Caversham, Reading, Berkshire. The approximate Ordnance Survey grid reference for the property is SU 698 754. 50 Chazey Road is a detached dwelling arranged over two storeys, with a single-storey extension to the northern side; the building is believed to date from the late 20th Century. The study also includes an outbuilding within the gardens of the property.

The property is located within a suburban area approximately 2km to the north-west of Reading town centre. Surrounding areas are dominated by roads, dwellings, gardens, amenity parkland, a golf course and playing fields. A linear woodland is present to the north side of The Warren, approximately 300m to the south of Chazey Road, and forms a connection with Chazey Wood, approximately 900m to the west of the property. These woodlands may provide suitable foraging and roosting habitats for bats.

2.2 Proposed Works

There is a proposal to demolish part of the outbuilding, and to extend the dwelling to its north-eastern side. The extension will be two-storey and will affect the existing single-storey extension. The existing hanging tiles will be removed.

2.3 Aims of Study

The aims of this study are to survey the dwelling and outbuilding for bats and/or evidence of bats. The study assesses the overall potential of the buildings 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

2.5.1 European Protected Species Licence (EPSL)

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.

2.5.2 Low Impact Bat Class Licence (LIBCL)

In 2015, Natural England launched a new class licence (WML-CL21), which provides a streamlined process to the European Protected Species Licence (EPSL) described above. The Low Impact Bat Class Licence (LIBCL) permits work that has a low impact on certain bat species and certain roost types, but which still needed to be licensed in order to meet legal requirements. Specifically, the criteria for using the low impact class licence are set out below.

Bat species

The low impact licence can be used for sites where the following species are roosting:

- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Brown long-eared (*Plecotus auritus*)
- Whiskered (*Myotis mystacinus*)
- Brandt's (*Myotis brandtii*)
- Daubenton's (*Myotis daubentonii*)
- Natterer's (*Myotis nattereri*)

Assemblage of bats

Sites that support a maximum of three bat species listed above can be registered for the class licence. Sites with a more diverse assemblage of bat roosts must apply for an individual European Protected Species (EPS) licence.

Number of bats

Sites that support individuals or small numbers (in total) of the bat species listed above can register for the low impact class licence. If more than one bat species will be affected, it is the total number of bats which must be considered. The conservation status of bats varies across regions, and must be considered by the ecologist when determining what constitutes 'small numbers'.

Roost type

The low impact class licence applies to roosts of low conservation significance, and is regulated to cover the following types of roosts in buildings:

- Feeding roosts
- Night roosts
- Day roosts
- Transitional roosts / occasional roosts

Sites with roosts of higher conservation significance such as maternity roosts, hibernation sites or swarming sites do not qualify.

Number of roosts

The low impact class licence is applicable to sites that support no more than three roosts in total (across all structures).

Impacts

Natural England's low impact class licence permits activities resulting in the disturbance and/or capture of certain bat species (listed above) and/or the damage or destruction of roosts of low conservation significance.

Natural England's low impact class licence is held by Registered Ecological Consultants and sites must be registered with, and approved by Natural England before any licensable work can commence. The ecological consultant must apply to Natural England's Sustainable Development Wildlife Licensing to register the site with at least 3 weeks (15 working days) notice and no more than 12 weeks before commencement of any licensable activities.

3 Methodology

A building inspection survey was undertaken on 15th October 2015 by Tracy Gray *BSc GradCIEEM* with assistance from 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) and has over four years of experience in undertaking bat surveys.

A detailed internal and external survey of the buildings was undertaken using a 1 million candle-power torch to look for bats and/or evidence of bats and to assess the potential of the buildings to support roosting bats. The loft spaces of the dwelling and external elevations of both buildings 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 buildings 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 buildings 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

4.1 Description of Buildings

4.1.1 Dwelling

The dwelling is constructed from brick, with a pitched roof of modern clay tiles and a brick chimney stack. Hanging tiles are present on the exterior of the eastern gable end wall, upper level of the eastern elevation and at the south-western corner of the building.

Two separate loft voids are present. The larger of the two spaces has a rectangular floor-plan and covers the main section of the building, with a floor to ridge height of approximately 1.75m. The roof is supported by wooden rafters and five wooden collar beams arranged evenly throughout the void. The roof is lined with a bitumen and hessian underfelt, with some gaps noted towards the ridge. The smaller loft space has a floor to ridge height of approximately 1.25m, with a section extending over the south-western side of the building. A single-storey, flat-roofed extension is present to the north side of the dwelling. The roof has a covering of bitumen roofing felt, with a conical glass skylight.

The roof and brick walls of the dwelling are in a good state of repair. However, a small number of hanging tiles are missing from the eastern gable end. Additional gaps exist at the south-western roof fascia, where tiles have pulled away from each other, and at the southern elevations between the wall plate and the wooden boxed eaves.

The dwelling is considered to have 'low' potential to shelter roosting bats within crevice features on the exterior of the building.

4.1.2 Outbuilding

An outbuilding is located to the immediate north of the dwelling; it is currently used for storage shed and as a workshop. The southern-section of the outbuilding is constructed from brick, and the walls of the northern section are of wooden weather-boarding. The roof is pitched, with modern clay tiles.

The outbuilding is considered to have 'negligible' potential to shelter roosting bats.

4.2 Evidence of Bats

No bats or significant evidence of bats were found during the survey. In particular, no bat droppings were found within the loft space of the property. A single bat dropping was noted on an external windowsill.

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

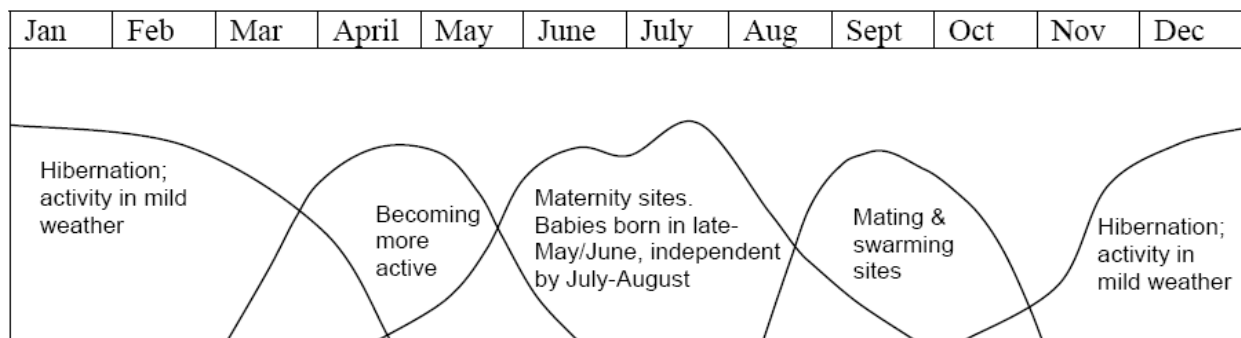


Figure 1. Diagram showing the yearly life cycle of a bat. Taken from the *Bat Mitigation Guidelines* by Mitchell-Jones 2004.

5 Potential Impacts

There is no evidence to suggest that the lofts are used by roosting bats, and the roof and brick walls of the building are in good repair. Works to the roof and to brick walls will therefore have no foreseeable impacts on bats or their roost sites. The outbuilding is considered to offer 'negligible' potential to bats and partial demolition of the outbuilding will have no foreseeable impacts on bats.

The proposed development includes the removal of all hanging tiles, and without further survey work, the impact of this on bats cannot be predicted or quantified. If bats are present within crevice roosts under hanging tiles, the most likely scenario is that small numbers of nonbreeding, non-hibernating bats use the features as transient day roosts. There is no evidence of a breeding roost and only small numbers of crevice-dwelling species, such as pipistrelles, are likely to be present.

If such roosts exist, they would be of 'low' conservation significance and mitigation for their loss would be relatively straightforward, through the erection of bat boxes or other features that crevice-dwelling bats would adopt. However, a Bat Licence would be required for the removal of the hanging tiles and the 'destruction' of the current roost. It is likely that a Low Impact Bat Class Licence would be the most appropriate form of licencing in this instance.

If bats are present, it is considered that with an appropriate mitigation strategy in place, the favourable conservation status of the species can be maintained, and direct impacts of killing and injury can be avoided. There is no reason to believe that a Bat Licence would not be issued by natural England, given the scenario above.

6 Recommendations

6.1 Further Survey

Given that the dwelling has been assessed as having 'low' potential to offer shelter to roosting bats, best practice (Hundt 2012) would be to undertake a bat activity survey. The aim would be to observe and count bats emerging from roost sites under hanging tiles.

Bat activity surveys take the form of dusk emergence watches and/or dawn re-entry surveys during the period May to August inclusive. It is considered that two surveyors will be necessary to provide adequate coverage of the dwelling.

6.2 Mitigation Strategy

6.2.1 Licencing

The results of the further bat activity surveys will inform the need for a Bat Licence, and whether the Low Impact Bat Class Licence is the most appropriate route for licencing. If no bats are present, then no licence will be required.

As discussed, if bats are present, the most likely scenario is that small numbers of common species are roosting within external crevice features. These bats are unlikely to be breeding and the building is not considered to be suitable for hibernation. If this is the case, then a Low Impact Bat Class Licence would most appropriate.

With a suitable mitigation strategy in place (see below), there is no reason to believe that Natural England cannot issue a Low Impact Bat Class Licence for the works. This is due to the fact that the favourable conservation status of the species can be maintained, killing and injury can be avoided and suitable features can be installed to maintain the continued ecological functionality of the building as a roost site.

The following sections discuss an appropriate mitigation strategy, if small numbers of common species are found to be present. If no bats are present, then no specific mitigation is required.

6.2.2 Timing

It is recommended that works to remove the hanging tiles are undertaken during the period September to April, inclusive, avoiding the summer months.

The ideal periods would be March and April, or September and October.

6.2.3 Careful Work Practices

Works should proceed in a careful controlled manner, with the removal of hanging tiles by hand and under supervision by an ecologist (a Registered Consultant). Each tile will be removed and inspected for bats, under direct supervision of the ecologist (a Registered Consultant). If bats are encountered, they will be removed by hand by the ecologist and placed into a pre-erected bat box.

6.2.4 Replacement Roost Features

Under the Low Impact Bat Class Licence, only minimal compensation for the loss of roosts is expected. The following features would be considered appropriate to the scenario above:

- One Schwegler 1FF bat box mounted on a tree within the garden (this would be used to rescue any bats that are found during the works), to remain in perpetuity.
- Two wooden bat boxes erected on the extended dwelling.

These would be considered appropriate for small numbers of pipistrelle species.

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. 50 Chazey Road, viewed from the south.



Photograph 2. The rear (northern side) of the property.



Photograph 3. A clean gap beneath the barge board fitted to the single-storey extension.



Photograph 4. A crevice feature at the eastern elevation of the dwelling created as a result of a missing hanging tile.



Photograph 5. The main loft space within the dwelling.



Photograph 6. The smaller loft space within the south-western corner of the roof space.

9 Appendix 2. Site Location Plans



Aerial photograph showing the location of 50 Chazey Road, Caversham (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 Building Plan and Survey Results

