



**Old Grove House, St Barnabas Road,
Emmer Green, Reading RG4 8RA**

**Initial Bat Survey
& Preliminary Roost Assessment**

May 2022

on behalf of Janus Conservation Ltd

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Contents

1	Executive Summary	1
2	Introduction	1
2.1	Site Description	1
2.2	Proposed Works	1
2.3	Aims of Study	1
2.4	Bat Ecology	1
3	Methodology	2
3.1	Field Surveys.....	2
3.1.1	Initial Bat Survey & Preliminary Roost Assessment (PRA)	2
3.2	Limitations on Survey Data	4
4	Results & Evaluation.....	4
4.1	Description of Buildings	4
4.1.1	Old Grove House	4
4.1.2	The Garage.....	6
4.2	Evidence of Bats.....	6
4.3	Evidence of Birds.....	8
5	Discussion.....	9
5.1	Assessment of Results	9
5.1.1	Bats.....	9
5.1.2	Birds.....	9
6	Discussion.....	10
6.1	Legislative Guidance	10
6.1.1	Bats.....	10
6.1.2	Nesting Birds.....	11
6.2	Potential Impacts	11
6.2.1	Bats.....	11
6.2.2	Birds.....	11
7	Recommendations	11
7.1	Bats	11
7.1.1	Bat Activity Surveys	11
7.1.2	Mitigation Strategy	12
7.1.3	Enhancement Opportunities	12
7.2	Birds	12
7.2.1	Timings	12
7.2.2	Enhancement Opportunities	13
8	References.....	13
9	Appendix 1. Photographs	14
10	Appendix 2. Site Location Plans	17

1 Executive Summary

Site Details	Old Grove House, referred to as the 'site' within this report, comprises a detached dwelling and garage located to east of St Barnabas Road, within the suburb of Emmer Green approximately 3.55km north of Reading, Berkshire RG4 8RA. The approximate Ordnance Survey grid reference for the property is SU 713 766.
Proposals	There are proposals to re-roof both Old Grove House and the garage.
Methodology	An initial bat survey and preliminary roost assessment was undertaken on the 28 th April 2022 by Reuben Hayden <i>MSc QCIEEM</i> .
Evaluation	• Evidence of bats in the form of approximately 100 bat droppings was found in the central loft of Old Grove House. No bats were observed at the time of the survey. • No evidence of bats was found within the northern loft of Old Grove House or the two loft spaces of the garage. • Potential roost features noted on the exterior of Old Grove House include gaps under ridge and roof tiles and a gap under metal flashing on the western elevation. • Potential roost features noted on the exterior of the garage include gaps under roof tiles. • Old Grove House is assessed as having 'high' potential to offer shelter to roosting bats (Collins, 2016), this due to the evidence of bat presence within the loft and the identification of potential roost features on the exterior. • The garage is assessed as having 'moderate' potential to offer shelter to roosting bats (Collins, 2016), this due to the identification of potential roost features on the exterior. • A bird nest was found at the eastern eaves of Old Grove House and within the western loft space of the garage.
Impact Assessment	• The proposed re-roofing has the potential to destroy and damage bat roosts. • Removal of the identified bird nests during the bird nesting period could have direct impacts on birds through the damage and destruction of nests and the killing and injury of young/eggs.
Recommendations	Three bat activity (dusk/dawn) surveys of Old Grove House are recommended to confirm the presence/absence of roosting bats and to characterise the roost resource. Two bat activity (dusk/dawn) surveys of the garage are recommended to confirm the presence/absence of roosting bats.

	If the identified bird nests are to be removed, it is recommended that the removal should be undertaken outside of the bird breeding season (avoiding March to August, inclusive) so as to avoid any impacts on active birds' nests. Enhancement measures for bats will be considered in more detail once the bat activity surveys have been carried out. The erection of bird boxes is recommended to provide roosting opportunities for birds in the locality.
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2 Introduction

2.1 Site Description

Old Grove House, referred to as the 'site' within this report, comprises a detached dwelling and garage located to east of St Barnabas Road, within the suburb of Emmer Green approximately 3.55km north of Reading, Berkshire RG4 8RA. The approximate Ordnance Survey grid reference for the property is SU 713 766.

Old Grove House is a Grade II, two-storey dwelling comprising of brick/flint walls and multiple pitched roofs of clay tiles. The dwelling has a loft space above the northern section and a loft space above the main central section. Within the northern area of the site, there is a garage which comprises brick walls and a mono-pitched roof of clay tiles. The garage has two loft spaces that span over the western and eastern sections of the building.

The property is located on the western side of Emmer Green, with detached dwellings and gardens being found in all directions. The wider landscape is characterised residential development of Emmer Green and pockets of woodland, Fairways Family Golf Centre, arable land and improved pasture.

Ancient woodland is a frequent habitat within the local landscape with ancient woodlands found within a 2km radius including Appledons Copse, Blackhouse Wood, Chambers Copse, Cucumber Wood, Dysons Wood, Longcross Shaw, Newells Copse and Pages Shaw.

2.2 Proposed Works

There are proposals to re-roof both Old Grove House and the garage.

2.3 Aims of Study

The aims of this study are to survey the buildings for bats and/or evidence of bats, and other protected species including nesting birds. The study assesses the overall potential of the buildings to support roosting bats and other protected species, such as nesting birds. The report discusses the potential impacts of the proposed works on protected species and their habitats.

The report makes recommendations for appropriate mitigation, compensation and enhancement measures, 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.

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 copulate.

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.

3 Methodology

3.1 Field Surveys

3.1.1 Initial Bat Survey & Preliminary Roost Assessment (PRA)

An Initial Bat Survey and Preliminary Roost Assessment (PRA) were undertaken on the 28th April 2022, by Reuben Hayden MSc. Mr Hayden holds a licence from Natural England to

survey for bats within all counties of England (Natural England Level 1 Licence no. 2021-54302-CLS-CLS) and has over 2 years of experience undertaking bat surveys.

A detailed internal and external survey of the buildings 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 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 to the interior spaces and the fabric of the walls.

The bat survey was undertaken according to best practice guidelines published by the Bat Conservation Trust (Collins, 2016).

The study also takes into account the structure and ecological context of the buildings, including the following factors which may increase the likelihood of roosting bats being present:

- 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 for as guidelines for assessing the potential suitability of buildings for bats (Collins, 2016):

Suitability	Description of Roosting Habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A structure 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).
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 – the assessments in this table are made irrespective of species conservation status, which is established after the presence is confirmed).

Suitability	Description of Roosting Habitats
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.

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.

In addition to the bat survey, the buildings were checked for evidence of nesting birds including old birds' nests, bird droppings, feathers and eggs. Specific observations were made with regard to species such as the barn owl, swallow and house martin; species that are often associated with buildings.

3.1.1.1 Weather Conditions

The weather on the day was mild and dry (11°C) with overcast skies (70% cloud cover) and a light breeze (Beaufort scale 2).

3.2 Limitations on Survey Data

As with any survey undertaken on a certain date, the data presented within this report provide information at a particular point in time and presents a 'snap-shot' of the ecological status of the site. Ecosystems and species behaviour/activity are dynamic and can change over time. Whilst this report presents a characterisation and evaluation of habitat and species status at the time of the study, it should not be taken as an exhaustive representation of the ecological status of the site either at present or into the future.

4 Results & Evaluation

Please refer to Appendix 1 for photographs of the buildings. Appendix 2 illustrates the location of the buildings and provides an aerial photograph of the site within the surrounding landscape.

4.1 Description of Buildings

4.1.1 Old Grove House

Old Grove House is a Grade II listed building that occupies a rectangle footprint. The building is of brick and flint construction, with a series of pitched roofs of clay tiles over a bitumen underfelt. Where the building has eaves, they are constructed from wood with an open design. The building has a flat roofed conservatory extension on the southern elevation that comprises glass and wooden walls and a bitumen felt roof.

The building has two loft spaces found above the central section of the building and the northern section of the building:

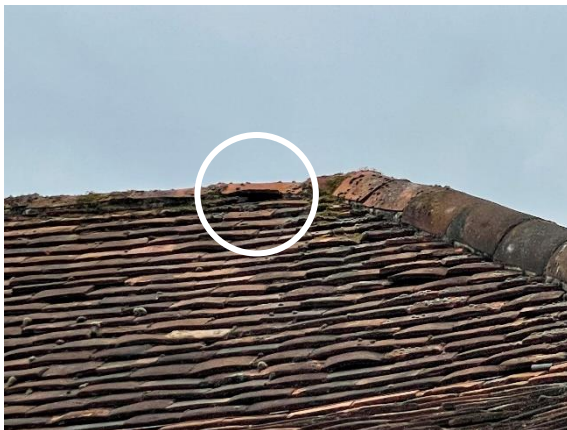
Northern Loft

The floor to ridge height is approximately 1m, with the loft space being supported by a wooden ridge beam and common rafters. The loft space is devoid of natural light. The bitumen and hessian under layering is in good condition.

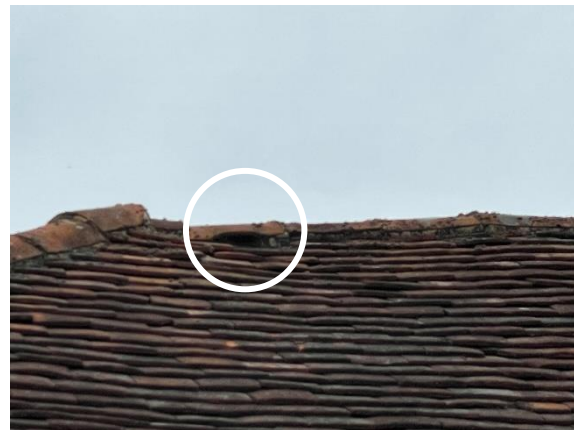
Central Loft

The floor to ridge height ranges from between 2.5m to 3m, with the loft space being supported by multiple wooden ridge beams and common rafters. The loft space has multiple windows that illuminate the interior spaces. The underlay consists of a mix of plastering and old bitumen felt that has been patched up by duct tape in broken areas. The underlay appears to be in good condition; however, they appear aged and have deteriorated because of this.

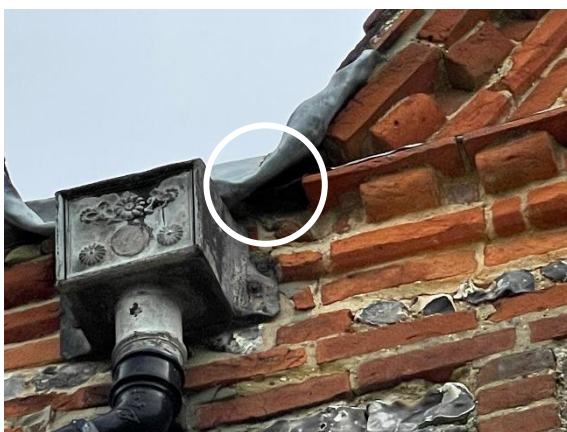
The external brick/flint walls are in an excellent state of repair with no gaps and crevices that could be used by roosting bats for shelter. The wooden boxed eaves are also in excellent state of repair with no gaps and crevices that could be used by roosting bats for shelter. The roof does, however, have multiple naturally occurring gaps under the clay tiles and a gap under the metal flashing on the western elevation. See Figure 1 for potential roost features of the building.



Gap under ridge tile on north-eastern aspect.



Gap under ridge tile on north-western aspect.



Gap under metal flashing on western elevation.



Missing tile on southern aspect.

Figure 1. Potential roost features of Old Grove House, indicated by white circles.

The building is assessed as having 'high' potential to offer shelter to roosting bats. This is due to the presence of two loft spaces, gaps under ridge and roofing tiles and a gap under metal flashing.

4.1.2 The Garage

Within the northern area of the site, there is a garage that occupies a rectangle footprint. The building is of brick construction, with a mono-pitched roof of clay tiles over a bitumen underfelt. The building has no eaves, and the guttering covers the wall-roof junction.

The building has two loft spaces found either side of the ridge beam, both being of similar construction.

The two loft spaces have floor to ridge heights of approximately 2m, with the loft spaces being supported by a wooden ridge beam and common rafters. The loft spaces are devoid of natural light. The bitumen and hessian under layering is in good condition.

The external brick walls are in an excellent state of repair with no gaps and crevices that could be used by roosting bats for shelter. The roof does, however, have multiple naturally occurring gaps under the clay tiles. See Figure 2 for potential roost features of the building.



Naturally occurring gaps under roofing tiles on western aspect.



Naturally occurring gaps under roofing tiles on western aspect.

Figure 2. Potential roost features of the garage.

The building is assessed as having 'moderate' potential to offer shelter to roosting bats. This is due to the presence of two loft spaces and gaps under roofing tiles.

4.2 Evidence of Bats

No bats were observed during the survey. However, evidence of bats was found within the central loft of Old Grove House in the form of bat droppings.

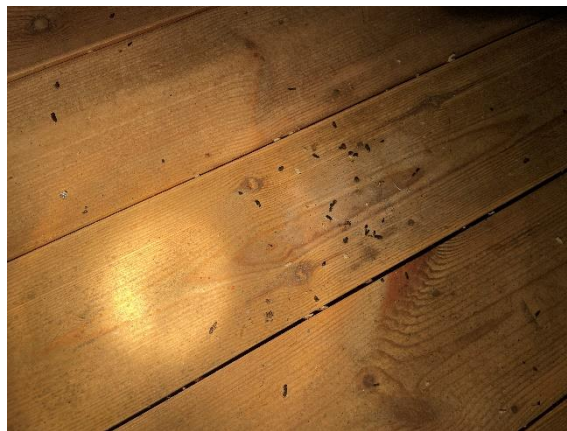
These droppings were present in a mix of age classes. Droppings were accumulated in three distinct piles beneath the ridgelines of the loft as well as being scattered throughout the entire loft beneath the ridge lines. The droppings were all of a size and form typical of a long-eared bat *Plecotus* species and pipistrelle *Pipistrellus* species. Please see Figure 3 for photos of bat droppings within the central loft.



Accumulation of droppings below northern ridge beam.



Accumulation of droppings below central ridge beam.



Scattering of droppings below eastern ridge beam.

Figure 3. Evidence of bat droppings within the central loft space of Old Grove House.

See Figure 4 for a plan of the roof space, showing the pattern and distribution of bat droppings.

No bat droppings were found on the exterior of the buildings or within the loft spaces of the garage.

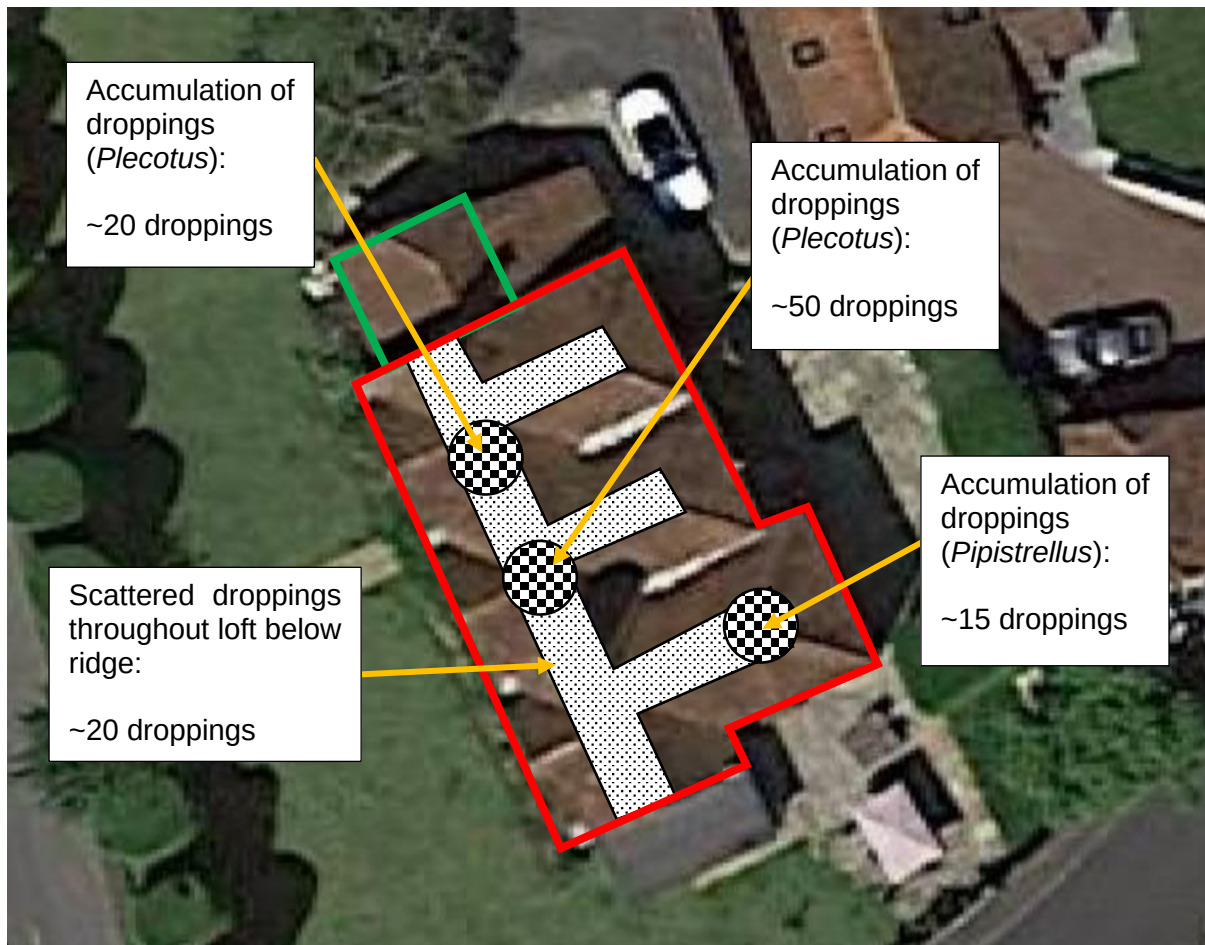


Figure 4. Distribution of bat droppings within the loft space of Old Grove House. The central loft space is indicated by a red outline and the northern loft space is indicated by a green outline.

4.3 Evidence of Birds

A total of two birds' nests were found within the buildings of the site. One bird nest was found at the eaves of the eastern elevation of Old Grove House and the other was found within the western loft space of the garage. Please see Figure 5 for photos of the nests.



Bird nest at the eastern eaves of Old Grove House.



Bird nest within the western loft space of the garage.

Figure 5. Bird nests within Old Grove House and the garage.

5 Discussion

5.1 Assessment of Results

5.1.1 Bats

Old Grove House is assessed as having 'high' potential (Collins, 2016) to offer shelter to roosting bats. Furthermore, evidence within the central loft indicates that bats are potentially using the loft space as a roost site.

The number of droppings currently indicates a number of bats, likely to be brown long-eared bats *Plecotus auritus* and pipistrelle *Pipistrellus* sp.

There is no evidence to indicate larger numbers of roosting bats or a roost type of higher conservation significance, such as a maternity colony or hibernation roost, however, the potential for large numbers of bats cannot be completely ruled out at this stage.

The garage is assessed as having 'moderate' potential (Collins, 2016) to offer shelter to roosting bats.

Bats will choose to roost within different locations within the summer and winter periods (see Figure 6), 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 buildings within the site are not considered to be suitable for hibernation due to the fact that they are unlikely to maintain the constantly cool and humid conditions which are required by overwintering bats.

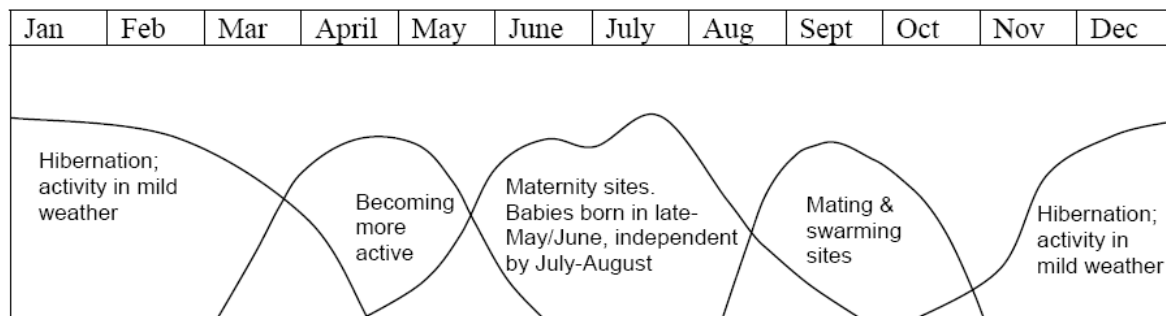


Figure 6. Diagram showing the yearly life cycle of a bat. Taken from the Bat Mitigation Guidelines by Mitchell-Jones (2004).

5.1.2 Birds

A total of two birds' nests were found within the buildings of the site. One bird nest was found at the eaves of the eastern elevation of Old Grove House and the other was found within the western loft space of the garage. Both of these nests were considered to be inactive at the time of survey.

6 Discussion

6.1 Legislative Guidance

6.1.1 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 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 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'.

6.1.2 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.

6.2 Potential Impacts

6.2.1 Bats

The proposals are for re-roofing of Old Grove House and the garage. This may result in impacts on bats and places that they use for shelter through 'destruction' of any potential roosts. If bats are present at the time of the works, there is also the potential for bats to be disturbed by the works.

Without further survey work, the exact level of impact on bats cannot be determined with confidence. Further surveys are recommended to gather further information on bats, and whether the proposals for an extension are likely to affect the bats and their roost sites (places of shelter/protection).

External lighting can have an impact on bats by affecting their activity and behaviour. In that certain species of bat have been shown to be attracted to mercury vapour lamps which emit light over a very broad-spectrum including UV light to which insects are particularly sensitive.

Furthermore, insects can be attracted in large numbers to mercury lamps and so can bats of the genera *Nyctalus* and *Pipistrellus*, including noctules *N. noctula* and common pipistrelles *P. pipistrellus* (Rydell and Racey, 1993). Lighting has shown to have an opposite effect on certain other species, such as the lesser horseshoe bat *Rhinolophus hipposideros*, which have been shown to avoid areas of artificial light (Stone *et al.* 2009).

6.2.2 Birds

Removal of the identified bird nests during the breeding bird season (March to August, inclusive) could have impacts on nesting birds through the damage or destruction of nests and the killing and injury of young/eggs.

7 Recommendations

7.1 Bats

7.1.1 Bat Activity Surveys

7.1.1.1 Old Grove House

Best practice guidance published by the Bat Conservation Trust (Collins, 2016) recommends that where evidence of roosting bats has been found, or a building has features that are potentially suitable for roosting, further surveys should be conducted to '*assess the importance of the roost and the potential significance of any impacts on it*'.

Where evidence has been found, current guidance states that Roost Characterisation surveys are required. The level of survey effort for Roost Characterisation surveys is determined on a case-by-case basis, however, a total of three bat activity (dusk/dawn) surveys would appear to be appropriate in this instance.

Good practice guidance (Collins, 2016) states that bat activity surveys should be undertaken within the bat activity period, May to August inclusive. The bat activity surveys will aim to

confirm the presence of a bat roost, the species of bat, the type of roost (e.g. non-breeding, transient, maternity), the number of bats and the routes by which bats are accessing the building/loft. The surveys will also aim to look for any crevice dwelling bats such as pipistrelles, which may be roosting elsewhere on the buildings' exterior, such as under hanging tiles.

It is considered that four surveyors will be required to provide adequate coverage of the building.

The recommendations are in line with best practice guidelines (Collins, 2016) and would also be necessary to inform a European Protected Species (bat) Licence application to Natural England, if one is required.

7.1.1.2 The Garage

Best practice guidance published by the Bat Conservation Trust (Collins, 2016) recommends that where a building has features that are potentially suitable for roosting, further surveys should be conducted to *"determine presence/likely absence and to ascertain the features and characteristics of the roost (for example size, perching points, aspect, orientation, temperature, humidity, lighting) and the surrounding area"*. Information from the surveys will be used to *"assess the potential impacts of the proposed development activity and design suitable mitigation and monitoring strategies"*.

The guidelines recommend two bat activity survey (at dusk and dawn) are undertaken where a building has 'moderate' roost potential, as in this case for the garage. The bat activity survey should cover the season when bats are active, during the period May to August inclusive. It is considered that two surveyors may be required to provide adequate visual coverage of the building.

If the survey confirms the presence of roosting bats, one further activity surveys will be required to fully characterise the roost/s, with the aim of confirming the species of bat, the type of roost (e.g. non-breeding, transient, day roost etc.) and the number of bats.

The recommendations are in line with best practice guidelines (Collins, 2016) and would also be necessary to inform a European Protected Species (bat) Licence application to Natural England, if one is required.

7.1.2 Mitigation Strategy

The recommended bat activity surveys will inform a Bat Mitigation Strategy which will aim to avoid direct impacts on bats, such as disturbance, as well as retaining bat roosts within the building, in order to maintain the favourable conservation status of bat species.

7.1.3 Enhancement Opportunities

There may be opportunities for enhancement for bats including the installation of bat boxes on Old Grove House. Enhancement measures will be considered in more detail once the bat activity surveys have been carried out.

7.2 Birds

7.2.1 Timings

If needed, the clearance of the two identified bird nests should be undertaken outside of the bird breeding period, avoiding March to August inclusive. If this is not possible, the buildings should be checked for active nests prior to removal to confirm the absence of nesting birds. This will avoid impacts of damage and destruction to active birds' nests.

7.2.2 Enhancement Opportunities

The erection of bird nesting boxes is recommended to provide suitable nest sites for species within the local area, as nest boxes can be excellent substitutes for the nesting potential of trees. Over 60 species are known to adopt nest boxes including blue tits, great tits, starlings, robins and sparrows.

The location and nature of the nest box depends on the species it is designed for; boxes for tits, sparrows or starlings should be fixed two to four metres up a tree or a wall; open-fronted boxes for robins and wrens need to be low down, below 2m, and well-hidden in vegetation. Unless there are trees or buildings which shade the box during the day, boxes should be faced between north and east, thus avoiding strong sunlight and the wettest winds. The boxes recommended can be erected on the exterior of buildings and trees.

Recommended boxes are:

- 1B Schwegler Nest Box
- Schwegler Avianex Box

8 References

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9 Appendix 1. Photographs



Photograph 1. The northern elevation of Old Grove House.



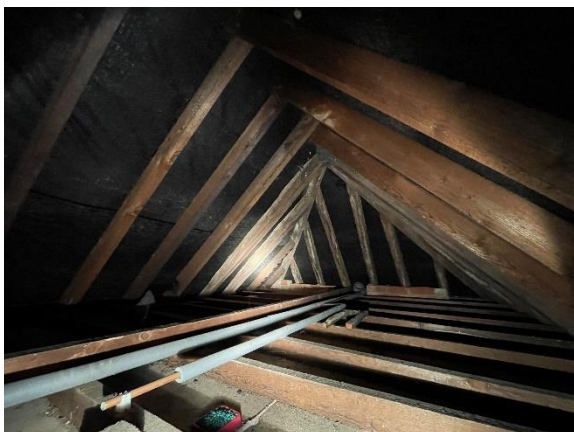
Photograph 2. The western elevation of Old Grove House.



Photograph 3. The southern elevation of Old Grove House.



Photograph 4. The eastern elevation of Old Grove House.



Photograph 5. The northern loft space of Old Grove House.



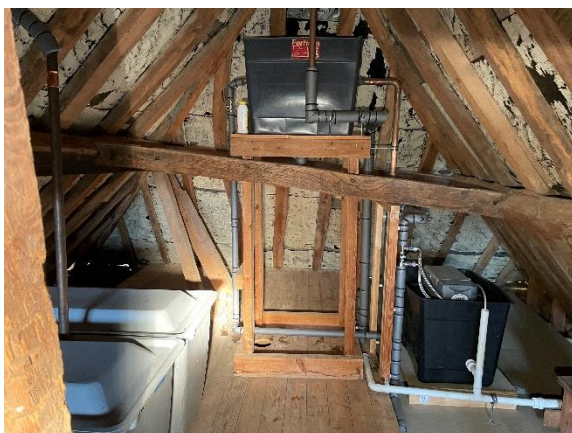
Photograph 6. The central loft space of Old Grove House.



Photograph 7. The central loft space of Old Grove House.



Photograph 8. The central loft space of Old Grove House.



Photograph 9. The central loft space of Old Grove House.



Photograph 10. The central loft space of Old Grove House.



Photograph 11. The western elevation of the garage.



Photograph 12. The eastern elevation of the garage.



Photograph 13. The western loft space within the garage.



Photograph 14. The eastern loft space within the garage.

10 Appendix 2. Site Location Plans



An aerial photograph showing the location of the buildings at Old Grove House (outlined in red). *Source: Google Satellite*



An Ordnance Survey map showing the location of buildings at Old Grove House (outlined in red) within the wider local area. *Source: OSM Standard*