



**Moorings, Upper Warren Avenue,
Caversham, Reading, RG4 7EJ**

Protected Species Survey Report

March 2023

on behalf of Mr & Mrs Jayne-Coupe

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Client	Mr & Mrs Jayne-Coupe <i>care of</i> Fineline Architects Ltd
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1 Executive Summary

Site Details	Moorings is a detached dwelling located to north of Upper Warren Avenue, to the west of the Caversham, a suburb of Reading in Berkshire. The approximate Ordnance Survey grid reference for the property is SU 699 752.
Proposals	There is a proposal for the demolition of the dwelling and the two outbuildings. The dwelling will be replaced with a dwelling within a similar footprint and the northern outbuilding will be replaced with another outbuilding.
Methodology	An initial bat survey and preliminary roost assessment was undertaken on the 24 th March 2022 and 23 rd February 2023 by Reuben Hayden MSc. A badger survey was also undertaken on the 23 rd February 2023 by Reuben Hayden MSc.
Evaluation	• No bats or evidence of bats were found during the survey. • All buildings are assessed as having 'negligible' bat roost potential (Collins, 2016). • All trees are assessed as having 'negligible' bat roost potential (Collins, 2016). • No evidence of nesting birds was noted in association with the buildings. • The trees offer potential nesting habitat to breeding birds. • Foraging and commuting badgers are considered likely within the local area.
Impact Assessment	• 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 conversion works to proceed. • If nesting birds are present within woody vegetation at the time of removal, there is the potential for the destruction of active birds' nests and the killing/injury of eggs/young. • Without mitigation measures, there is a possibility that badgers are at risk of injury and trapping due to inadvertent pitfall hazards.
Recommendations	Recommendations are made with regard to careful work practices and species specific enhancement in the form of bat and bird boxes.

2 Introduction

2.1 Site Description & Context

Moorings is a detached dwelling located to north of Upper Warren Avenue, to the west of the Caversham, a suburb of Reading in Berkshire. The approximate Ordnance Survey grid reference for the property is SU 699 752.

The Moorings is a single-storey dwelling with brick walls and a pitched roof of concrete tiles. The northern section of the dwelling comprises a flat roof covered within bitumen roofing felt. A previously converted loft space covers the entire footprint of the pitched roof section. There are two single-storey outbuildings found to the north and north-east of the dwelling.

Moorings is located on the outskirts of the suburb of Caversham, being surrounded in all directions by dwellings and gardens. The wider landscape is characterised by residential development associated with the suburb of Caversham. It is of note that the River Thames is located approximately 280m south of the dwelling and offers foraging and commuting habitats for bats.

2.2 Proposed Works

There is a proposal for the demolition of the dwelling and the two outbuildings. The dwelling will be replaced with a dwelling within a similar footprint and the northern outbuilding will be replaced with another outbuilding.

Please see Appendix 3 for an existing and proposed plan.

2.3 Aims of Study

The aims of this study are to survey the buildings and trees for bats and/or evidence of bats, and other protected species including nesting birds. The study assesses the overall potential of the buildings and trees to support roosting bats and other protected species. The report discusses the potential impacts of the proposed works on bats, 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. European Protected Species (Bat) licences are also discussed in light of the impact assessment.

A further aim is to assess the site for badgers and/or evidence of badgers and provide a discussion in light of the legal protection afforded to this species under the Protection of Badgers Act 1992.

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.

2.5 Badger Ecology

Badgers live in family or social groups of related mature and young adults and cubs, often referred to as 'clans'. Badgers live in an underground home called a sett which comprises a network of subterranean tunnels and chambers. Their home ranges consist of feeding grounds and one or more setts. Setts are usually situated within undisturbed areas where there is good vegetation cover, such as small woodlands, areas of dense scrub or copses.

A simple sett is made up of a single tunnel with a sleeping chamber at the end. However, most setts have several entrance holes with a series of tunnels which link up with each other underground. Well-established main setts can have many entrances, some in use and some disused, with large and substantial spoil heaps outside the entrances from years of digging and removal of soil. Badgers tend to create setts in soils which are friable and easy to excavate. Sandy soils tend to be favoured as they are easy to dig and stay relatively dry. Slopes and banks are also favourite burrowing sites. Badger setts have been categorised into four broad types, depending on their size and use:

- Main setts
- Annex setts
- Subsidiary setts
- Outlier setts

Main Setts

Main setts tend to be where the badger clan breeds and they can be made up of a large number of entrances with significant spoil heaps. Bedding (vegetation, straw, hay etc.) is often present outside the sett entrances, indicating the presence of breeding chambers underground. The entrances are usually linked by well-used paths which lead to and from the sett and between sett entrances. Main setts can be used for many years and are often made up of a number of active and inactive entrances.

Annex Setts

Annex setts tend to be close to the main sett (usually less than 100m away) and are often strongly connected to the main sett by one or more obvious, well-worn paths. The sett can be linked by paths overground, as well as tunnels underground. They tend to consist of a small number of entrances (less than the main sett) and are not necessarily in use all the time, even if the main sett is very active.

Subsidiary Setts

Subsidiary setts can often be made up of a single hole, or a very small number of entrances. They tend to be further away from the main sett (>50-100m), although are often linked to the main sett (and other subsidiary setts) by obvious trackways. Subsidiary setts can be used infrequently, becoming active according to the season or according to the availability of a local food resource.

Outlier Setts

Outlier setts usually comprise only one or two entrances and have little spoil or other signs of activity. They tend to be used sporadically and often have no pathways or tracks leading to the entrances or linking them with other setts.

It should be noted that these categories are based on a very generalised model of badger activity and do not always reflect the nature of setts in the wild. In areas of low badger density, main setts may be relatively small, with only a few holes. Main setts do not always have annexes and in areas of poor badger habitat, a clan may have a very large home range with a single associated main sett. These factors must be taken into account when classifying a sett, and it is important to have an overall view of all the setts in an area before making a decision on the status of each sett.

Badger family groups usually remain loyal to their main setts unless they are frequently disturbed. Opening up new setts and maintaining and extending old setts is a constant occupation, with bursts of digging activity at certain times of the year. Activity and use of setts can change steadily over the years, or very quickly in response to short-term changes such as flooding or a food crop ripening nearby. In general, badgers are creatures of habit. They tend to use the same pathways to foraging areas and will continue to try to do so despite any obstacles that are placed in their way. New fences may be broken down and new roads crossed despite any difficulty or danger presented.

Badgers mate throughout the year but pregnancy starts around the end of November, or early December, when the previously fertilised embryos implant within the sow's uterus. Often only the most dominant sow in a family group will produce cubs, usually two or three per litter. These are born underground, usually towards the end of January or beginning of February, emerging for the first time after about 8 weeks. The cubs remain dependent upon the sow for a further few weeks while they are weaned and learn how to fend for themselves.

3 Methodology

3.1 Desk Study

Aerial photography interpretation is used to place the site into an ecological context and to provide information on the nature of the habitats beyond the site boundary. The information garnered is used to put the site into an ecological context. Internet resources integrated as part of the desk study include:

- Multi-Agency Geographic Information for the Countryside (www.magic.gov.uk) website
- Google Earth - www.earth.google.co.uk
- Bing Maps - www.bing.com/maps

3.2 Field Surveys

3.2.1 Initial Bat Survey & Preliminary Roost Assessment (PRA)

An Initial Bat Survey and Preliminary Bat Roost Assessment was undertaken on the 24th March 2022 and 23rd February 2023. The surveys were undertaken by professional ecologist Reuben Hayden MSc. Mr Hayden holds a licence from Natural England to survey for bats within all counties of England (Licence No. Level 1 2021-54302-CLS-CLS) and has over three 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 and close-focusing binoculars in order to look for bats and/or evidence of bats and to assess the potential of the buildings to support roosting bats.

The buildings within the site 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 buildings and trees within the site were assessed for their potential to offer shelter to roosting bats, in accordance with best practice (Collins, 2016; see Table 1).

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 and trees for bats (Collins, 2016):

Table 1. Criteria for the assessment of buildings and trees for roosting 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).
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 preliminary roost assessment, 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 and trees 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 house sparrow and house martin; species that are often associated with buildings.

3.2.2 Badger Survey

The site was also surveyed for evidence of badger activity in accordance with standard methodology (Harris, Creswell & Jeffries, 1989) on the 23rd February 2023 by professional ecologist Reuben Hayden MSc.

The survey involved a walkover of the site and surrounding areas to look for active and inactive badger sett entrances and evidence of badger activity including trackways, footprints, latrines/dung pits, badger hairs and foraging scrapes.

3.3 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 present 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.

A full desk study (through the local records centre) was not considered necessary for this study. This is due to the nature of the proposals, which are of small scale and will only affect the existing dwelling and outbuildings. Obtaining species records, is not considered to make a significant difference to the results of the Protected Species Survey Report or the evaluation of habitats within the site.

4 Results

Please refer to Appendix 1 for photographs of the buildings. Location plans can be found within Appendix 2.

4.1 Ecological Context

4.1.1 Sites of Nature Conservation Importance

There are no statutory sites of nature conservation importance within a 1km radius of the site.

There are no sites of international conservation importance within a 5km radius of the site.

4.2 Bats

4.2.1 Buildings

4.2.1.1 Dwelling

Moorings is a single-storey detached dwelling with brick walls with external render on the southern elevation and a pitched roof of concrete tiles. The northern section of the dwelling has a flat roof covered with bitumen roofing felt. Where the dwelling has boxed eaves, they are constructed from wood.

The dwelling has a previously converted loft space that covers the central pitched section of the dwelling. The loft space appears to have been converted, with there being four divided sections. The loft has an approximate floor to ridge height of 2.5m and has a plasterboard covering on all the walls which have also been wallpapered. A dormer window is present on the eastern elevation as well as a skylight on the northern elevation, which illuminate the loft space.

The external brick/render walls, wooden boxed eaves and the flat roofed section of bitumen roofing felt are solid and intact. They are in a good state of repair, with no gaps, cracks or crevices noted during the survey. The majority of concrete tiles on the pitched roof section are in a good state of repair, with only one tile on the southern elevation being slightly raised. This feature is considered to be sub-optimal and exposed, not creating any meaningful shelter. Therefore, it is unlikely to be used by roosting bats. Other than this, there are no slipped, missing or broken roof tiles or obvious gaps under ridge tiles.

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 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 dwelling is not considered to be suitable for hibernation due to the fact that it exhibits no features that could be utilised by hibernating bats and is unlikely to maintain the constantly cool and humid conditions which are required by overwintering bats.

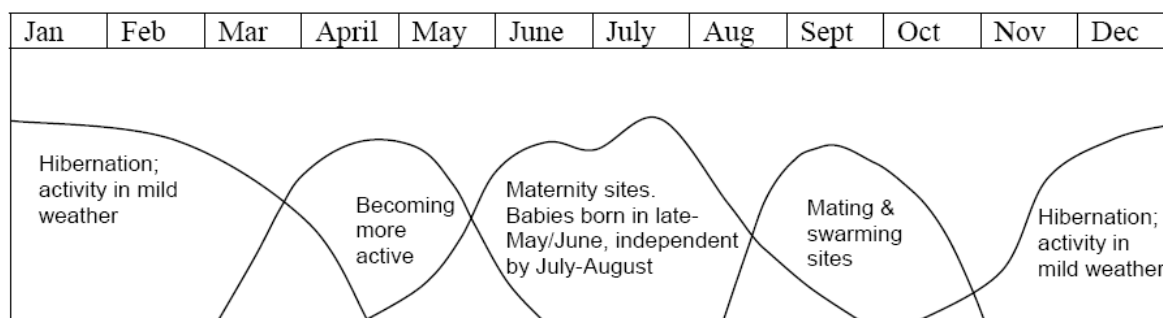


Figure 1. Diagram showing the yearly life cycle of a bat. Taken from the Bat Mitigation Guidelines by Mitchell-Jones (2004).

Given the above discussion, the building is assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats.

4.2.1.2 Outbuilding 1

To the north-east of the dwelling, there is an outbuilding with a rectangular footprint. The walls are constructed from brick and the building has a mono-pitched roof of concrete tiles. The building has no eaves but has wooden barge boarding on the western and eastern elevations.

The building has no loft spaces and the interior space is used for storage, being illuminated by natural light through windows on the western and northern elevations.

The external brick, wooden barge boarding and tiled roof are all in excellent repair being intact and tightly fitted. The building offers no gaps, cracks or crevices that could be utilised by roosting bats.

The building is not considered to be suitable for hibernation due to the fact that it exhibits no features that could be utilised by hibernating bats and is unlikely to maintain the constantly cool and humid conditions which are required by overwintering bats.

Given the above discussion, the building is assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats.

4.2.1.3 Outbuilding 2

Within the northern area of the site, there is an outbuilding with a square footprint. The walls are constructed from wood and the building has a flat roof of bitumen felt. The building has no eaves.

The building has no loft spaces and the interior space is used for storage, being illuminated by natural light through windows on the western, southern and eastern elevations.

The building is of very simple construction and offers no gaps, cracks or crevices that could be utilised by roosting bats.

The building is not considered to be suitable for hibernation due to the fact that it exhibits no features that could be utilised by hibernating bats and is unlikely to maintain the constantly cool and humid conditions which are required by overwintering bats.

Given the above discussion, the building is assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats.

4.2.2 Trees

All trees within the site are assessed as having 'negligible' potential (Collins, 2016) to offer shelter to roosting bats. This is due to the lack of potential roost features such as crevices and gaps in the branches/trunks of the trees.

4.2.3 Evidence of Bats

No bats or evidence of bats were found during the initial bat survey.

In particular, no bat droppings were found within the loft of the dwelling, or in association with the limited external features.

4.3 Birds

No evidence of nesting birds was noted in the interior or on the exterior of the buildings.

In particular, there is no evidence of house martins, and the buildings are unsuitable for swallows and barn owls.

The trees within the site offer potential nesting opportunities to breeding birds.

4.4 Badgers

It is of note that mammal tracks were found within the northern section of the site, as well as snuff marks in the western area of the site, however, no evidence of badgers such as setts, faeces or dung pits were noted within the site or in the immediate surroundings. It is considered likely that mammals such as badgers are found within the surrounding landscape and may use the site for foraging or as a movement route.

Badgers are not a rare species and they are not a priority for conservation action, with their population sizes increasing in certain areas. However, the species is protected from persecution and ill-treatment through the Protection of Badgers Act 1992 (see Section 5.1), with this protection extending to their setts in 'current use'.

5 Discussion

5.1 Legislative Guidance

5.1.1 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'.

5.1.2 *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.

5.1.3 *Badgers*

Badgers and their setts are protected under the Protection of Badgers Act 1992, which makes it illegal to kill, injure or take badgers or to interfere with a badger sett. The term 'badger sett' is normally understood to mean the system of tunnels and chambers, in which badgers live, and their entrances and immediate surrounds. Under the Act it is an offence to:

- wilfully kill, injure, take or attempt to kill, injure or take a badger
- cruelly ill-treat a badger
- interfere with a badger sett by:

- damaging a sett or any part thereof;
- destroying a sett;
- obstructing access to a sett;
- causing a dog to enter a sett; and
- disturbing a badger while occupying a sett.

The Act specifically defines a sett as “any structure or place which displays signs indicating current use by a badger”. Interference with a sett includes blocking tunnels, infilling of the sett and/or damaging the sett in any way.

There is, however, provision within the legislation to permit activities affecting badgers or their setts where there is suitable justification and a problem cannot be resolved by alternative means. Such activities are authorised under licences issued by Natural England. Licences can be issued with regard to development as well as damage to property.

5.2 Impact Assessment

5.2.1 Sites of Nature Conservation Importance

There are no foreseeable direct or indirect impacts on sites of nature conservation importance as a result of the proposals. This is due to the distance of such sites from the study site and the nature of the proposed development.

5.2.2 Bats

There is no evidence to indicate that the buildings or trees within the site are being used as a place of shelter or protection by roosting bats, and all buildings and trees are assessed as having ‘negligible’ roosting potential for bats (Collins, 2016). Roosting bats are considered to be absent from the site.

As a result of this conclusion, the proposed works will not result in any significant impacts on bats or the places that bats use for breeding, shelter and/or protection (roosts) and no specific compensation measures are considered necessary (Mitchell-Jones, 2004).

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.

External lighting can have an impact on bats by affecting their activity and behaviour. 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.

A lighting layout for the site can be seen in Appendix 4. Given that the proposed lighting layout includes only downward facing lighting for security and safety purposes, there are no predicted impacts on bats with regards to lighting.

5.2.3 Birds

Removal of any trees or woody vegetation, during the bird breeding period has the potential to result in the damage or destruction of active birds’ nests, and the possible killing/injury of young or eggs.

5.2.4 Badgers

Without mitigation measures, there is a possibility that badgers are at risk of injury and trapping due to inadvertent pitfall hazards.

6 Recommendations

6.1 Further Surveys

No further surveys are considered necessary.

6.2 Bats

6.2.1 Timing

There are no constraints with regard to the timing of works.

6.2.2 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 as roost sites 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 qualified ecologist.

6.2.3 Enhancement

Although it is not necessary from a legal perspective, it is recommended that a bat box is erected on a mature tree within the garden. This will offer a roosting opportunity to bats within the local area and will provide an enhancement to the existing situation, in line with the NPPF.

Bat boxes can be obtained pre-fabricated in a number of different designs. A solid oak-built, double-chambered box or a Schwegler 2F woodcrete bat box are recommended for mounting on trees and these should be installed at least 4m above ground level and on a variety of aspects, although southerly aspects should also be favoured as these will provide a warmer microclimate within the boxes.

6.3 Birds

6.3.1 Timing

It is recommended that the removal trees or other woody vegetation is undertaken outside of the breeding bird period, avoiding March to August, inclusive. If this is not possible, the vegetation 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.

6.3.2 Enhancement

The erection of bird nesting boxes is recommended in order 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. It is recommended that bird boxes are erected on mature trees within the garden.

Recommended boxes are:

- 1B Schwegler Nest Box

- Schwegler Avianex Box

6.4 Badgers

Badgers passing through the site during the construction phase of development are at risk of injury and trapping due to inadvertent pitfall hazards. This is particularly the case when foundations are being excavated. It is therefore recommended that no ground works take place outside of daylight hours and at night any pits on site are appropriately covered over/fenced off, or that a ramp is put in place via which badgers can escape.

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8 Appendix 1. Photographs



Photograph 1. The southern elevation of the dwelling.



Photograph 2. The eastern elevation of the dwelling.



Photograph 3. the northern elevation of the dwelling.



Photograph 4. The western elevation of the dwelling.



Photograph 5. The western section of the loft space.



Photograph 6. The central section of the loft space.



Photograph 7. The central section of the loft space.



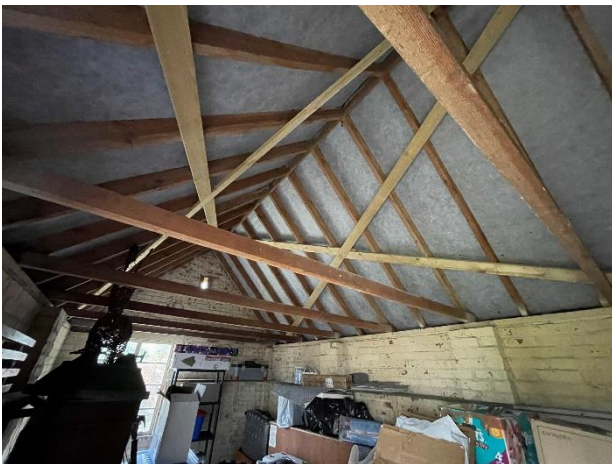
Photograph 8. The eastern section of the loft space.



Photograph 9. Outbuilding 1 viewed from the south-west.



Photograph 10. Outbuilding 1 viewed from the north-west.



Photograph 11. The interior space of Outbuilding 1.

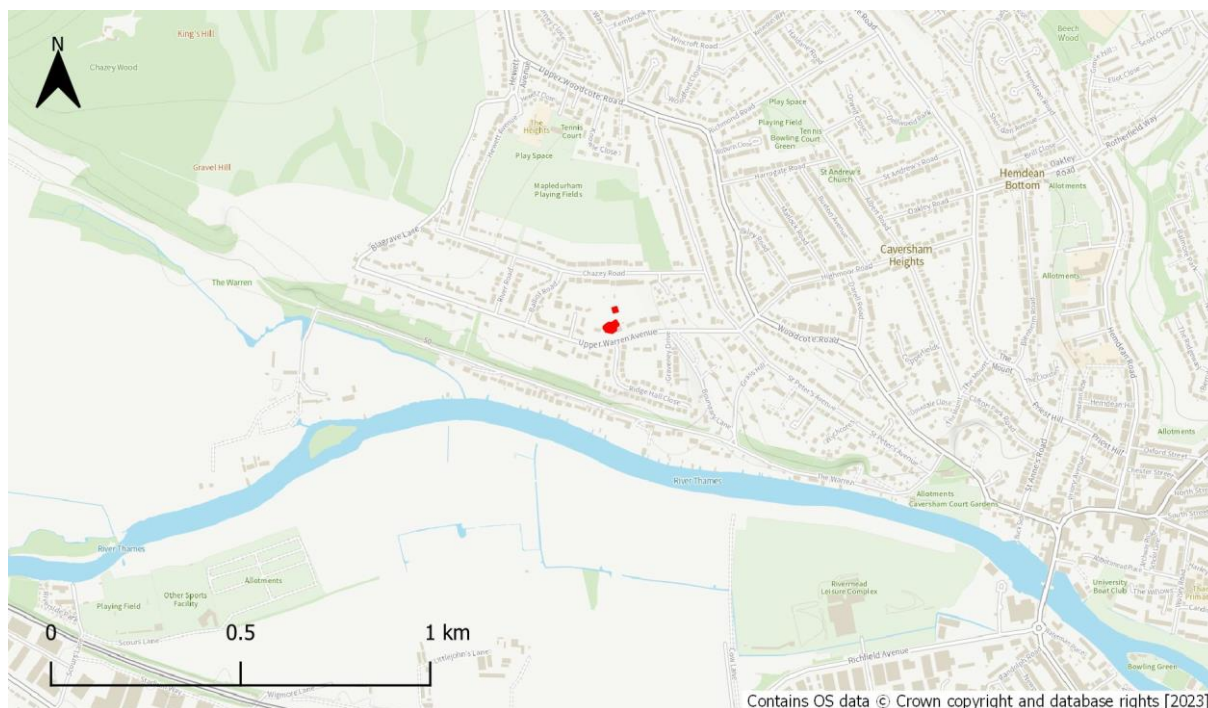


Photograph 12. Outbuilding 2 viewed from the south.

9 Appendix 2. Site Location Plans

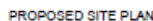
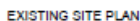


An aerial photograph showing the location of the buildings at Moorings (outlined in red). *Source: Google Satellite*



Ordnance Survey map showing the approximate location of the buildings at Moorings (indicated by the red outline) within the wider local area. *Source: OSM Standard*

10 Appendix 3. Existing & Proposed Plan



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Section	Issue Date	Dir.	Ch.
A. THREE-D AND SURFACE PAGES TO CONSTRUCT SURFACE AND SUBSURFACE	17.11.20	GA	

GENERAL NOTES - PLANS & ELEVATIONS

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL GENERAL ARRANGEMENT, PROJECT DETAILS, SPECIFICATIONS AND CONDITIONS DRAWINGS.
2. UNLESS NOTED OTHERWISE, ALL DIMENSIONS ARE TO STRUCTURAL FACE UNLESS NOTED OTHERWISE.
3. ABBREVIATIONS:
- | | |
|-----|-----------------|
| EXP | EXPOSED UNIFORM |
| OR | ORANGE POINT |
| TRP | TRAP WATER PIPE |
| NS | NOISE SHIELDING |
4. ALL SUBMITTALS OF WORK TO BE INSTALLED, ACCORDING TO THE APPROPRIATE MANUFACTURER'S INSTRUCTIONS.

PLANNING

Project
MOORINGS, UPPER WARREN AVE
READING, RG4 7EJ

EXISTING AND PROPOSED SITE PLAN

Date	Scale	Drawn by	Checked
JULY 2022	1:200 @ A1	CA	KB
Project No.	Drawing No.		Scale
22-103	PL-1212		A

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Architects

16. www.fishbase.org

11 Appendix 4. Lighting Layout

