



40 West End, Minchinhampton, Stroud, GL6 9JA

## Preliminary Bat Roost Assessment



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The results of the survey and assessment work undertaken by All Ecology are representative at the time of surveying.

Every endeavour has been made to identify the presence of protected species on site, where this falls within the agreed scope of works.

The flora and fauna detailed within this report are those noted during the field survey and from anecdotal evidence. It should not be viewed as a complete list of flora and fauna species that may frequent or exist on site at other times of the year.

Up to date standard methodologies have been used, which are accepted by Natural England and other statutory conservation bodies. No responsibility will be accepted where these methodologies fail to identify all species on-site.

All Ecology cannot take responsibility where Government, national bodies or industry subsequently modify standards.

All Ecology cannot accept responsibility for data collected from third parties.

Reference to sections or particular paragraphs of this document taken out of context may lead to misrepresentation.

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# 1.0 Introduction

## Background

1.1 In August 2023, All Ecology was commissioned to undertake a Preliminary Bat Roost Assessment of a house at 40 West End, Minchinhampton, Stroud, GL6 9JA. The house is the subject of a planning application to permit a rear extension, which will require changes to the roof.

## Objectives and Aim

1.2 The main objectives and aim of the surveys were to establish the following:

Presence/absence of bat roosts.

Status of roosts if present.

Whether additional surveys are required.

Whether a European Protected Species (EPS) licence is required to ensure legal compliance.

Which type of mitigation measures would need to be employed.

## Site Location

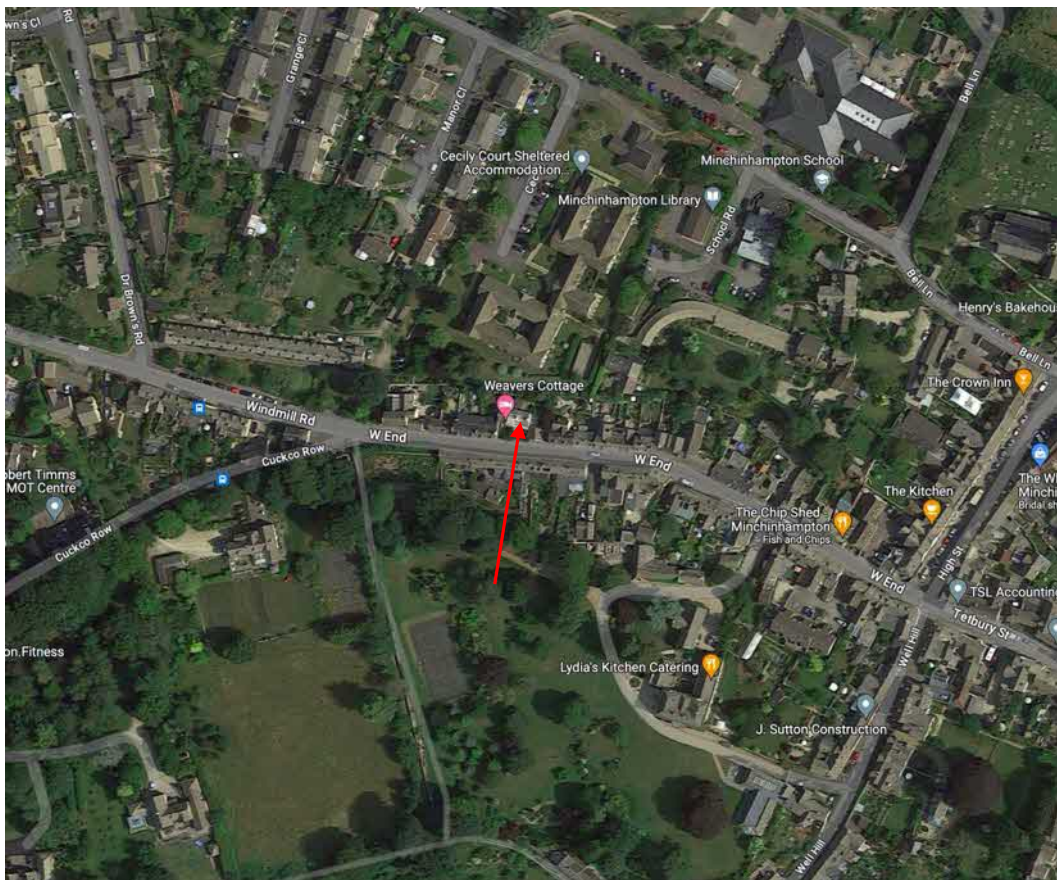


Figure 1: Site location plan.

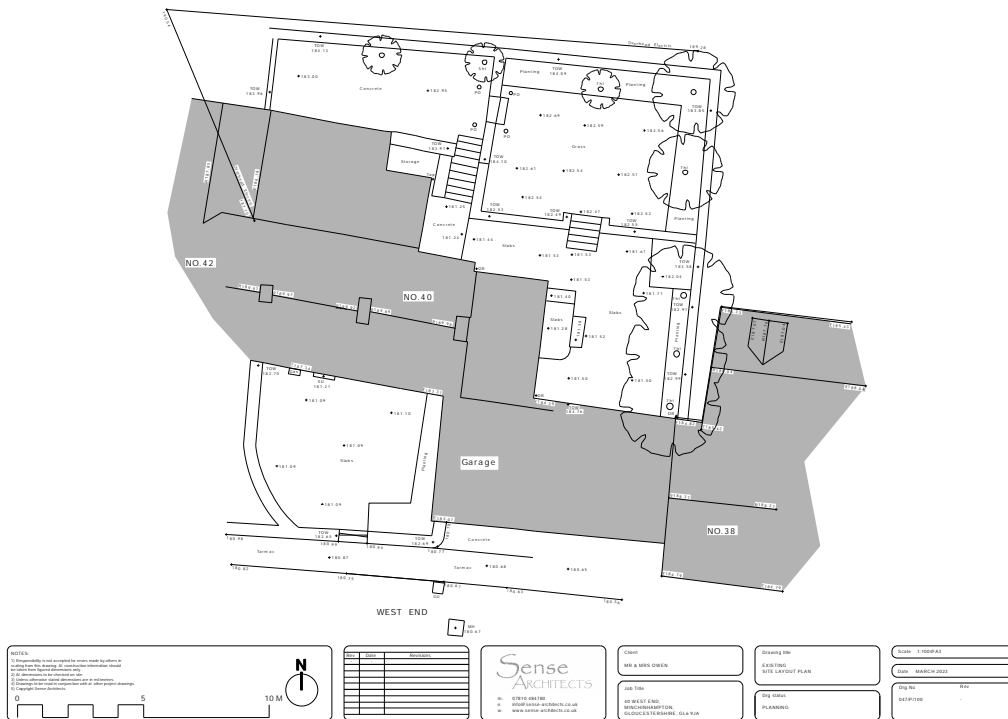


Figure 2: Existing roof plan.

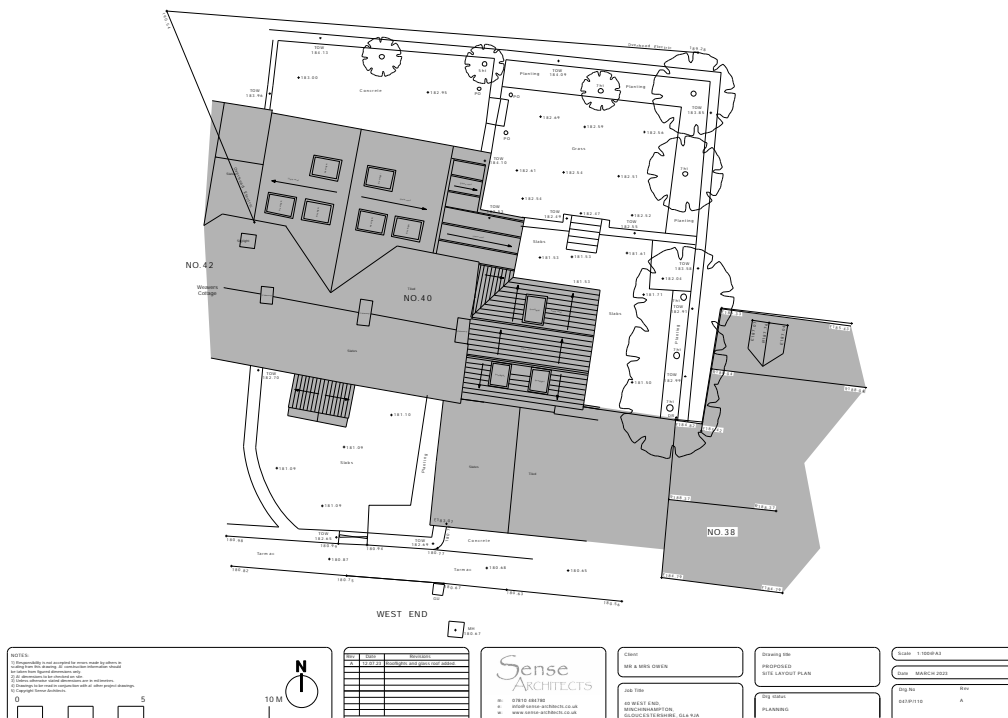


Figure 3: Proposed roof plan.

## 2.0 Legislation and Status

### Bats

- 2.1 All species of bat are listed on Schedule 5 of The Wildlife and Countryside Act (1981) and as such receive protection under Section 9 of this Act. This has been amended several times, most recently by the Countryside and Rights of Way Act 2000, which added 'or recklessly' to Section 9(4) (a) and (b). In summary, it is a criminal offence to:

Intentionally kill, injure or take a wild bat.

Be in possession of, or control, any live or dead wild bat or part of, or anything derived from a wild bat.

Intentionally or recklessly damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection.

Intentionally or recklessly disturb any wild bat whilst it is occupying a structure or place that it uses for shelter or protection.

Transport for sale or exchange, or offer for sale or exchange, a live or dead bat or any part of a bat.

- 2.2 The Conservation of Habitats and Species Regulations 2010, consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994, in respect of England and Wales. It is an offence to possess, sell or offer or transport for sale any European species of bat or any part derived from such a species. These Regulations also remove the 'incidental result defence'. In other words, it is no longer a defence to show that the killing, capture or disturbance of a species covered by the Regulations or the destruction or damage of their breeding sites or resting places was the incidental and unavoidable result of a lawful activity. Natural England can grant European Protected Species (EPS) licenses in respect of development to permit activities that would otherwise be unlawful.

- 2.3 Under Section 40 of the Natural Environment and Rural Communities Act (2006) public bodies, including Local and Regional Planning Authorities have a duty to 'have regard' to the conservation of biodiversity in England when carrying out their normal functions, which includes consideration of planning applications. In compliance with Section 41 of the Act, the Secretary of State has published a list of species considered to be of principal importance for conserving biodiversity in England. This is known as The England Biodiversity List, all of which make up the UK BAP Priority Species. This list forms the basis of the UK Biodiversity Framework, and in England, Biodiversity 2020: A strategy for England's wildlife and ecosystem services (Defra, 2011). Regional Planning Bodies and Local Planning Authorities will use it to identify the species that should be afforded priority when applying the requirements of the National Planning Policy Framework (NPPF) to maintain, restore and enhance species and habitats.

- 2.4 Seven bat species are NERC Priority Species (JNCC, 2007). These are:

Barbastelle *Barbastella barbastellus*

Bechstein's *Myotis bechsteinii*

Noctule *Nyctalus noctula*

Soprano Pipistrelle *Pipistrellus pygmaeus*

Brown Long-eared *Plecotus auritus*

Greater Horseshoe *Rhinolophus ferrumequinum*

Lesser Horseshoe *Rhinolophus hipposideros*

- 2.5 Greater Horseshoe, Lesser Horseshoe, Barbastelle and Bechstein's, are afforded greater protection under European legislation, being listed under Annex II of the EC Habitats Directive which lists species whose conservation requires the designation of Special Areas of Conservation (SACs).



## 3.0 Methodology

### Personnel

- 3.1 The survey was carried out by [REDACTED] BSc Hons MCIEEM, an ecologist with over 16 years' experience working as a consultant. J [REDACTED] has extensive experience of managing environmental contracts, and particular experience in surveying, assessment and mitigation for rare and protected species. He has considerable knowledge of the development and planning process including Ecological Impact Assessments, sustainable ecological design and he has completed ecology chapters of Environmental Statements. [REDACTED] holds a number of protected species licences including bats (all species, all counties, Class Licence Registration No. 2015-12313-CLS-CLS), and Great Crested Newts (Class Licence Registration No. 2019-44282-CLS-CLS). He has successfully obtained European Protected Species mitigation licences for a number of bat species including Lesser Horseshoe, Greater Horseshoe, Serotine, Brown Long-eared, Common Pipistrelle and Natterer's bats, for a number of roost types including maternity and hibernation sites.

### Inspection Survey for Bat Roost Potential

- 3.2 An internal and external inspection survey of the building was conducted on the 25<sup>th</sup> August 2023.
- 3.3 All bat species resident in the UK have been recorded using buildings and built structures as roosts at some time during the year (Collins, 2016). The building was inspected externally and internally following the methodology set out in the Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines. 3rd Ed (Collins, 2016).
- 3.4 In summary, a building is searched externally and then internally, where access is available, for any evidence of use by bats and notes are made on the following:
- Location and number of any live bats.
  - Location and number of any corpses or skeletons.
  - Location and number of droppings.
  - Notes on relative freshness, shape and size of droppings.
  - Location and quantity of feeding remains.
  - Location of clean, cobweb-free timbers, crevices and holes.
  - Location of characteristic staining from urine and/or grease marks.
  - Location of known and potential access points to the roost.
  - Location of the characteristic smell of bats if no other evidence is recorded.
- 3.5 Notes are also made on the characteristics and features of the building as follows:
- Type, age and aspect.
  - Wall construction, in particular the type of brick or stone used to build the walls and whether it has cavity walls or rubble- filled walls.

Form of the roof, in particular the presence of gable ends, hipped roofs, etc. and the nature and condition of the roof covering.

Presence of hanging tiles, weather boarding or other forms of cladding.

Nature of the eaves, in particular if they are sealed by a soffit or boxed eave and the tightness of the fit to the exterior walls.

Presence and condition of lead flashings.

Gaps under eaves, around windows, under tiles, lead flashings etc.

Presence and type of roof lining.

Presence of roof insulation.

Presence of water tanks in loft (note if covered or uncovered).

Structure of the roof including the truss type, age and nature of timber work.

Information or evidence of work having been undertaken that could affect use of the structure by bats.

- 3.6 The presence or evidence of nesting birds is also recorded.

## Equipment

- 3.7 Equipment used to aid the inspection survey included low and high-powered torches, ladders, endoscope, mirrors, binoculars and a camera.

## Assessment

- 3.8 Where a building cannot fully be inspected or the presence of bats entirely ruled out, the potential roost suitability of the building for bats is assessed and classified as follows (Collins, 2016):

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.

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 habitat.

- 3.9 The surveyed building is evaluated to assess which of the following categories it falls into, if any (Mitchell-Jones, 2004 & Collins, 2016):

Transitional roost (April-September/October) - On waking from hibernation or in the period prior to hibernation, bats search for roosts in which they stay for only a few days

or on some occasions several weeks. These transitional roosts can be occupied by a few individuals or occasionally small groups. The transitional roosts used prior to hibernation are generally cool and thus may allow bats to reduce their energy requirements before going into hibernation.

**Maternity roost (May-August)** - Breeding females gather together around the beginning of May to form nursery colonies. During this period gestation begins with births typically occurring between June and July. The females and their young remain within the maternity roost until the young are weaned and independent (late July-August). These roosts tend to break up between August and September. Adult males are rarely found within these colonies. However, the adult males of long-eared bats, Daubenton's, Natterer's, and horseshoe bats can be found roosting within maternity colonies with their numbers increasing throughout the active season.

**Satellite roost (May-August)** - Breeding females may have alternative roost sites in close proximity to the main nursery colony. These are referred to as 'satellite roosts'. The numbers of bats using these roosts can vary greatly, from a few individuals, to small groups.

**Mating roost (September-November)** - All British bats are polygynous i.e. males mate with several females. Mating generally takes place from late summer and can continue through the winter. A number of different mating strategies are used by bats, though males of some species establish mating roosts, whereby they defend territory and display/call to females to mate.

**Hibernation roost (October-March)** - Depending on the weather and food availability, bats tend to move to hibernation sites from October. Hibernation roosts can vary greatly in terms of the number of individuals and the diversity of species that occupy them. However, they tend to have a constant cool temperature and high humidity, which allows the bats to use less energy regulating their temperature. Bats will wake occasionally during hibernation to drink and feed.

**Night roost (March-November)** - Bats may use roosts other than traditional day roosting sites to rest in during the night. These roosts vary in their conservation significance. Night roosts may be used by a single individual on occasion or they could be used regularly by the whole colony. Studies have shown that night roosts may be of particular importance to some species i.e. the Lesser Horseshoe, providing key resting places within core foraging areas.

**Day roost (March-November)** - These roosts are used during the day to rest in. Males of most British species spend the summer roosting alone or in small groups with other males in such roosts. Bats may regularly use a number of day roosts, switching between them on a daily basis, though conversely, they may occupy the same roosting site for several weeks.

**Feeding roost (May-November)** - These roosts can be occupied by a single animal or a few individuals throughout the active season. They vary in their significance as they may be used by the whole colony or just a few individuals to feed, to shelter from the weather or to rest temporarily. Feeding roosts are often used by long-eared and horseshoe species.

**Other considerations, Swarming sites** - Swarming takes place between August and November, whereby large numbers of bats from several species gather, generally around

caves and mines. They are often dominated by the *Myotis* species and appear to be important mating sites with some bats travelling several kilometres to reach these areas. A proportion of the bats that travel to these sites will remain to hibernate.

## Limitations

- 3.10 The roof was found to be lined with bitumen felt as well as having partially vaulted ceilings creating voids between these and the roof tiles that could not be inspected. The building was otherwise fully accessible and there were no restrictions to carrying out the survey according to the stated methodology.

## 4.0 Results

### Preliminary Roost Assessment

#### Surrounding Habitat

4.1 The following table presents the nature of the habitats surrounding the building and connectivity into the wider area in relation to their potential importance to bats.

Table 1: Details of habitats in relation to foraging and commuting bats.

Habitats	Description
Immediate surroundings	Patio hard standing to the front where a street lit road is present. Garden to the rear and east side with a semi-detached house to the west.
Connectivity	Linked gardens to the north connect to the countryside that surrounds Minchinhampton but connectivity to the south is poor.
Wider Landscape	The area surrounding the village a mosaic of pasture and arable land with a network of field boundary hedgerows linking woodland.
Potential for presence on site and site value	The site provides a small area of garden habitat to the rear where invertebrates will be present and small numbers of common urban species could forage. However, overall, the site is small and any significant value of the site for bats is associated with any potential for roosting.

#### Buildings

4.2 The following tables present a description of the building in terms of general characteristics, and potential for roosting bats.

Table 2: Building descriptions and details in relation to potential for roosting bats.

Garage/ Outbuilding	Description
External	<p><b>General:</b> Three storey Cotswold stone semi-detached town house with single storey lean-to extension to the rear and a conservatory on the east side.</p> <p><b>Roof:</b> A gable end main roof with natural Cotswold slates on the front pitch and flat tiles on the rear roof pitch and lean-to. Main roof continues over the neighbouring house, which has a rear gable projection adjoining the lean-to.</p> <p><b>Dormers/roof windows:</b> None but velux windows present in the adjoining house.</p> <p><b>Verges:</b> Mortar infill under tiles/slates.</p> <p><b>Chimneys:</b> Three present on along the ridge.</p> <p><b>Walls:</b> Solid Cotswold stone walls.</p> <p><b>Cladding:</b> None.</p>

	Eaves: Walls enclose eaves.
Internal	<p>General: Three floors with the second floor occupying the majority of the roof void with fully vaulted ceilings in the east section and partially vaulted ceilings in the west section leaving a small roof void above.</p> <p>Enclosed/Separate Roof Voids: One small roof void measuring 5 m long 2 m wide and 0.7 m high.</p> <p>Roof Structure: Predominantly hidden behind vaulted ceilings; only timber rafters and central ridge board visible.</p> <p>Roof Lining: Bitumen felt.</p> <p>Insulation: Fibreglass insulation over the joists.</p> <p>Other e.g. Water Tanks, Boilers, AC Units: None present.</p>
Potential access points	<p>Gaps under slates across the front roof slope.</p> <p>Gap under lead flashing around west chimney.</p> <p>The building was otherwise well sealed.</p>
Potential roosting features	<p>The roof void is small and was heavily cobwebbed with no evidence of bats recorded. A small number of mouse droppings were recorded but bats are absent from this roof void.</p> <p>External and are crevice type roosting locations between roof coverings and roof linings/vaulted ceilings.</p>
Evaluation	<p>Roosting bats are expected to be absent from the roof space due to the nature of this space and the absence of any evidence where evidence would persist, following a full inspection. Heavy cobwebbing further confirms bats are absent from here.</p> <p>The main roosting features are external and are crevice type roosting locations between roof coverings and roof linings/vaulted ceilings. No evidence of bats using the access points was noted but such evidence is not always apparent. The front roof slope has the majority of the access points due to the use of natural slate but has street aspect and no works are proposed here.</p> <p>Access points on the rear roof slope where works are proposed are limited to a gap under the lead flashing around the west chimney but the roof on this side and the single storey lean-to section are otherwise well sealed.</p> <p>In the absence of any evidence of bats but taking into account the number and nature of potential roosting features, the building overall is deemed to have low potential to support roosting bats.</p>
Birds	<p>Interior: No potential.</p> <p>Eaves: Closed.</p> <p>External ledges/crevices: Gaps on the front roof slope may be of sufficient size to allow access for small birds, e.g. House Sparrows/Swift but no evidence that they have done so recently.</p>

	Evaluation: Nesting birds are currently absent but birds may nest in future nesting seasons.
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## Photographs



1: Front (south) elevation.



2: North elevation.



3: East gable end.



4: Lean-to section.



5: Gaps under slates on the south roof slope.



6: Gap under lead flashing.



7: Roof void.



## 5.0 Impact Assessment and Required Actions

### Impacts

- 5.1 The building is the subject of a planning application to permit the demolition of the single storey lean-to section and the construction of a rear two storey extension that would tie into the base of the rear roof pitch.
- 5.2 In the absence of mitigation, the following impacts and potential impacts with regard to bats have been identified:

Table 3: Impact Assessment.

Building	Impact Assessment
House	<p>Roost damage/destruction: Demolition of the single storey lean-to that has no potential for roosting bats.</p> <p>Roost modification: None predicted. The works will not affect the front roof slope where the majority of the potential access points are present and the gap under the lead flashing on the rear will also not be affected.</p> <p>Roost disturbance: Some potential for disturbing bats, if present when the works take place, through noise and vibration, causing them to fly during the day making them vulnerable to predation. Impact unknown but can be mitigated.</p> <p>Effect on foraging/commuting: Potential for impacts from changes to external lighting, which can be mitigated and changes to building layout. No other changes that would result in any disruption of adjacent foraging and commuting habitats.</p> <p>Birds: Potential nesting sites are removed from the proposed areas of work so no disturbance of nesting birds in the event they are present when works take place.</p>

### Further Surveys

- 5.3 Where a building cannot fully be inspected or the presence of bats entirely ruled out, and the proposed works could impact on potential roosting features, the building should usually be subject to presence/absence surveys, which take the form of dusk emergence surveys with the use of night vision aids as described in the “Bat Conservation Trust Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys” (BCT, 2022). In this instance, the potential for roosting bats is low and access points and roosting sites would not be directly affected by the works. Provided works to the rear roof pitch are carried out carefully to minimise noise and disturbance, no significant disturbance to roosting bats in the unlikely event they are present on other parts of the roof, are predicted.
- 5.4 Nesting birds were not recorded but they nest in the future. No further surveys for birds are required at this time. All nesting birds are protected under The Wildlife and Countryside Act 1981 (and amendments). None of the potential nesting sites will be affected and no pre-works surveys are required.

## Legal Compliance

- 5.5 The Wildlife and Countryside Act 1981 as amended by The CRoW Act 2000 and The Conservation of Habitats and Species Regulations 2010 makes it illegal to recklessly damage, destroy or obstruct access to any place that a wild bat uses for shelter or protection, whether the bat is occupying the shelter at the time or not.
- 5.6 European Protected Species (EPS) Licences to permit the above for the purposes of development must be obtained from Natural England. To gain a licence the scheme must have been issued with detailed planning permission and must not result in a loss of conservation status of the species concerned. Potential roosting sites and access points will not be affected by the works and a licence will not be required to permit the works.

## Care and Vigilance

- 5.7 The contractors will be advised to carry out all roof works with care and vigilance for bats, and adhere to the following procedures in the unlikely event bats are found during works:
- If the roost is still in the structure and bats are not injured, stop work and contact a licensed ecologist. If help is not available, allow bats to fly out of harm's way.
  - If material containing a roost has been removed, the roost is not exposed and the bats are not injured, temporarily seal and isolate the roost, stop work and seek advice from a licensed ecologist. If advice is not readily available, re-open it and allow bats to relocate of their own accord.
  - If the roost has been exposed, and especially if bats have been injured, stop work, collect bats in a secure box or bag (using a glove) and contact a licensed ecologist.

## Provision for Bats

- 5.8 No specific provision for roosting bats is recommended; the existing potential roosting features will remain.
- 5.9 Any new lighting should be designed to limit disturbance of foraging, commuting and potentially roosting bats, and other nocturnal wildlife. Measures should include the use of lighting only where absolutely necessary utilising highly directional warm white LED lighting, an example being down spots at 2.5 m high using warm white (2700 K) 8W LED lamps, 550 lumens, 35 degree beam angle. These could be individually activated by PIR sensors on a 5 minute cut off to further reduce their impacts. These will assist in lighting only the areas where lighting is required and minimising light spill either directly or through reflected light.

## Provision for Birds

- 5.10 Consideration could be given to providing additional nesting sites for small birds to enhance the site. The following options could be explored for inclusion on the north of the building once works are complete:
- Individual boxes, such as the Schwegler Bird Home 1MR, could be installed at a height of at least 2 m on the north elevation.

Groups of multiple small bird boxes could also be installed at a height of least 2 m on the north elevation to provide nesting sites for House Sparrows.

## 6.0 References

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