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## Bat Scoping Report and Preliminary Ecological Appraisal

**3 York Road, Chichester**

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## **Report Summary**

1. The Ecology Co-op was commissioned by Barny Ragless to undertake a Bat Scoping Assessment and Preliminary Ecological Appraisal at 3 York Road, Chichester. The purpose of this report is to present the findings of the appraisal and identify potential ecological constraints and opportunities in relation to a proposal to alter and extend the existing property, with the potential addition of a new residential property within the garden.
2. An assessment of the site was carried out by Lynn Spencer, BSc (Hons), MSc, ACIEEM and Natural England Level 1 class bat licence holder, on the 5<sup>th</sup> November 2021. This included a ground-based external inspection of the building, internal inspection of enclosed loft spaces, where possible, and an appraisal of the surrounding habitats to evaluate the site for its potential to support roosting bats. All bat species are European Protected Species (Annex IV, 'Habitats Directive').
3. This site is situated in an urban location within the city of Chichester. It comprises a residential building set within a garden consisting of mown amenity grassland, bare ground, scattered trees and introduced shrubs.
4. The building was assessed as having low suitability to support roosting bats, with some raised roof tiles and gap in a ridge tile on the southern aspect of the house providing potential roosting features. Habitat within the zone of influence of the proposals was considered to be of potential value to bats for foraging/commuting/dispersal purposes.
5. No further surveys of the dwelling are recommended; however, it is recommended that construction work may only commence following a soft strip of the accessible ridge tile. The soft strip must be overseen by a suitably qualified and licensed ecologist. Should any bats or signs of bats be identified, the work would have to cease until appropriate surveys have been undertaken and a European Protected Species licence obtained to legally proceed with the development.
6. Any vegetation clearance should be timed outside the nesting bird period (avoiding 1<sup>st</sup> March–31<sup>st</sup> August) unless a search by a suitably qualified ecologist confirms the absence of any active nests.
7. In line with the National Planning Policy Framework guidelines the site's ecological value should be enhanced. This can be achieved through the planting of native species beneficial to invertebrates, birds and bats. Bat and bird boxes could also be incorporated into the scheme. Further detail is provided in section 4.



**8. The proposed development should include an ‘ecologically sensitive lighting scheme’ in accordance with guidance produced by the Bat Conservation Trust.**



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## **CONTENTS PAGE**

<b>1 INTRODUCTION .....</b>	<b>6</b>
1.1 Purpose of the Report .....	6
1.2 Background.....	6
1.3 Policy and Legislation.....	8
<b>2 METHODOLOGY .....</b>	<b>9</b>
2.1 Desk Study.....	9
2.2 Field Survey.....	9
2.2.1 <i>Roosting Potential</i> .....	9
2.2.2 <i>Hibernation Potential</i> .....	10
2.2.3 <i>Foraging and Commuting Suitability</i> .....	10
2.3 Other Protected and/or Notable Species .....	11
<b>3 RESULTS/OBSERVATIONS .....</b>	<b>11</b>
3.1 Desk Study and Granted EPS Licences .....	11
3.2 Site Context and Surrounding Habitats.....	11
3.3 Habitats.....	11
3.4 Building Inspection for Bats.....	12
3.4.1 <i>Roosting Potential</i> .....	12
3.5 Foraging and Commuting Potential.....	12
3.6 Other Protected and/or Notable Species .....	13
3.7 Survey Limitations .....	13
3.8 Photographs .....	15
<b>4 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES .....</b>	<b>20</b>
4.1 Bats.....	20
4.1.1 <i>Roost Potential</i> .....	20
4.1.2 <i>Foraging and Commuting Suitability</i> .....	20
4.2 Other Protected and/or Notable Species .....	20
4.3 Invasive Non-native Species .....	21
4.4 Biodiversity Enhancement Opportunities .....	21
<b>APPENDIX 1 – Wildlife Legislation and National Planning Policy.....</b>	<b>22</b>
<b>APPENDIX 2 – Reducing Impacts of Artificial Light.....</b>	<b>24</b>



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## **1 INTRODUCTION**

### **1.1 Purpose of the Report**

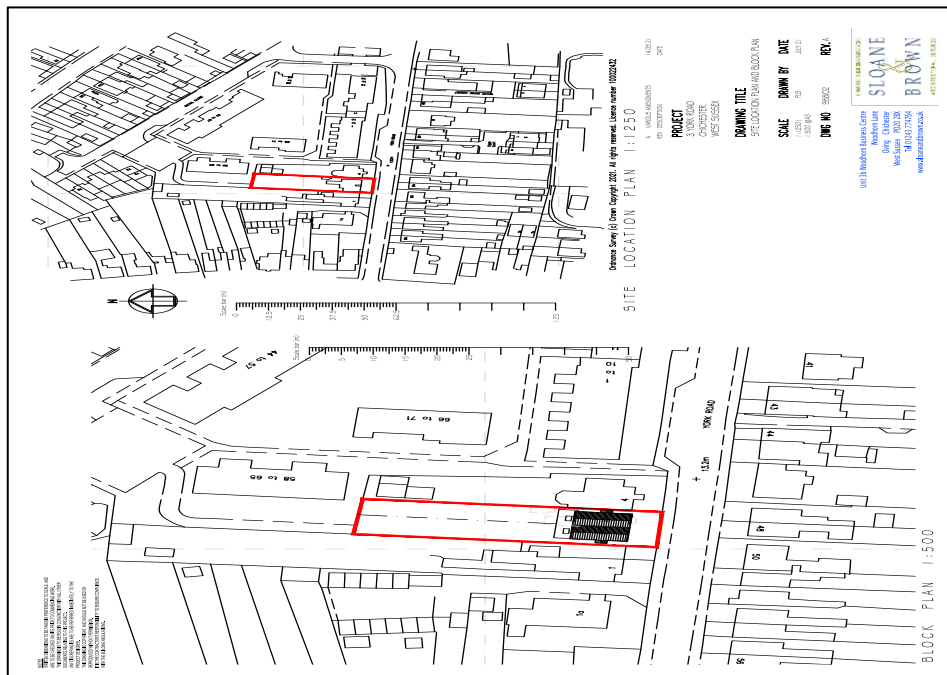
The Ecology Co-op was commissioned to undertake a bat scoping assessment of a residential building at 3 York Road, Chichester by Barny Ragless. This report presents the findings of a walkover survey and building inspection for occupation by bats, undertaken by Lynn Spencer, BSc (Hons), MSc, Associate member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and Natural England Level 1 bat survey class licence holder, on 5<sup>th</sup> November 2021. It provides details of the potential for any protected/notable species and/or habitats to be present at the site and an assessment of the potential ecological constraints and opportunities in relation to the proposed alteration and extension of the existing property, with the potential addition of a new residential property within the garden. Recommendations for further surveys that are likely to be required to inform a planning application are provided, if necessary. Where appropriate, measures to avoid, mitigate and/or compensate for likely significant adverse effects are outlined.

### **1.2 Background**

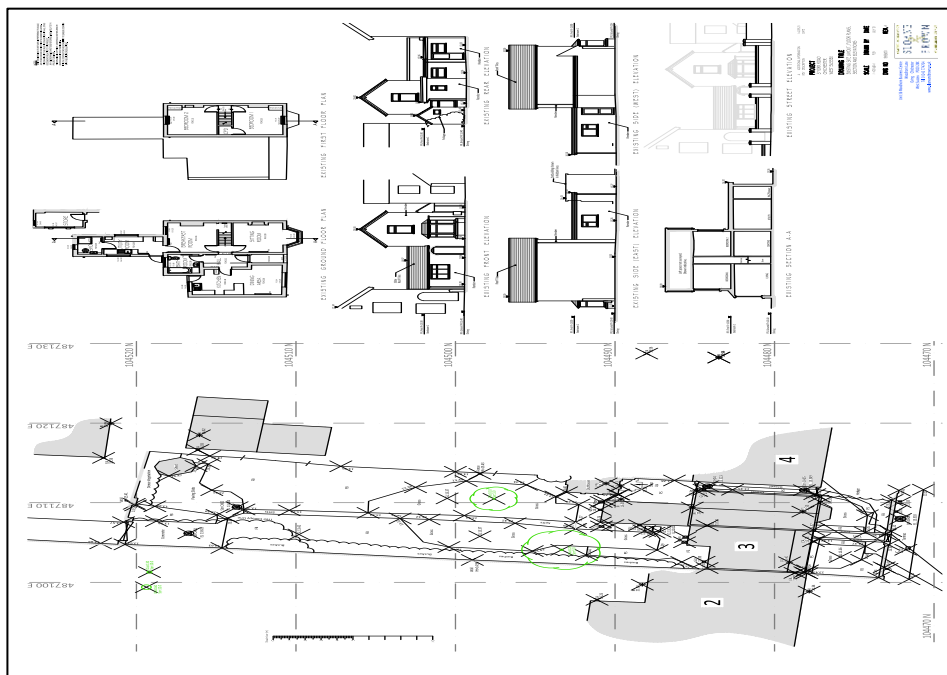
The site is located at 3 York Road, Chichester PO19 7TJ. The central grid reference for the site is SU 8710 0448.

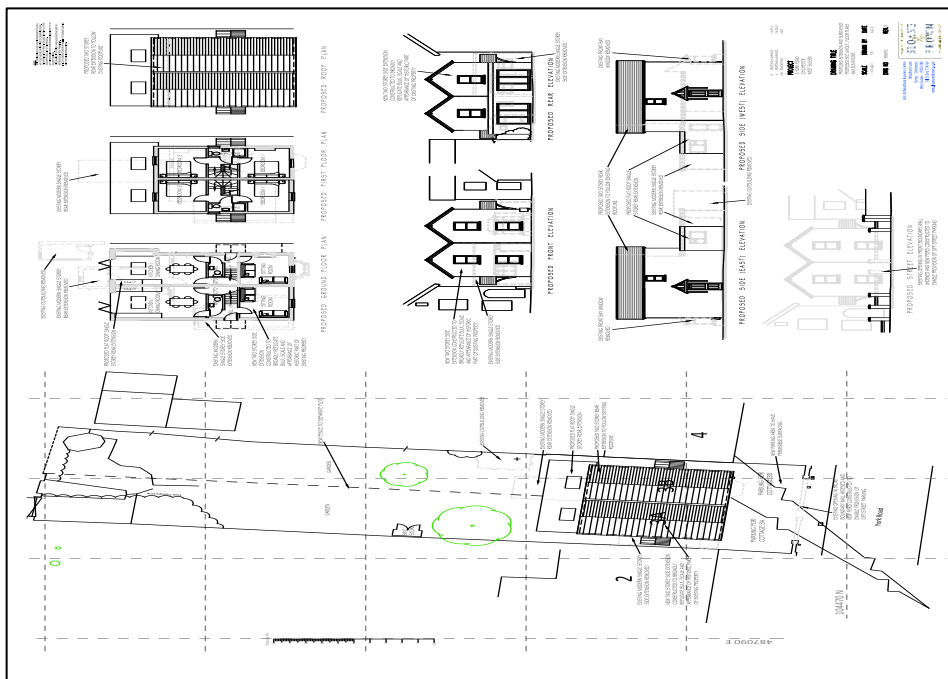
The site comprises a residential building set within a garden consisting of mown amenity grassland, bare ground, scattered trees and introduced shrubs. Figure 1 shows the location of the site.

The proposed development/project comprises the alteration and extension of the existing property, with the potential addition of a new residential property within the garden, together with associated hard and soft landscaping works (see Figure 2).



**Figure 1.** Site location plan of 3 York Road (red line indicates site boundary), courtesy of Sloane & Brown (drawing no. 988/02).





**Figure 2.** Existing layout (top) and proposed alterations and subdivision layouts (bottom), courtesy of Sloane & Brown (drawing no's. 988/01 & 988/03).

### 1.3 Policy and Legislation

Legal protection applying to all bat species in the UK is outlined in Appendix 1 of this report.

The results of this survey will be used to determine the need for further surveys, impact avoidance measures and/or an appropriate mitigation strategy to ensure compliance with UK and EU wildlife legislation.





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## 2 METHODOLOGY

The methodologies used for this survey are in accordance with the bat survey guidelines produced by the Bat Conservation Trust<sup>1</sup>. Where there has been any deviation from the guidelines due to any site-specific constraints or other circumstances, reasoning and justification has been provided. This survey has also considered the Guidelines for Preliminary Ecological Appraisal produced by CIEEM<sup>2</sup>, where the potential for impacts to species other than bats has been identified.

### 2.1 Desk Study

A search of on-line mapping resources was undertaken to characterise the local context of the site with respect to semi-natural habitats and linear features of value to foraging and commuting bats.

The MAGIC website resource ([www.magic.gov.uk](http://www.magic.gov.uk)) was used to identify the location of designated sites for nature conservation within 2km and European Protected Species (EPS) licences granted within a 1km radius of the survey site. Priority habitats and ancient woodland sites upon or adjacent to the site have also been identified, due to their ecological value and potential to act as important foraging resources for bats.

Priority habitats and ancient woodland are classified as habitats of principal importance. Habitats of principal importance are listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006<sup>3</sup>, which places a duty on Local Planning Authorities to have due regard to biodiversity.

### 2.2 Field Survey

#### 2.2.1 Roosting Potential

Bats can use a wide range of features for roosting purposes including loft spaces, cavity walls, loose tiles, mortice joints and cracks/gaps in a variety of built structures. They can also be found in trees with holes, splits, cracks, cavities, ivy and loose bark.

A detailed building inspection was carried out, looking for potential access points and Potential Roost Features (PRFs) that bats could use and any evidence indicating the presence of bats using the building, such as rub marks, feeding remains, staining or droppings. This included a ground-based external inspection around the building and internal inspection of any enclosed loft spaces or roof voids, where safe access was possible. A high-powered torch was used for the internal and external assessment.

The suitability of each feature, or group of features, to support roosting bats has been assessed as

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<sup>1</sup> Collins, J.(ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3<sup>rd</sup> edn). The Bat Conservation Trust, London.

<sup>2</sup> CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

<sup>3</sup> HM Government (2006). Natural Environment and Rural Communities Act 2006. Available online at: <https://www.legislation.gov.uk/ukpga/2006/16/section/41>.



either negligible, low, moderate, or high, in accordance with best practice guidance<sup>1</sup> (see Table 1) Any evidence confirming the presence of bats was clearly recorded including photos and samples taken (e.g. droppings), where appropriate. Further surveys have been recommended in accordance with best practice guidance and the surveyors professional judgement, where evidence of a bat roost or PRFs have been identified that would be adversely impacted by the proposal and where precautionary mitigation alone cannot ensure that bats would not be potentially disturbed or harmed.

**Table 1.** Guidelines for assessing suitability of structures (buildings and trees etc) to support bat roosts

Suitability	Description of roosting habitats
Negligible	A structure that does not support any features that could be used by roosting bats.
Low	A structure that has one or more potential roosting features that could support individual roosting bats opportunistically. These features however lack the space, shelter or appropriate conditions, to support larger numbers of bats (such as a maternity roost).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter and suitable conditions for roosting, but are unlikely to support a roost of high conservation significance.
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 potential for longer periods of time due to their size, shelter, protection and conditions.

## 2.2.2 Hibernation Potential

The structure and its associated features were assessed for their suitability to be used by hibernating bats. The assessment was carried out in accordance with guidelines produced by BatAbility<sup>4</sup> and the bat survey guidelines produced by the Bat Conservation Trust<sup>1</sup>. To determine the potential for features to support hibernating bats the following aspects were considered:

- the suitability of features to support roosting bats or to allow access for roosting bats;
- the temperature and humidity conditions likely to be present within the feature during the winter period and the suitability in this respect for it to be used by bats for hibernating;
- the surrounding habitat, in terms of its potential for use by bats outside of the hibernation period for commuting and/or foraging purposes; and
- the presence of known roosts within the structure, or adjacent structures, or surrounding area during the active season.

The potential for use by hibernating bats for each feature, or group of features was assessed as negligible, low, moderate, or high, in accordance with best practice. Further surveys are recommended where appropriate, considering the feasibility of a hibernation survey for certain PRFs.

## 2.2.3 Foraging and Commuting Suitability

The habitats surrounding the site and wider landscape were broadly assessed for their potential to support foraging and commuting bats, and were categorised as negligible, low, moderate or high potential suitability in line with published guidance<sup>1</sup>.

<sup>4</sup> Middleton. N. (2019). Assessing Sites for Hibernation Potential. A Practical Approach, including a Proposed Method & Supporting Notes. Version' Draft/V2.2019. BatAbility.



## 2.3 Other Protected and/or Notable Species

Any birds identified, or evidence of nesting birds discovered during the site visit, were recorded. Special attention was paid to notable species such as red-listed Birds of Conservation Concern (Eaton et al. 2015) and those species afforded special protection on Schedule 1 of the Wildlife and Countryside Act (1981).

Whilst this survey focussed on bats and no specific searches were made with respect to other protected species, any evidence of other protected species that was encountered during the site visit was also recorded.

# 3 RESULTS/OBSERVATIONS

## 3.1 Desk Study and Granted EPS Licences

There are no designated sites that include bats as a designated feature within the zone of influence of the site.

There are no EPS licences granted for mitigation projects within 1km of the site boundary.

## 3.2 Site Context and Surrounding Habitats

The site is located in a rural location within the city of Chichester. The property is surrounded by residential housing to the north, east, south and west.

The site supports a residential building, summerhouse, garden shed and several scattered trees. The house is set within a garden space comprising mown amenity grassland, introduced shrubs and hardstanding.

Overall, habitats within the site are considered to be of low value to foraging and commuting bats. Within the wider landscape there are moderate-value habitats present, including arable fields bordered with hedgerows and scattered trees, and a network of lakes, which combine to provide a variety of habitats that are likely to support a variety of bat species, particularly species that specialise in aquatic habitats, such as Daubenton's bat *Myotis daubentini*.

## 3.3 Habitats

The house is set within a garden space comprising mown amenity grassland, with a sward height of approximately 2–5cm, introduced shrubs, scattered trees and hardstanding (paving slabs).

Species present included perennial ryegrass *Lolium perenne*, red fescue *Festuca rubra*, daisy *Bellis perennis*, dandelion *Taraxacum agg.*, white clover *Trifolium repens*, apple *Malus sp.*, traveller's joy *Clematis vitalba*, snowberry *Symphoricarpos sp.*, fuchsia *Myrtales sp.*, rosemary *Salvia rosmarinus*,



lavender *Lavandula sp.* and cherry laurel *Prunus laurocerasus*. Rhododendron *Rhododendron ponticum* and cotoneaster *Cotoneaster sp.* were also present within the garden.

### 3.4 Building Inspection for Bats

#### 3.4.1 Roosting Potential

The building inspection revealed that the building is generally in good condition. All walls and hanging tiles were in good condition. Three slipped/missing tiles on the roof and gaps were found on the soffit box on the western elevation. The shed within the garden was in poor condition with no opportunities for roosting bats.

The structures are described further in Table 3 below and illustrated in the following photographs section.

**Table 2.** Assessment of PRFs

Building section	Description of features	Assessment of potential (Collins 2016)
House exterior	Rendered brick building with hipped slate tiled roof and flat felt roof. In good condition with no cracks or gaps in walls. No cracks, splits or gaps in wooden fascia. No interior void space. Some raised roof tiles and gap in ridge tile on southern aspect. No evidence of bats was identified.	Low bat roost suitability
Storeroom	Rendered brick building with hipped tin roof. In generally good condition. No cracks or gaps in brickwork. No splits or gaps in wooden beams. No evidence of bats was identified.	Negligible bat roost suitability
Summerhouse	Wooden panelled and glass framed structure with sloping felt roof. In generally good condition. No splits, cracks or gaps in the wood. No evidence of bats was identified.	Negligible bat roost suitability

Overall, the bat roost suitability at this site is assessed as 'low', considering the condition of the building and its context within low foraging habitat for bats.

Scattered trees within the site did not have any holes, splits, cracks, cavities or loose bark that would provide suitable roosting opportunities for bats. They were determined to have 'negligible' bat roost potential and would therefore not be a constraint to development.

### 3.5 Foraging and Commuting Potential

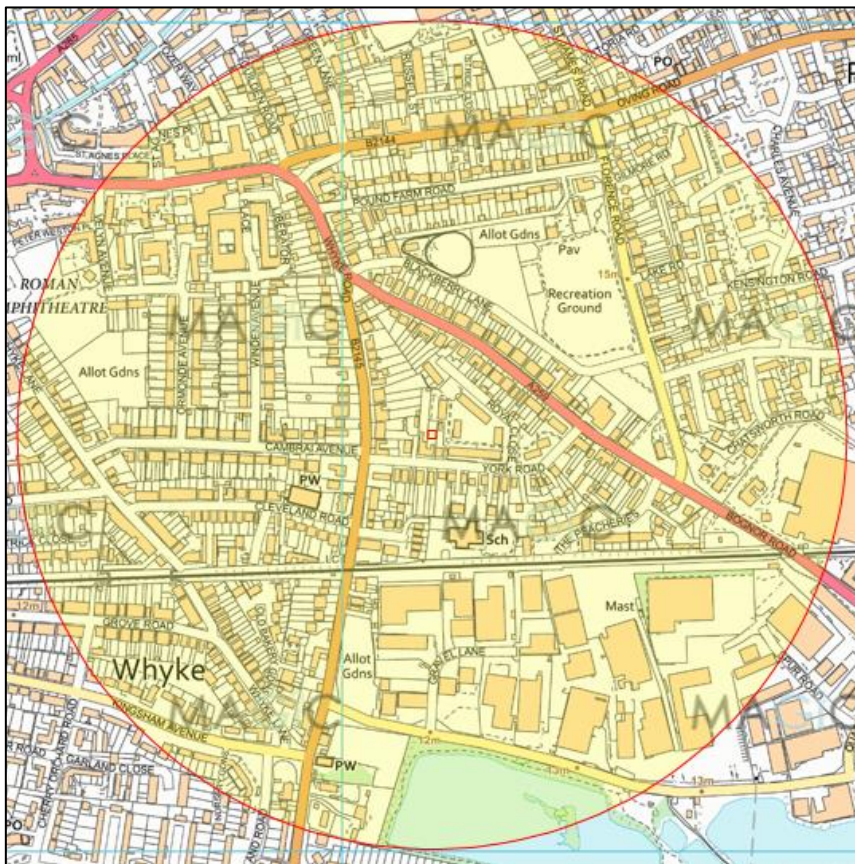
Habitats within the immediate surroundings are considered to be suitable for foraging and commuting by a variety of bat species. Hedgerows present along the boundaries of the surrounding arable fields and a network of lakes in the wider area are considered to be the features of greatest value to foraging/commuting bats within the context of the site. Overall, the site is considered to have low value for foraging and commuting bats.



### 3.6 Other Protected and/or Notable Species

The scattered trees and introduced shrubs within the site have the potential to support the occasional nest of common bird species such as blackbird *Turdus merula* or chaffinch *Fringilla coelebs*.

There are no waterbodies upon or adjacent to the site. A network of lakes was identified approximately 375m south of the site. This was separated from the site by several major roads creating a barrier to movement. Additionally there was no suitable terrestrial habitat to provide a corridor for movement between the lakes and the site. Great crested newts and other amphibians are therefore highly unlikely to be present at the site.



**Figure 3.** Location of waterbodies within a radius of 500m (indicated with the outer red line and yellow shading) of the application site (indicated with the red square). Images produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0)

The proposed zone of impact is comprised of buildings, mown amenity grassland, hardstanding and introduced shrubs. The habitats are not considered to have value for any other protected species.

### 3.7 Survey Limitations

An initial site assessment such as this is only able to act like a 'snapshot' to record any flora or fauna that is present at the time of the survey. It is therefore possible that some species may not have been present during the survey, but may be evident at other times of the year. Bats will commonly roost in



small inaccessible crevices, such as spaces underneath ridge tiles that are impossible to inspect during a scoping assessment. For this reason, habitats and features are assessed for their potential to support bats, even where no direct evidence (such as droppings) has been identified.



### 3.8 Photographs



**Photograph 1.** Northern aspect of house



**Photograph 2.** Southern aspect of house



**Photograph 3.** Raised roof tiles and gap in ridge tile on southern aspect of house



**Photograph 4.** Store room - exterior





**Photograph 5.** Store room - interior



**Photograph 6.** Summerhouse - exterior



**Photograph 7.** Summerhouse - interior



**Photograph 8.** Rhododendron plant in garden



**Photograph 9.** Cotoneaster plant in garden



**Photograph 10.** View of garden from house.



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## **4 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES**

### **4.1 Bats**

#### **4.1.1 Roost Potential**

In accordance with the Bat Conservation Trust’s guidelines, the overall suitability of the building to support bats is rated as ‘low’. The works to extend the building has the potential to impact upon features that have the potential to support bats roosts, not yet identified.

The guidelines state “If the structure has been classified as having low suitability for bats, an ecologist should make a professional judgement on how to proceed based on all of the evidence available”<sup>1</sup>. In this instance no further surveys are recommended. However, as a precautionary measure a licensed bat ecologist should be present to inspect and oversee the soft stripping of the accessible tiles on the southern elevation of the house prior to demolition, so that in the highly unlikely event a bat is present the risk of injury/killing or destruction of a roost is avoided. The stripping of this feature should be undertaken carefully by hand under the supervision of the licensed ecologist. In the event a bat was to be discovered, the feature should be made good where possible and works would need to cease immediately. Work would likely not be able to continue until an EPS mitigation licence has been obtained. It is likely that any license application would need to be supported by further surveys to classify the nature of the roost (day/maternity/transitional).

#### **4.1.2 Foraging and Commuting Suitability**

Overall, the site is considered to be of low value for foraging and commuting bats.

As the site and zone of influence may be used by foraging and commuting bats, it is important that the potential for disturbance from artificial lights is considered. The proposed development should include an ‘ecologically sensitive lighting scheme’ in accordance with guidance produced by the Bat Conservation Trust (summarised in Appendix 2).

### **4.2 Other Protected and/or Notable Species**

Since the scattered trees and introduced shrubs have potential to support nesting birds such as blackbird and chaffinch, construction work which impacts the trees and shrubs should be timed outside of the nesting bird season (avoiding 1<sup>st</sup> March–31<sup>st</sup> August). If this is not possible, the trees and shrubs should be subject to nesting bird checks by a suitably qualified ecologist as appropriate to the works. If an active nest is identified, a minimum exclusion zone for all works within 5m radius of the nest must be established to protect it from disturbance until the young have fledged.

Since the site comprises a building and is surrounded by bare ground, amenity grassland and introduced shrubs, the risk of impacts on any other protected/notable species is considered negligible and no other surveys are considered necessary.



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### 4.3 Invasive Non-native Species

Rhododendron and cotoneaster are present within the site. These species are listed on Schedule 9 of the WCA. These species and other ornamental shrub species could be removed to facilitate the development and the retaining habitat could be enhanced with native fruit and nut producing tree and shrub species. Ecological enhancement opportunities for native tree, shrub and hedgerow planting within the scheme are discussed below.

The rhododendron and cotoneaster should be removed from the site by a professional clearance team who are trained in the removal and disposal of Schedule 9 species.

### 4.4 Biodiversity Enhancement Opportunities

The proposed development represents an opportunity for habitat enhancement to benefit invertebrates, birds and bats. Any planting scheme should include native shrub species and flowering species known to encourage insect diversity. Such enhancement measures are in line with the recommendations of the NPPF and as such would be considered favourably when determining the planning application.

The species planted should be proficient fruiting/nut bearing species, which are known to benefit a range of species including birds and small mammals. Species could include, but are not limited to: pedunculate oak *Quercus robur*, field maple *Acer campestre*, beech *Fagus sylvatica*, sweet chestnut *Castanea sativa*, hazel *Corylus avellana* and hawthorn *Crataegus monogyna*. The species used within the scheme should be selected from stock of local provenance.

Bird boxes and bat boxes could be implemented within the scheme to provide additional nesting and roosting opportunities.

**If any protected species are found during the proposed work, work should be stopped immediately, and an ecologist must be contacted immediately for advice.**

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op.



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## **APPENDIX 1 – Wildlife Legislation and National Planning Policy**

The following text is intended for general guidance only and does not constitute comprehensive professional legal advice. It provides a summary of the current legal protection afforded to bats.

All bat species in the UK are included in Schedule II of the Habitats Regulations 2017, which transpose Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (“The EC Habitats Directive”). As such all bat species in the UK are defined as ‘European Protected Species (EPS)’.

Four species of bat (Bechstein’s bat *Myotis bechsteinii*, Barbastelle bat *Barbastella barbastellus*, greater and lesser horseshoe bats, *Rhinolophus ferrumequinum* and *R. hipposideros*) are also listed on Annex IV of the EC Habitats Directive. This requires the designation of a series of sites which contain important populations of these species as Special Areas of Conservation (SACs).

All species of British bat are also fully protected under the Wildlife and Countryside Act (1981), as amended, through inclusion in Schedule V.

All species of bat are listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). Section 41 of the NERC Act lists the habitats and species of principle importance. This places a statutory duty on all public bodies, including planning authorities, under Section 40, to take, or promote the taking by others, steps to further the conservation of habitats and species of principal importance for the conservation of biodiversity in England (commonly referred to as the ‘Biodiversity Duty’). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers.

Under the above legislation it is an offence to:

- Kill, injure or take any individual bat of any species;
- possess any part of an individual bat, either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by bats for shelter, rest, protection, or breeding;
- intentionally or recklessly disturb these species whilst using any place of shelter or protection; or
- deliberately disturb bats in such a way as to be likely to impair their ability to:
  - survive, to breed or reproduce, to rear or nurture their young; to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong;
- keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead bat, or any part of, or anything derived from a bat.

It is also an offence to set and use articles capable of catching, injuring, or killing bats (for example a trap or poison), or knowingly cause or permit such an action. There is also protection under Schedule 6 of The Wildlife and Countryside Act 1981 (as amended) relating specifically to trapping and direct pursuit of bats.

A European Protected Species License (EPSL) in relation to bats is required from Natural England for any work that would result in an otherwise unlawful activity (e.g. damage to a bat roost). A license can



only be issued to permit otherwise prohibited acts if Natural England are satisfied that all the following three tests are met:

- The proposal is for ‘preserving 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; and
- The action authorised by the license will not be detrimental to the maintenance of bat populations at a favourable conservation status in their natural range.

A bat roost is defined by the Bat Conservation Trust’s Bat Surveys—Good Practice Guidelines 3<sup>rd</sup> Edition as “the resting place of a bat”. In general, the word roost is interpreted as “any structure or place, which any wild bat uses for shelter or protection.”

Bats tend to re-use the same roosts; therefore, legal opinion is guided by recent case law precedents, that a roost is protected, whether or not the bats are present at the time. This includes summer roosts used for resting during the day and/or breeding; or winter roosts, used for hibernating.



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## **APPENDIX 2 – Reducing Impacts of Artificial Light**

Bright external lighting can have a detrimental impact upon foraging and commuting bat flight paths, but more importantly can also cause bats to remain in their roosts for longer. Artificial lighting can also cause significant impacts on other nocturnal species, most notably moths and other nocturnal insects. It can also result in disruption of the circadian rhythms of birds, reducing their fitness. Guidelines issued by the Bat Conservation Trust<sup>5</sup> should be considered while designing the lighting scheme. A simple process which should be followed where the impact on bats is being considered as part of a proposed lighting scheme. It contains techniques which can be used on all sites, whether a small domestic project or larger mixed-use, commercial or infrastructure development. This includes the following measures:

### **Avoid lighting on key habitats and features altogether**

there is no legal duty requiring any place to be lit. British Standards and other policy documents allow for deviation from their own guidance where there are significant ecological/environmental reasons for doing so. It is acknowledged that in certain situations lighting is critical in maintaining safety, such as some industrial sites with 24-hour operation. However, in the public realm, while lighting can increase the perception of safety and security, measurable benefits can be subjective. Consequently, lighting design should be flexible and be able to fully consider the presence of protected species

### **Apply mitigation methods to reduce lighting to agreed limits in other sensitive locations – lighting design considerations**

Where bat habitats and features are considered to be of lower importance or sensitivity to illumination, the need to provide lighting may outweigh the needs of bats. Consequently, a balance between a reduced lighting level appropriate to the ecological importance of each feature and species, and the lighting objectives for that area will need to be achieved. The following are techniques which have been successfully used on projects and are often used in combination for best results;

- Dark buffers, illuminance limits and zonation
- Sensitive site configuration, whereby the location, orientation and height of newly built structures and hard standing can have a considerable impact on light spill
- Consider the design of the light and fittings, whereby the spread of light is minimised ensuring that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Consider the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light-spill or require more columns. Column height should be carefully considered to balance task and mitigation measures. Consider no lighting solutions where possible such as white lining, good signage, and LED cats eyes. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times.
- Screening, whereby light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding
- Glazing treatments, whereby glazing should be restricted or redesigned wherever the ecologist and lighting professional determine there is a likely significant effect upon key bat habitat and features.
- Creation of alternative valuable bat habitat on site, whereby additional or alternative bat flightpaths, commuting habitat or foraging habitat could result in appropriate compensation for

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<sup>5</sup> Bat Conservation Trust and Institute for Lighting Professionals (2018) Guidance note 8. Bats and Artificial Lighting. <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>





any such habitat being lost to the development.

- Dimming and part-night lighting. Depending on the pattern of bat activity across the key features identified on site it may be appropriate for an element of on-site lighting to be controlled either diurnally, seasonally or according to human activity. A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

#### **Demonstrate compliance with illuminance limits and buffers**

- *Design and pre-planning phase*; It may be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures set as a result of your ecologist's recommendations and evaluation. This is especially likely to be requested if planning permission is required.
- *Baseline and post-completion light monitoring surveys*; baseline, pre-development lighting surveys may be useful where existing on or off-site lighting is suspected to be acting on key habitats and features and so may prevent the agreed or modelled illuminance limits being achieved.
- *Post-construction/operational phase compliance-checking*; as a condition of planning, post-completion lighting surveys by a suitably qualified person should be undertaken and a report produced for the local planning authority to confirm compliance. Any form of non-compliance must be clearly reported, and remedial measures outlined. Ongoing monitoring may be necessary, especially for systems with automated lighting/dimming or physical screening solutions.

#### **Further reading:**

Buglife (2011) *A review of the impact of artificial light on invertebrates*.

Royal Commission on Environmental Pollution (2009) *Artificial light in the environment*. HMSO, London. Available at: <https://www.gov.uk/government/publications/artificial-light-in-the-environment>

Rich, C., Longcore, T., Eds. (2005) *Ecological Consequences of Artificial Night Lighting*. Island Press. ISBN 9781559631297.

CPRE (2014) *Shedding Light: A survey of local authority approaches to lighting in England*. Available at: <http://www.cpre.org.uk/resources/countryside/dark-skies/item/3608-shedding-light>

Planning Practice Guidance guidance (2014) *When is light pollution relevant to planning?* Available at: <https://www.gov.uk/guidance/light-pollution>

Institution of Lighting Professionals (2011) *Guidance Notes for the Reduction of Obtrusive Light GN01:2011*. Available at: <https://www.theilp.org.uk/resources/free-resources/>