



# The Ecology Co-op

ENVIRONMENTAL CONSULTANTS

Unit 4, Langham Stables, Langham Lane, Lodsworth, Petworth, West Sussex, GU28 9BU

Tel: 01798 861 800 - E-Mail: [info@ecologyco-op.co.uk](mailto:info@ecologyco-op.co.uk) - [www.ecologyco-op.co.uk](http://www.ecologyco-op.co.uk)

## **Bat Scoping and Preliminary Ecological Appraisal**

**March House, Oaklands Lane, West Lavington, Midhurst,  
GU29 0EE**

**Author:** Briony Hill BSc GradCIEEM

**Reviewed by:** Sam Lunn MSc ACIEEM

**17<sup>th</sup> October 2017**

**Project No: 2588**

The Ecology Co-operation Ltd  
Registered Office: Greens Court, West Street, Midhurst, West Sussex, GU29 9NQ  
Company number: 8905527



## **Report Summary**

- 1. The Ecology Co-operation has been commissioned by Lilyford Homes to undertake a Bat Scoping and Preliminary Ecological Appraisal at March House, West Lavington. A site walkover survey visit was carried out on the 11<sup>th</sup> October 2017, to evaluate the site for habitats potentially suitable to support EU and UK protected species. The purpose of this report is to record the findings of the survey and identify potential ecological constraints further to a proposal for a single-story extension to the eastern face of the existing residential property, the demolition of a garage to make way for a new studio and the construction of a new double garage.**
  
- 2. The site is located in a rural setting with low density housing in the northern outskirts of Midhurst. Arable fields, woodland and water bodies including a large quarry lake and streams are present within the close surrounding landscape. This site includes a residential property, March House, and its associated garden space and a garage. The garden space is tightly managed and includes the following habitats; mown amenity grassland, hard standing, ornamental flower borders, scattered trees and a small garden pond.**
  
- 3. Regarding the extension on the eastern face of March House, the current plans involve the potential instillation of pipes through the small void of the existing sloped roof section with no proposed works to the roof tiles. Therefore, no further surveys are necessary given that the void has ‘negligible’ potential to support roosting bats. If plans change and the slate roof tiles are to be impacted a single bat emergence survey will be necessary given that this feature has ‘low’ potential to support roosting bats.**
  
- 4. The garage has ‘negligible’ potential to support bats and no further surveys are necessary.**
  
- 5. Any vegetation removal should ideally be timed outside of the nesting bird season (1<sup>st</sup> March to 31<sup>st</sup> August) with hand searches by an ecologist required during this time period.**
  
- 6. This project is not anticipated to impact upon Ambersham Common SSSI during construction or post construction given the distance of approximately 1.3km between them and the small scale of the proposed works.**

This report has been prepared by The Ecology Co-operation Ltd, with all reasonable skill, care and diligence within the terms of the Contract with the client. This report only becomes the property of the client once payment for it has been received in full.

We disclaim responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.



**CONTENTS PAGE**

**1 INTRODUCTION ..... 4**

1.1 Purpose of the Report ..... 4

1.2 Background ..... 4

1.3 Policy and Legislation ..... 6

**2 METHODOLOGY ..... 6**

2.1 Field Survey ..... 6

2.2 Badgers ..... 6

2.3 Bat Scoping Assessment ..... 7

2.4 Breeding Birds ..... 7

2.5 Dormice ..... 7

2.6 Great Crested Newt ..... 7

2.7 Reptiles ..... 7

2.8 Other notable species ..... 8

2.9 Desk Study ..... 8

**3 BASELINE CONDITIONS ..... 8**

3.1 Habitats ..... 8

3.2 Badgers ..... 12

3.3 Bat Scoping Assessment ..... 12

    3.3.1 Residential Property ..... 12

    3.3.2 Garage ..... 14

3.4 Breeding Birds ..... 15

3.5 Dormice ..... 15

3.6 Great Crested Newts and Other Amphibians ..... 16

3.7 Reptiles ..... 18

3.8 BAP Mammals ..... 18

3.9 Designated Sites ..... 18

3.10 Survey Limitations ..... 19

**4 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES ..... 19**

4.1 Designated sites ..... 19

4.2 Badgers ..... 19

4.3 Bats ..... 20

    4.3.1 Residential Property ..... 20

    4.3.2 Garage ..... 20

4.4 Breeding Birds ..... 20

4.5 Dormice ..... 21

4.6 Great Crested Newts ..... 21

4.7 Reptiles ..... 21

4.8 Conclusions ..... 22

**5 APPENDIX 1 –PLANNING POLICY AND WILDLIFE LEGISLATION ..... 23**

**6 APPENDIX 2 - GREAT CRESTED NEWT ‘HABITAT SUITABILITY INDEX’ VALUES. .... 25**

**7 APPENDIX 3 - ARTIFICIAL LIGHTING AND WILDLIFE ..... 26**



## **1 INTRODUCTION**

### *1.1 Purpose of the Report*

The Ecology Co-operation has been commissioned to undertake a Bat Scoping assessment and Preliminary Ecological Appraisal (PEA) assessment on Land at March House, Oaklands Lane, West Lavington, Midhurst, GU29 0EE. This report presents the findings of a walkover survey undertaken on the 11<sup>th</sup> October 2017.

It provides details on the potential for any protected species and/or habitats to be present at the site and provides an assessment of the potential ecological constraints to the proposals. Where appropriate, measures to avoid, mitigate and/or compensate for impacts are outlined.

This survey assessment was carried out by Sam Lunn, an associate member of the Chartered Institute for Ecology and Environmental Management (CIEEM) and licensed bat surveyor (Natural England bat licence no: 2017-28250-CLS-CLS) and Briony Hill GradCIEEM.

This survey has been carried out at the request of Lilyford Homes.

### *1.2 Background*

The site is located in a rural setting with low density housing to the east of Oaklands Lane situated in the northern outskirts of Midhurst. Arable fields, woodland and water bodies including a large quarry lake and streams are present within the close surrounding landscape. The central grid reference for the site is SU 88486 19861.

This site includes a residential property, March House, and its associated garden space and a garage. The garden space is tightly managed and includes the following habitats; mown amenity grassland, tarmac, concrete slab and gravel hard standing, ornamental shrub borders, scattered trees and a small garden pond. Figure 1 shows the site boundary.

The proposed project includes a single-story extension to the eastern face of the existing residential property, the demolition of a garage to make way for a new studio and the construction of a new double garage.



Figure 1. An aerial image showing the location of the site. The sites approximate boundary is outlined in red.

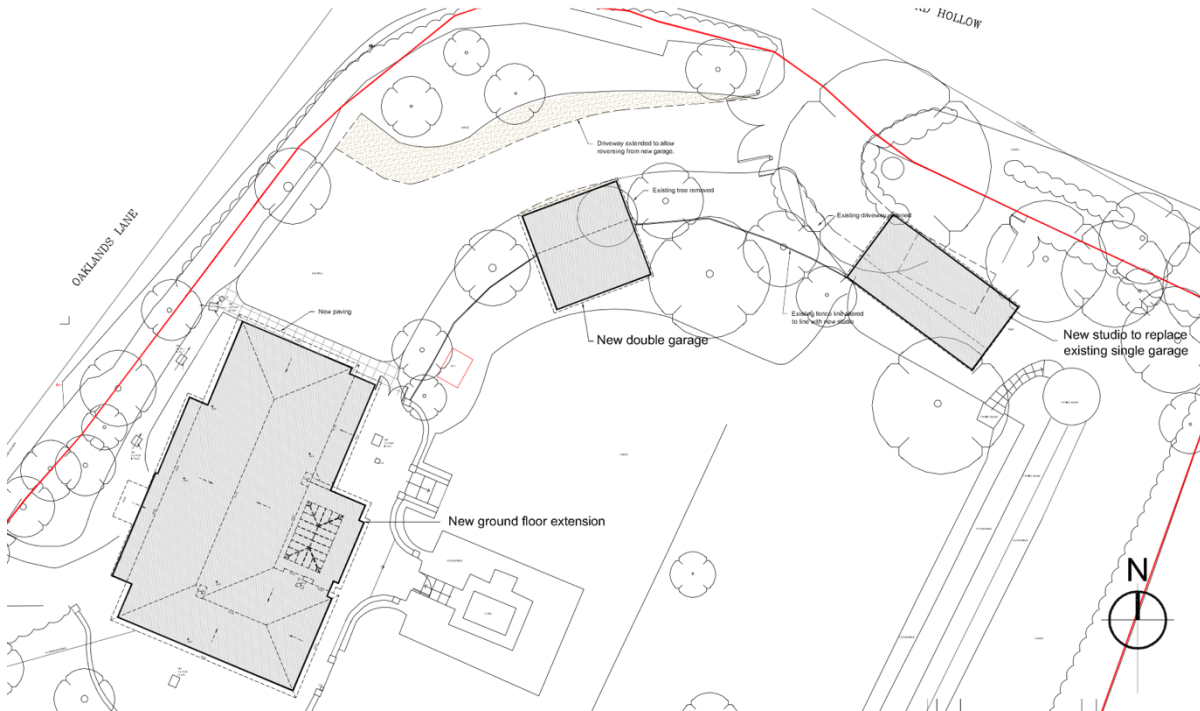


Figure 2. Proposed site plan which includes a single-story extension to the existing residential property, the demolition of a garage to make way for a new studio and the construction of a new double garage.



## **March House, West Lavington –Bat Scoping and PEA**

### **1.3 Policy and Legislation**

Legal protection applying to relevant bird, mammal, herpetofauna and invertebrate species and current nature conservation planning policy is outlined in Appendix 1 of this report.

In line with the National Planning Policy Framework (NPPF) it is important that developments should contribute to and enhance the natural and local environment by:

- Recognising the wider benefits of ecosystem services
- Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

## **2 METHODOLOGY**

The methodologies used for this survey are in accordance with the Guidelines for Preliminary Ecological Assessment (CIEEM 2013).

### **2.1 Field Survey**

A site walkover survey was undertaken on 11<sup>th</sup> October 2017. Habitats and features at the site were evaluated for their potential to support legally protected species and habitats. In addition, observations of any important plant communities, bird assemblages or other potentially valuable ecological features are recorded.

The methods developed by CIEEM and the following authors were used in the assessment of either suitable habitat to support the above species or taxonomic groups or in some cases direct evidence that the species were present<sup>123456</sup>. Details of initial survey method for each species are given below.

### **2.2 Badgers**

Habitats within the site and surrounding areas were broadly assessed for their potential to support badgers. Any signs of badger activity, for example setts, footprints, latrines, well-worn paths and foraging marks were recorded.

---

<sup>1</sup> Bright, B., Morris, P., Mitchell-Jones, A.J. and Mitchell-Jones, T (1997) *The Dormouse Conservation Handbook*. English Nature.

<sup>2</sup> English Nature (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

<sup>3</sup> Harris, S, Cresswell, P. and Jefferies, D. (1989) *Surveying Badgers*. Mammal Society.

<sup>4</sup> Oldham, R.S., Keeble, J., Swan, M.J.S. and Jeffcote, M. (2000) Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). *Herpetological Journal* 10, 143-155.

<sup>5</sup> Collins, J.(ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3<sup>rd</sup> edn). The Bat Conservation Trust, London.

<sup>6</sup> CIEEM (2013) *Guidelines for Preliminary Ecological Appraisal*



## **March House, West Lavington –Bat Scoping and PEA**

### **2.3 Bat Scoping Assessment**

Bats can use a wide range of features 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 bat scoping assessment was undertaken on the residential property and garage looking for any evidence indicating the presence of bats using buildings, such as rub marks, staining or droppings inside or outside any potential roost sites. If any definite signs of bats or other evidence had been found (such as actual sightings, droppings, urine stains, odour, scratch marks, grease stains and feeding remains), they would have been recorded.

The potential for roosting bats for each feature, or group of features was assessed as either negligible, low, moderate or high, in accordance with best practice (Collins, J.(ed.) (2016). Any evidence confirming the presence of bats that was found was clearly recorded including photos and samples where appropriate.

This assessment was undertaken on the 11<sup>th</sup> of October 2017 by Sam Lunn, ACIEEM, (Natural England bat licence no: 2017-28250-CLS-CLS) following best practice survey techniques as outlined by the Bat Conservation Trust (BCT).

### **2.4 Breeding Birds**

The habitats contained within the site and adjacent areas were broadly assessed for their potential to support important bird species/assemblages, and breeding birds. Any birds identified during the site visit were recorded. Particular 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).

### **2.5 Dormice**

The site was broadly assessed for its potential to support hazel dormouse. This included use of on-line mapping resources to assess the surrounding area for connectivity to large blocks of woodland, scrub and extensive hedgerow networks.

### **2.6 Great Crested Newt**

A desk study was undertaken to identify ponds within 500m of the site. Where access permission was granted, all ponds were assessed for their potential to support great crested newts using the Habitat Suitability Index (H.S.I.) (Oldham *et al* 2000) in accordance with best practice guidance. Further surveys are recommended as appropriate and limitations to survey are clearly set out in Section 3.11.

### **2.7 Reptiles**

Habitats on the site were broadly assessed for their potential to support reptiles. Particular attention was paid to those features that provide suitable basking areas (e.g. south-facing slopes), hibernation sites (e.g. banks, walls, piles of rotting vegetation) and opportunities for foraging (rough grassland and



## **March House, West Lavington –Bat Scoping and PEA**

scrub). The common lizard (*Zootoca vivipara*), slow-worm (*Anguis fragilis*) grass snake (*Natrix natrix*) and adder (*Vipera berus*) are widespread and smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*) have more restricted and isolated populations.

### **2.8 Other notable species**

The site habitats were broadly assessed for their potential to support species of principle importance for nature conservation (Section 41 NERC Act 2006) and other notable species. This includes mammals such as harvest mouse, hedgehog and brown hare. The site was broadly assessed for its potential to support important invertebrate assemblages with particular attention paid to features such as standing dead-wood, wet flushes, bare earth banks and botanically rich areas.

### **2.9 Desk Study**

A search for existing records of protected species, species of conservation concern and invasive non-native species was requested from Sussex Biodiversity Record Centre (SxBRC) within a radius of 1km of the site. The records were received on the 10<sup>th</sup> October 2017.

A search of on-line mapping resources was undertaken to identify the location of any features of potential ecological interest including ponds within 500m (great crested newts), watercourses (riparian mammals, crayfish) and connectivity to woodland, scrub and hedgerow networks (dormice and 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 and EPS licences granted in relation to the survey site.

## **3 BASELINE CONDITIONS**

### **3.1 Habitats**

The garden space of March House is tightly managed and includes the following habitats; tightly mown amenity grassland, hard standing, a small garden pond, ornamental shrub beds, scattered trees, wooden fences and species poor hedgerows. The habitat within the separate proposed construction zones are described separately in detail below. The small garden pond is described in detail in section 3.6.

The entire area where the proposed extension to the residential property is to be located is composed of hard-standing concrete slabs and gravel with no other habitats present (see figure 3). The property is described in detail in section 3.3.1.

The proposed location of the garage, north east of the residential property, is comprised of tightly mown amenity grassland which is species poor and includes the following plants species; white clover (*Trifolium Repens*), yarrow (*Achillea millefolium*), moss and grass spp. which could not be identified due to its short height and tarmac hard standing to the north (see figure 4 and 5). Between these two habitats is a flower bed planted with shrubs, which are mostly ornamental, with cypress (*Cypressus sp.*) and yew (*Taxus baccata*) also present. These beds are well maintained with the shrubs tightly pruned and the ground weeded and clear of vegetation. Scattered trees of the following species; beech (*Fagus*





### **March House, West Lavington –Bat Scoping and PEA**

*sylvatica*), cypress, ornamental maple (*Acer sp.*) and cherry (*Prunus sp.*) are also present. A wooden panel fence runs through the flower bed and a very thin hawthorn (*Crataegus monogyna*) and field maple (*Acer campestre*) hedge is present on its southern side.

The area where an existing garage is proposed to be replaced with a new studio is located further north east of the residential property. The garage to be demolished is described in detail in section 3.3.2. An area of amenity grassland with a gravel pathway is located to the north, with a wooden panel fence marking the northern boundary (see figure 6). A small shelter where logs are stored is located just to the north of the garage. A cypress hedgerow is present just beyond a wooden panel fence to the south and east with a single beech also present. The garage is accessed from the west via concrete hard standing (see figure 7). Finally, a short section of beech hedge runs west from the northern corner of the building.



**Figure 3.** The proposed extension to the residential property will be located on an area of hardstanding.



**Figure 4.** View of the proposed location for the garage from the north.



**Figure 5.** View of the proposed location for the garage from the south.



**March House, West Lavington –Bat Scoping and PEA**



**Figure 6.** Area of amenity grassland with a gravel pathway to the north of a garage to be demolished.



**Figure 7.** Location of the garage with a wooden fence to the south and a short section of beech hedge.



## ***March House, West Lavington –Bat Scoping and PEA***

### ***3.2 Badgers***

No signs of any badger activity were seen during the survey assessment, though there are habitats of value for this species within the landscape. It is likely that if any setts were situated within 30 metres of the site boundary, then some evidence of badger activity would have been observed.

### ***3.3 Bat Scoping Assessment***

#### ***3.3.1 Residential Property***

A single-story extension is proposed to the eastern face of March House. The extension will meet the east rendered concrete block wall of the residential property which lacks any suitable features to support roosting bats (see figure 8).

The extension will also meet the single-story sloped roof extension on this face. This section of the building has slate tiles which are lined with bitumen. The tiles are mostly tight fitting with only two gaps between lifted slate tiles which could support roosting bats (see figure 9). Lead flashing is present where the sloped roof meets the eastern wall of the property and the building supports plastic soffits with neither of these features supporting any gaps with the potential to support roosting bats.

This section of the building supports a small sealed roof void which is approximately 5 by 2 metres in area and 0.5 metres in height from floor to apex. The void is lined throughout with bitumen and is insulated (see figure 10). Cobwebbing is heavy indicating that the void has not been used in the recent past by bats. No visible day light gaps were identified suggesting that there are not any access points for bats. No evidence of bats was identified during the internal or external inspection.



**Figure 8.** Eastern face of March House where the proposed extension is to be sited.



**Figure 9.** The slate roof tiles are mostly tight fitting with a maximum of 2 gaps with the potential to support bats.



## March House, West Lavington –Bat Scoping and PEA



**Figure 10.** The small void of the single story sloped roof section which is low in height and has heavy cobwebbing.

### 3.3.2 Garage

A garage located north east of the March House is proposed to be demolished to make way for a new studio. This garage has rendered concrete block walls and a corrugated chrysotile roof (see figure 11). Corrugated chrysotile rarely supports bats given its poor thermoregulatory properties. The building lacks any external features with the potential to support roosting bats.

An internal inspection concluded that the roof panels are unlined and the building does not support a sealed void. This building is currently used for storage. The loose-fitting door allows some light and a draft inside reducing the buildings suitability to support bats (See figure 12).



**Figure 11.** Left – Northern face of the garage. Right western face of the garage.



**Figure 12.** Internal view of the garage which is used for storage.

The following bat species were identified by SxBRC within 1km of the site; Daubenton's bat (*Myotis daubentonii*), whiskered bat (*Myotis mystacinus*), whiskered/brandt's (*Myotis mystacinus/brandtii*), natterer's bat (*Myotis nattereri*), common pipistrelle (*Pipistrellus pipistrellus*), long-eared sp. (*Plecotus* sp.), brown long-eared (*Plecotus auritus*) and greater horseshoe bat (*Rhinolophus ferrumequinum*).

The greater horseshoe records are dated 2008 and 2007 with a maximum two individuals in a feeding hibernacula and unspecified roost identified at Midhurst Tunnel.

### 3.4 Breeding Birds

All of the trees, shrubs and hedgerow habitat have the potential to support a variety of common nesting birds.

### 3.5 Dormice

This arboreal species favours mixed broadleaved woodland, where there are clear sources of food for as long of their active season as possible (March to October). There are scattered trees and shrubs across the site however given that the majority of these are ornamental species, lacking a food source for dormice, it is unlikely this species would be found here at any time given the lack of suitable habitat.

SxBRC did not identify any dormouse records within 1km of the site.



## **March House, West Lavington –Bat Scoping and PEA**

### **3.6 Great Crested Newts and Other Amphibians**

A small garden pond is located upon the site within the garden space to the east of the residential property (see figure 13). This pond was calculated as having a 'poor' Habitat Suitability Index (HSI) score owing to the very small surface area, low macrophyte cover and being stocked with goldfish. As a result, it is considered highly unlikely to support great crested newts (see appendix 2).

A search of mapping and aerial imagery identified two water bodies within 500 metres of the site (see figure 14).

Pond 1 is located approximately 30 metres west of the site. This pond was completely dried out at the time of the site visit and given the time of the year and regular rain preceding the site visit it is considered unlikely to hold water during the rest of the year (see figure 15). It is therefore highly unlikely to support great crested newts.

Disused Pendean quarry lakes are located approximately 300 metres to the east of the site. Given that this waterbody is located beyond 250 metres – the most utilized area of habitat by a great crested newt population from a breeding pond these waterbodies have been scoped out.

No great crested newt records were identified by SxBRC within 1km of the site. Records for common toad, common frog, smooth newt and palmate newt were identified at Pendean Sand Pit approximately 300 metres to the north east in 2010.



**Figure 13.** Small garden pond upon the site.



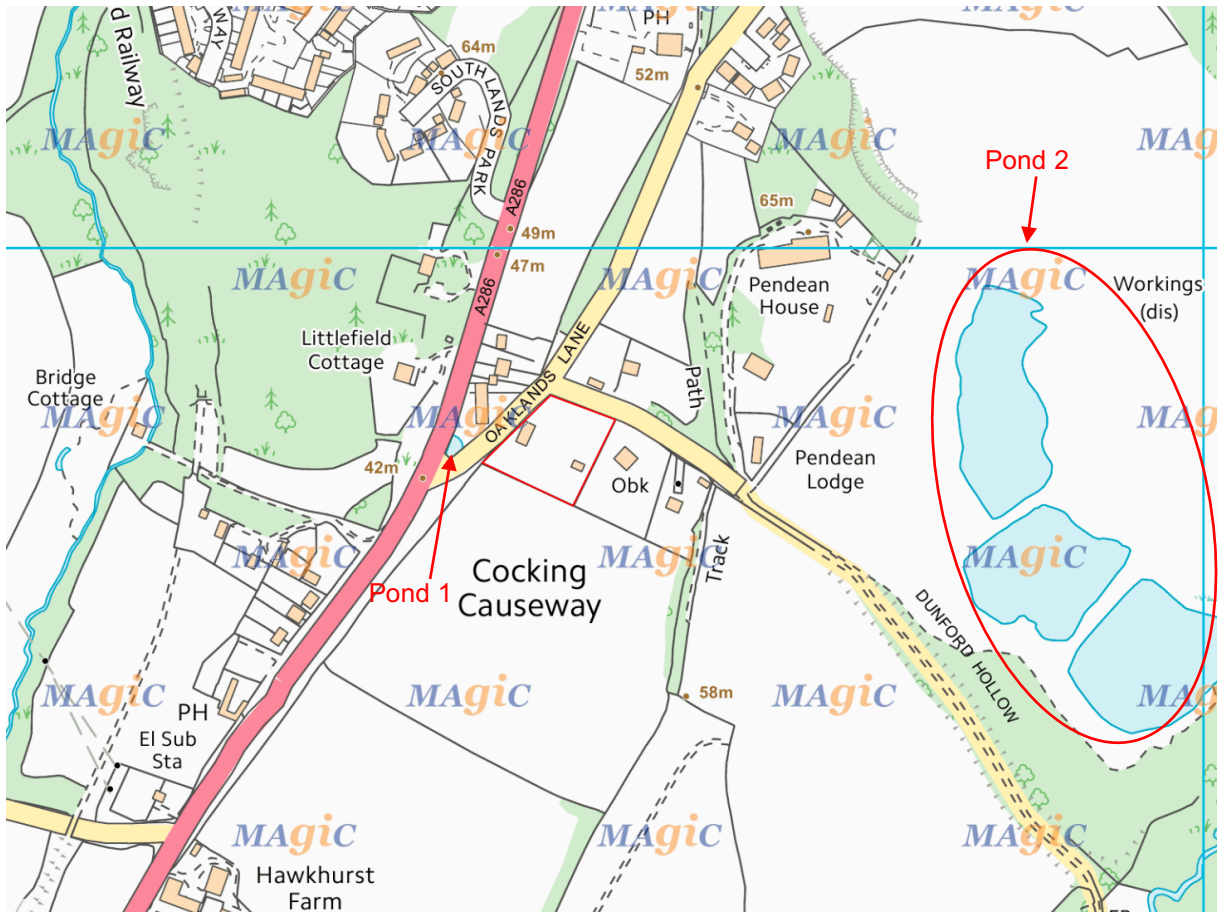


Figure 14. The locations ponds within 500 meters of the March House.



Figure 15. Pond 1 which was dried out at the time of the site visit in October.



## ***March House, West Lavington –Bat Scoping and PEA***

### ***3.7 Reptiles***

The proposed construction zones are comprised of tarmac and concrete slab hard standing, tightly mown amenity lawn and well managed flower beds supporting ornamental shrubs which lack any understory vegetation. These habitats are not suitable for reptiles given that they do not provide foraging habitat or suitable cover from predators which most native UK reptiles typically require.

Records for slow worms were returned by SxBRC. The most recent is from 2010 with this record located approximately 620 metres to the north west. A record from 2007 is located approximately 620 metres to the north east and numerous slow worm records associated with Forest Road, Midhurst approximately 840 metres north west with these mostly likely from a translocation.

### ***3.8 BAP Mammals***

Two hedgehog records dated 2015 and 2010 were identified by SxBRC within 1km of the site.

Two brown hare records from 2010 and 2008 were identified by SxBRC within these associated with Pitsham Rough approximately 760 metres to the north-west. The site is unsuitable for this species which is associated with arable farmland.

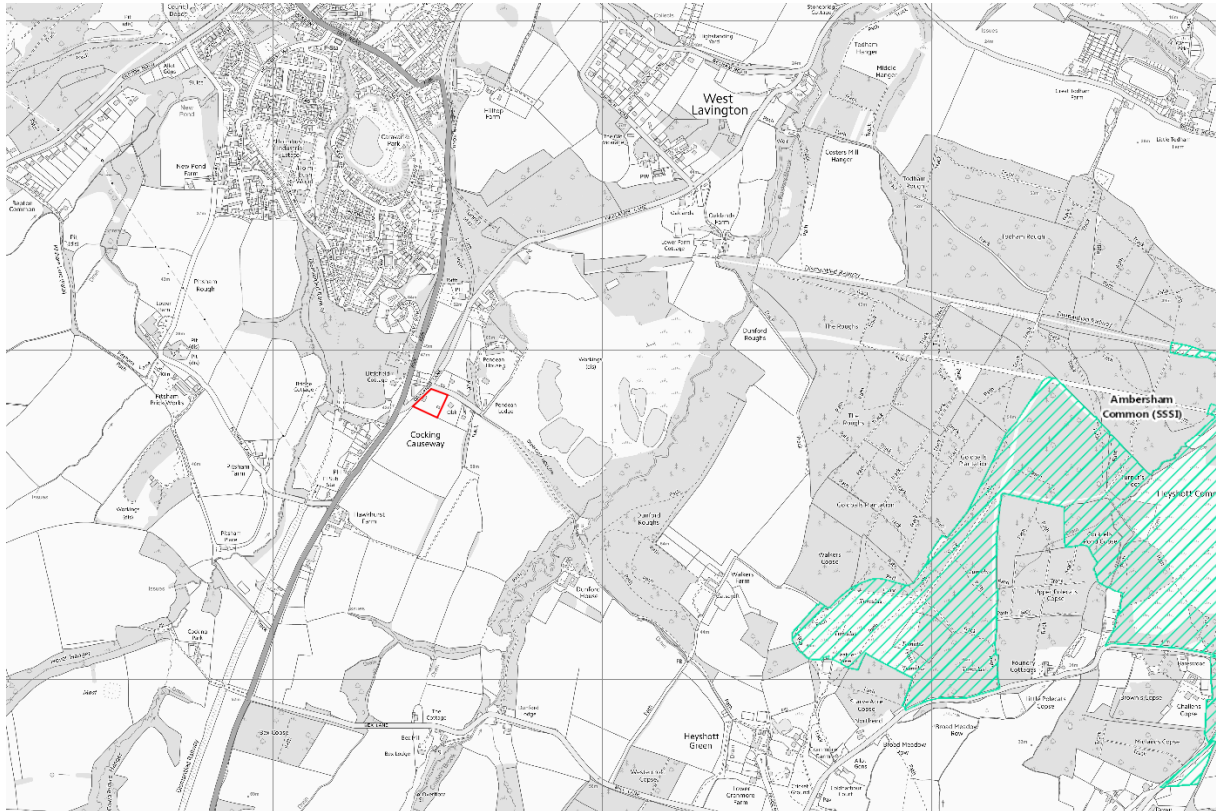
### ***3.9 Designated Sites***

A search was undertaken on the MAgiC website resource ([www.magic.gov.uk](http://www.magic.gov.uk)) and Ambersham Common Site of Special Scientific Interest (SSSI) was identified approximately 1.3km east (see figure 16).

Ambersham common SSSI covers an area of 140 Ha and is described as ‘one of the best remaining sub-atlantic heathlands in West Sussex’ with the site comprised of dry dwarf shrub heath, woodland, scrub and bracken. The site is important for invertebrates, with three nationally rare species present, and breeding birds with nightjar, woodlark, Dartford warbler, stonechat, tree pipit, redstart, nightingale and wood warbler. The site also supports sand lizards which were introduced here in 1970.



## March House, West Lavington –Bat Scoping and PEA



**Figure 16.** Excerpt from Magic Maps showing the location Ambersham SSSI in relation to the site with its boundaries outlined in red.

### 3.10 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. For this reason, habitats are assessed for their potential to support some species, even where no direct evidence (such as droppings) has been found.

## 4 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES

### 4.1 Designated sites

This project is not anticipated to impact upon Ambersham Common SSSI during construction, via noise or pollution, or post construction given the distance of approximately 1.3km between them and the small scale of the proposed works.

### 4.2 Badgers

No signs of any badger activity were seen during the survey assessment and therefore no surveys or mitigation is recommended for this species. In the event that any digging by large mammals is identified on or in close proximity to the site an ecologist must be contacted for advice.



## ***March House, West Lavington –Bat Scoping and PEA***

### ***4.3 Bats***

#### ***4.3.1 Residential Property***

The current plans involve the potential instillation of pipes through the small void of the existing slope roof extension with no proposed works to the roof tiles. As a result, no further surveys are necessary given that the void has 'negligible' potential to support roosting bats accounting to its small size, lack of any visible access points and heavy cobwebbing with no evidence of bats using the space in the recent past.

If plans change and the slate roof tiles are to be impacted a single bat emergence survey will be necessary given that this feature has 'low' potential to support roosting bats with two gaps under lifted tiles present.

Bat emergence surveys are undertaken between the 1<sup>st</sup> May and 30<sup>th</sup> September by surveyors positioning themselves in view of the features of interest upon the building and using ultrasonic detectors to record any bats emerging or re-entering these features around sunset or sunrise. A single surveyor would be required to cover the external features of this section of the building.

#### ***4.3.2 Garage***

Under the Bat Conservation Trust Guidelines this building has 'negligible' potential to support roosting bats and no further surveys or mitigation is recommended.

### ***4.4 Breeding Birds***

All of the trees, shrubs and hedgerow habitat have the potential to support a variety of common nesting birds. It will be essential for any future development to consider the nesting bird season and any vegetation removal should ideally be timed outside of the nesting bird season (1<sup>st</sup> March to 31<sup>st</sup> August) unless features are first hand search by a suitably qualified ecologist and concluded as clear of any active bird nests. In the event that an active nest is identified a buffer of at least 5 metres must be created around it with the nest to remain undisturbed until the young have fledged.

To replace the nesting bird habitat which will be lost it is recommended that two 1B Schwegler Nest Boxes should be installed. These nest boxes should be placed upon trees, fences or buildings at a height of at least 3 metres.



## **March House, West Lavington –Bat Scoping and PEA**



**1B Schwegler Nest Box**

### **4.5 Dormice**

There are scattered trees and shrubs, mostly ornamental, across the site however given the species present these would not support a suitable food source for dormice making it highly unlikely this species would be present upon the site at any time. Furthermore, SxBRC did not identify any records for this species. As a result, no further surveys are recommended.

### **4.6 Great Crested Newts**

The garden pond upon the site is highly unlikely to support great crested newts given that its HSI value was calculated as 'poor'. Therefore, no further surveys are required on this pond.

Pond 1 has been scoped out given that it was dry at the time of the site visit in October and the disused Pendean Quarry waterbodies have been scoped out given their distance of 300 metres from the site – with great crested newts typically using habitat within 250 metres of a breeding pond.

The proposed construction zones contain poor habitat for great crested newts and no records for this species were identified by SxBRC.

It is therefore considered unlikely that great crested newts would be found upon the site at any time and no further surveys or mitigation is recommended.

### **4.7 Reptiles**

The proposed construction zones lack any suitable reptile habitat as they are comprised of tarmac and concrete slab hard standing, tightly mown amenity lawn and well managed flower beds supporting ornamental shrubs which lack any understory vegetation.

As a result, no further surveys are recommended for this species. However, the amenity grassland must be maintained to a height of below 5cm in height prior to construction to prevent potentially suitable habitat from establishing.



## ***March House, West Lavington –Bat Scoping and PEA***

### ***4.8 Conclusions***

Amenity grassland, hard standing, ornamental shrub beds, a cypress tree and potentially a cherry tree will be impacted through the proposed works. Given the habitats present and the garden being tightly managed the proposed construction zones lack habitat to support protected species.

A bat emergence survey will be necessary if the roof tiles of the single story sloped extension on the eastern face of March House if these are to be impacted by the construction of an extension.

**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.



## 5 APPENDIX 1 –PLANNING POLICY AND WILDLIFE LEGISLATION

### General

This brief summary is for guidance only and describes the legal protection afforded to protected species. It is not intended to be comprehensive or to replace specialised legal advice.

### Badger

The Badger is protected in Britain under the Protection of Badgers Act (1992) and Schedule 6 of the Wildlife and Countryside Act 1981 (as amended).

The legislation affords protection to Badger and Badger setts, and makes it a criminal offence to:

- wilfully kill, injure, take, possess or cruelly ill-treat a Badger, or to attempt to do so;
- interfere with a sett by damaging or destroying it;
- to obstruct access to, or any entrance of, a Badger sett; or
- to disturb a Badger when it is occupying a sett.

### Bats, Dormouse and Great Crested Newt

Dormouse (*Muscardinus avellanarius*), Great Crested Newt (*Triturus cristatus*), and all species of British bat (*Vespertilionidae* and *Rhinolophidae*) are listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receive full protection under *Section 9*. These species are also all listed as European Protected Species on *Schedule 2* of the *Conservation (Natural Habitats, etc.) Regulations 1994* which gives them full protection under *Regulation 39*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the CROW Act). Under the above legislation it is an offence to:

- kill, injure or take an individual;
- possess any part of an individual either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by these species for shelter, rest, protection or breeding;
- intentionally or recklessly disturb these species whilst using any place of shelter or protection; or
- sell or attempt to sell any individual.

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. In the case of Dormouse and all species of British bat there is also protection under *Schedule 6* of *The Wildlife and Countryside Act 1981* (as amended) relating specifically to trapping and direct pursuit of these species.

Dormouse, Great Crested Newt and all species of British bat are included as priority species in the *UK Biodiversity Action Plan* and as species of principal importance for the conservation of biological diversity in England under *Section 74* of the *Countryside and Rights of Way (CROW) Act 2000*.

### Reptiles

Common Lizard (*Lacerta vivipara*), Grass Snake (*Natrix natrix*), Slow-worm (*Anguis fragilis*), and Adder (*Vipera berus*) are listed under *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), in respect of *Section 9(5)* and part of *Section 9(1)*. This protection was extended by the *Countryside and Rights of Way (CROW) Act 2000*. Under the legislation it is an offence to:

- intentionally or deliberately kill or injure any individual of these species; or
- sell or attempt to sell any part of these species either alive or dead.



### **March House, West Lavington –Bat Scoping and PEA**

- Smooth snake and sand lizard are also EPS ..

### **Nesting Birds**

All species of bird are protected under *Section 1* of the *Wildlife and Countryside Act 1981* (as amended). Protection was extended by the *Countryside and Rights of Way (CRoW) Act 2000*. Under the above legislation it is an offence to intentionally:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

Certain species are listed on *Schedule 1* of the *Wildlife and Countryside Act 1981* (as amended) and receive protection under *Sections 1(4)* and *1(5)*. The protection was extended by the *Countryside and Rights of Way (CRoW) Act 2000*. There are special penalties where the offences listed above are committed for any *Schedule 1* species and it is also an offence to intentionally or recklessly:

- disturb any such bird when it is building its nest or while it is in or near a nest containing dependant young; or
- disturb the dependant young of any such bird.

### **Roman Snails**

In 2008, the Roman snail (*Helix pomatia*) was added to *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and it became an offence to intentionally kill, injure or take individuals of this species.





## 6 APPENDIX 2 - GREAT CRESTED NEWT 'HABITAT SUITABILITY INDEX' VALUES.

	Garden Pond	
SI attribute	SI value	Notes
Location	1.00	Location A
Pond area	0.01	4m <sup>2</sup>
Pond drying	0.90	Never
Water quality	0.67	Moderate
Shade cover	1.00	0%
Water-fowl	1.00	Absent
Fish presence	0.01	Stocked with goldfish
No. ponds	1.00	
Terrestrial habitat	0.33	Poor – surrounded by hard standing gravel and concrete slabs on all sides beyond which is amenity grassland
Macrophytes	0.36	5% macrophyte cover of water lilly
<b>H.S.I. value</b>	<b>0.30</b>	<b>Poor</b>



## **7 APPENDIX 3 - ARTIFICIAL LIGHTING AND WILDLIFE**

### **Interim Guidance: Recommendations to help minimise the impact of artificial lighting - produced by The Bat Conservation Trust**

Wherever human habitation spreads, so does artificial lighting. This increase in lighting has been shown to have an adverse effect on our native wildlife, particularly on those species that have evolved to be active during the hours of darkness. Consequently, development needs to carefully consider what lighting is necessary and reduce any unnecessary lighting, both temporally and spatially. When the impacts on different species groups are reviewed, the solutions proposed have commonalities that form the basis of good practice. These are outlined in the following document.

#### **Overview of impacts**

##### **Invertebrates**

Artificial light significantly disrupts natural patterns of light and dark, disturbing invertebrate feeding, breeding and movement, which may reduce and fragment populations. Some invertebrates, such as moths, are attracted to artificial lights at night. It is estimated that as many as a third of flying insects that are attracted to external lights will die as a result of their encounter.<sup>1</sup> Insects can become disoriented and exhausted making them more susceptible to predation. In addition, the polarisation of light by shiny surfaces attracts insects, particularly egg laying females away from water. Reflected light has the potential to attract pollinators and impact on their populations, predators and pollination rates. Many invertebrates natural rhythms depend upon day-night and seasonal and lunar changes which can be adversely affected by artificial lighting levels.

It is not always easy to disentangle the effects of lighting on moths from other impacts of urbanisation. However, it is known that UV and green and blue light, which have short wavelengths and high frequencies, are seen by most insects and are highly attractive to them. Where a light source has a UV component, male moths in particular will be drawn to it. Most light-induced changes in physiology and behaviour are likely to be detrimental. They discern it to be 'light', so they do not fly to feed or mate.<sup>2</sup>

##### **Birds**

There are several aspects of changes to bird behaviour to take into account. The phenomenon of robins and other birds singing by the light of a street light or other external lighting installations is well known, and research has shown that singing did not have a significant effect on the bird's body mass regulation. However, it was felt that the continual lack of sleep was likely to be detrimental to the birds' survival and could disrupt the long-term circadian rhythm that dictates the onset of the breeding season<sup>3</sup>. Many species of bird migrate at night and there are well-documented cases of the mass mortality of nocturnal migrating birds as they strike tall lit buildings. Other UK bird species that are particularly sensitive to artificial lighting are long-eared owls, black-tailed godwit and stone curlew.<sup>4</sup>

##### **Mammals**

A number of our British mammals are nocturnal and have adapted their lifestyle so that they are active in the dark in order to avoid predators. Artificial illumination of the areas in which these mammals are active and foraging is likely to be disturbing to their normal activities and their foraging areas could be

---

<sup>1</sup> Bruce-White C and Shardlow M (2011) A Review of the Impact of Artificial Light on Invertebrates - See more at: <http://www.buglife.org.uk/advice-and-publications/publications/campaigns-and-reports/review-impact-artificial-light#sthash.s7GPA1vL.dpuf>

<sup>2</sup> As above

<sup>3</sup> Pollard A. (2009) Visual constraints on bird behaviour. University of Cardiff

<sup>4</sup> Rodriguez A., Garcia A.M., Cervera F. and Palacios V. (2006) Landscape and anti-predation determinants of nest site selection, nest distribution and productivity in Mediterranean population of Long-eared Owls, *Asio otus*. *Ibis*, 148(1), pp.133-145

lost in this way. It is thought that the most pronounced effect is likely to be on small mammals due to their



## **March House, West Lavington –Bat Scoping and PEA**

need to avoid predators. However, this in itself has a knock-on effect on those predators.

The detrimental effect of artificial lighting is most clearly seen in bats. Our resident bat species have all suffered dramatic reductions in their numbers in the past century. Light falling on a bat roost exit point, regardless of species, will at least delay bats from emerging, which shortens the amount of time available to them for foraging. As the main peak of nocturnal insect abundance occurs at and soon after dusk, a delay in emergence means this vital time for feeding is missed. At worst, the bats may feel compelled to abandon the roost. Bats are faithful to their roosts over many years and disturbance of this sort can have a significant effect on the future of the colony. It is likely to be deemed a breach of the national and European legislation that protects British bats and their roosts.

In addition to causing disturbance to bats at the roost, artificial lighting can also affect the feeding behaviour of bats and their use of commuting routes. There are two aspects to this: one is the attraction that short wave length light (UV and blue light) has to a range of insects; the other is the presence of lit conditions.

As mentioned, many night-flying species of insect are attracted to lamps that emit short wavelength component. Studies have shown that, although noctules, serotines, pipistrelle and Leisler's bats, take advantage of the concentration of insects around white street lights as a source of prey, this behaviour is not true for all bat species. The slower flying, broad-winged species, such as long-eared bats, barbastelle, greater and lesser horseshoe bats and the *Myotis* species (which include Brandt's, whiskered, Daubenton's, Natterer's and Bechstein's bats) generally avoid external lights.

Lighting can be particularly harmful if it illuminates important foraging habitats such as river corridors, woodland edges and hedgerows used by bats. Studies have shown that continuous lighting along roads creates barriers which some bat species cannot cross<sup>5</sup>. It is also known that insects are attracted to lit areas from further afield. This could result in adjacent habitats supporting reduced numbers of insects, causing a further impact on the ability of light-avoiding bats to feed.

These are just a few examples of the effects of artificial lighting on British wildlife, with migratory fish, amphibians, some flowering plants, a number of bird species, glow worms and a range of other invertebrates all exhibiting changes in their behaviour as a result of this unnatural lighting.

## **Recommendations**

### **Survey and Planning**

The potential impacts of obtrusive light on wildlife should be a routine consideration in the Environmental Impact Assessment (EIA) process<sup>6</sup>. Risks should be eliminated or minimised wherever possible. Some locations are particularly sensitive to obtrusive light and lighting schemes in these areas should be carefully planned.

In August 2013, Planning Minister Nick Boles launched the new National Online Planning Guidance Resource aimed at providing clearer protection for our natural and historic environment. The guidance looks at when lighting pollution concerns should be considered and is covered within one of the on line planning practice guides<sup>7</sup>. The guide provides an overview for planners with links to documents that aim to give planners an overview of the subject through the following discussion points:

---

<sup>5</sup> Stone E. L., Jones G and Harriss (2009) Street lighting disturbs commuting bats. *Current Biology*, 19, pp 1-5

<sup>6</sup> See also: Institution of Lighting Professionals – Professional Lighting Guide (PLG 04) Guidance on undertaking lighting environmental impact assessments)

1. When is obtrusive light / light pollution relevant to planning?



## **March House, West Lavington –Bat Scoping and PEA**

2. What factors should be considered when assessing whether a development proposal might have implications for obtrusive lighting / light pollution?
3. What factors are relevant when considering where light shines?
4. What factors are relevant when considering how much the light shines?
5. What factors are relevant when considering possible ecological impact?

This can help planners reach the right design through the setting of appropriate conditions relating to performance and mitigation measures at the planning stage.

The Institution of Lighting Professionals (ILP) recommends that Local Planning Authorities specify internationally recognised environmental zones for exterior lighting control within their Development Plans<sup>8</sup>. In instances lacking classification, it may be necessary to request a Baseline Lighting Assessment/Survey conducted by a Lighting Professional in order to inform the classification of areas, particularly for large-scale schemes and major infrastructure projects.

When assessing or commissioning projects that include the installation of lighting schemes, particularly those subject to the EIA process, the following should be considered and relayed to applicants:

- **Ecological consultants should confirm the presence of any sensitive fauna and flora**, advising the lighting designers of bat routes and roosts and other areas of importance in order to ensure that reports correspond with each other.
- **Ecological consultants should consider the need for quantitative lighting measurements**. In some instances it may be necessary for further lighting measurements to be taken. For example, outside an important bat roost. These should follow best practice guidance from the ILP and would ideally be conducted by a Lighting Professional.
- **Where appropriate, professional lighting designers should be consulted** to design and model appropriate installations that achieve the task but mitigate the impacts. This should be done at the earliest opportunity. Early decisions can play a key role in mitigating the impact from lighting.
- **Reports submitted should outline the impacts of lighting in relation to ecology**, making clear reference to the ecological findings, highlighting any sensitive areas and detail proposed mitigation. Consideration should also be given to internal lighting where appropriate.
- **Post –installation checks and sign off upon commissioning should be carried out** by the lighting designer to ensure that the lighting installation has been installed in accordance with the design, that predictions were accurate and mitigation methods have been successful.

### **Principles and design considerations**

#### **Do not**

- **provide excessive lighting**. Use only the minimum amount of light needed for the task.
- **directly illuminate bat roosts** or important areas for nesting birds

#### **Avoid**

- **installing lighting in ecologically sensitive areas** such as: near ponds, lakes, rivers, areas of high conservation value; sites supporting particularly light-sensitive species of conservation significance (e.g. glow worms, rare moths, slow-flying bats) and habitat used by protected species.
- **using reflective surfaces under lights**.

#### **Do**

- **consider employing a competent lighting designer** who will apply the principals of providing the right light, in the right place, at the right time and controlled by the right system.
- **minimise the spread of light** to at, or near horizontal and ensure 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.



## March House, West Lavington –Bat Scoping and PEA

- **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
- **consider no lighting solutions where possible** such as white lining, good signage and LED cats eyes. These options can also be effective. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times.
- **use temporary close-boarded fencing until vegetation matures**, to shield sensitive areas from lighting.
- **limit the times that lights are on to provide some dark periods.** The task being lit often varies, for example roads are less used after 23.00hrs and car parks are empty. A lighting designer can vary the lighting levels as the use of the area changes reducing lighting levels or perhaps even switching installations off after certain times. This use of adaptive lighting can tailor the installation to suit human health and safety as well as wildlife needs.

### Technological specifications

Research from the Netherlands has shown that spectral composition does impact biodiversity.

- **Use narrow spectrum light sources** to lower the range of species affected by lighting.
- **Use light sources that emit minimal ultra-violet light**
- **Lights should peak higher than 550 nm**
- **Avoid white and blue wavelengths of the light spectrum** to reduce insect attraction and where white light sources are required in order to manage the blue short wave length content they should be of a warm / neutral colour temperature <4,200 kelvin.

Further guidance on the spectral composition of artificial lighting will be made available following the publication of research from the Netherlands.

### Further reading:

- A review of the impact of artificial light on invertebrates. Buglife. 2011
- Royal Commission on Environmental Pollution. 2009. Artificial light in the environment. London, HMSO
- The Ecological Consequences of Artificial Night Lighting" edited by Longcore and Rich
- Shedding Light: A survey of local authority approaches to lighting in England. CPRE 2014

---

<http://planningguidance.planningportal.gov.uk/blog/guidance/light-pollution/when-is-light-pollution-relevant-to-planning/>, <http://planningguidance.planningportal.gov.uk/blog/guidance/light-pollution/when-is-light-pollution-relevant-to-planning/>

<sup>8</sup> Institution of Lighting Professionals (2011) Guidance Notes for the Reduction of Obtrusive Light GN01:2011

