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<b>Site Name</b>	Liphook Services, Northbound
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## Executive Summary

Ecosupport Ltd was instructed by PNH Properties to undertake a Preliminary Ecological Appraisal (PEA) of Liphook Service Station located on the northbound carriageway of the A3 (here after referred to as 'the site') to identify any potentially important ecological features that may be affected by the proposed development. As part of this assessment, the following surveys were undertaken:

- Preliminary Ecological Appraisal (January 2021)
- Preliminary Roost Assessment (January 2021)

The following important ecological features were identified on site following the conclusion of the above survey work and may be subject to adverse impacts in the absence of suitable mitigation / compensation:

- Moderate potential for foraging and commuting Badgers
- Low potential for breeding and nesting birds
- Potential for Dormice within the surrounding area
- Potential for Hibernating reptiles

In the absence of any mitigation measures, the proposed development is anticipated to result in, **potential adverse effects**. Suitable mitigation measures and enhancements are outlined within section 6.0 of this document.

## 1.0 INTRODUCTION

### 1.1 Brief

Ecosupport Ltd was commissioned by PNH Properties to conduct a Preliminary Ecological Appraisal (PEA) of Liphook Service Station located on the northbound carriageway of the A3 (here after referred to as 'the site'). The purpose of this survey was to assess any ecological impacts that may arise as a result of the proposed development. The objectives of the survey were as follows:

- Identify and classify any priority habitats;
- Assess the ecological value of the site;
- Identify any signs of protected species and potential features that may support them
- Make recommendations for further survey work as necessary;
- Make recommendations for any necessary ecological avoidance and mitigation where possible at PEA stage.

***NB: If the works do not take place within 18 months of this report<sup>1</sup> then the findings of this survey will no longer be considered valid and may require updating.***

### 1.2 Site Description & Location

The site comprises of the Starbucks coffee shop and associated grounds which form part of the Liphook northbound service station, Liphook, GU30 7TT (centred on OS grid reference SU 8279132325) (**Fig 1**). The north and west of the site are bounded by woodland, the east by carpark and the travelodge and the south by a petrol station with the A3 just beyond this. The immediate surrounding environ is predominantly rural with arable fields and woodland dominating the landscape.

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<sup>1</sup> <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

**Figure 1.** Redline boundary of the site to be impacted with blue line indicating the area to be unimpacted at this stage (google maps 2021).



### 1.3 Proposed Development

The proposed development entails the conversion of the existing Starbucks into a drive through and the creation of a new drive through McDonalds and new parking areas.

## 2.0 RELEVANT LEGISLATION AND POLICY

### 2.1 Legislation

#### 2.1.1 *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019)*

This instrument makes changes to the three existing instruments which transpose the Habitats and Wild Birds Directives so that they continue to work (are operable) upon the UK's exit from the European Union (EU). These include The Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017. This instrument also amends section 27 of the Wildlife and Countryside Act 1981 to ensure existing protections continue.

The intention is to ensure habitat and species protection and standards as set out under the Nature Directives are implemented in the same way or an equivalent way when the UK exits the EU.

This transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law. It provides protection for sites and species deemed to be of conservation importance across Europe. It is an offence to deliberately capture, kill or injure species listed in Schedule 2 or to damage or destroy their breeding sites or shelter. It is also illegal to deliberately disturb these species in such a way that is likely to significantly impact on the local distribution or abundance or affect their ability to survive, breed and rear or nurture their young.

In order for activities that would be likely to result in a breach of species protection under the regulations to legally take place, a European Protected Species (EPS) licence must first be obtained from Natural England.

#### 2.1.2 *The Wildlife and Countryside Act (1981) (as amended)*

This is the primary piece of legislation by which biodiversity is protected within the UK. Protected fauna and flora are listed under Schedules 1, 5 and 8 of the Act. They include all species of bats, making it an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost. Similarly, this Act makes it an offence to kill or injure any species of British reptiles and also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built).

The Wildlife & Countryside Act (1981) states that it is an offence to 'plant or otherwise cause to grow in the wild' any plant listed in Schedule 9 art II of the Act. This list over 30 plants including Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum mantegazzianum*) and Parrots Feather (*Myriophyllum aquaticum*).

#### 2.1.3 *The Countryside and Rights of Way Act (2000)*

This Act strengthens the Wildlife & Countryside Act by the addition of "reckless" offences in certain circumstances, such as where there is the likelihood of protected species being



present. The Act places a duty on Government Ministers and Departments to conserve biological diversity and provides police with stronger powers relating to wildlife crimes.

#### *2.1.4 Natural Environment and Rural Communities Act (2006)*

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 requires that public bodies must have due regard to the conservation of biodiversity with a particular regard to species and habitats considered to be of greatest conservation importance. This means that Planning authorities must consider biodiversity and the list of species and habitats of importance when planning or undertaking activities.

Section 41 of the Act lists species and habitats found in England which are considered to be priority species and were identified as requiring action under the UK Biodiversity Action Plan. The latest update to the list of Section 41 habitats of principal importance under the *UK Post – 2010 Biodiversity Framework* includes 56 listed habitats including arable field margins, traditional orchards, hedgerows and several specific habitats within the categories of coastal, grassland, freshwater, inland rock, marine, wetland and woodland. The latest update to the list of Section 41 species of principal importance was in May 2014 and now includes a list of 943 species covering a range of species including vertebrates, terrestrial and marine invertebrates, plants and fungi.

#### *2.1.5 Protection of Badgers Act*

The Protection of Badgers Act (1992) relates to the welfare of Badgers (*Meles meles*) as opposed to nature conservation considerations. The Act prevents:

- The wilful killing, injury, ill treatment or taking of Badgers and / or
- Interference with a Badger sett
- Damaging or destroying all or part of a sett
- Causing a dog to enter a set and
- Disturbing a Badger while it is occupying a sett

Provisions are included within the Act to allow for the lawful licensing of certain activities that would otherwise constitute an offence under the Act.

## **2.2 Policy**

### *2.2.1 National*

The revised National Planning Policy and Framework (NPPF) (last updated February 2019) replaces the previous NPPF (published 2012, revised July 2018) and sets out the Government's vision for biodiversity in England in line with the country's 25 Year Environment Plan. The revised NPPF is supported by the National Planning Practice Guidance (NPPG) (published January 2016, last updated July 2019). The relevant section of the Guidance concerning biodiversity is 'Natural Environment: Biodiversity, Geodiversity and Ecosystems'. Under this

Guidance, Local Authorities' duty to have due regard to the conservation of biodiversity under the NERC Act (2006) is highlighted.

Chapter 15 of the revised NPPF, 'Conserving and Enhancing the Natural Environment', together with associated guidance within the NPPG, outlines key principles related to the natural environment.

Development plans should contribute to and enhance the natural environment. Plans should take both an individual and strategic approach to minimising biodiversity impacts, creating, conserving, restoring and enhancing priority habitats and habitat networks, protecting and aiding in the recovery of priority species and their populations, and providing measurable biodiversity net gains. Individual developments must consider how they can contribute to habitat networks in the wider area (including as part of the Nature Recovery Network), thereby increasing their resilience to current and future pressures.

### *2.2.2 Local*

Local planning policy within East Hampshire is outlined within the Local Plan: Joint Core Strategy (2014). Within this document Policy CP21 deals with biodiversity stating the following:

*'Development proposals must maintain, enhance and protect the District's biodiversity and its surrounding environment.'*

*New development will be required to:*

*a) Maintain, enhance and protect district wide biodiversity, in particular the nature conservation designations (see Map 2).*

*i) Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar (International);*

*ii) Sites of Special Scientific Interest (SSSI) and National Nature Reserves (National);*

*iii) Sites of Importance for Nature Conservation (SINC) (Hampshire) and Local Nature Reserves (LNR).*

*b) Extend specific protection to, and encourage enhancement of, other sites and features which are of local value for wildlife, for example important trees, rivers, river corridors and hedgerows, but which are not included in designated sites.*

*c) Contribute towards maintaining a district-wide network of local wildlife sites, wildlife corridors and stepping stones between designated sites and other areas of biodiversity value or natural green space. This will help to prevent the fragmentation of existing habitats and*

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*allow species to respond to the impacts of climate change by making provision for habitat adaptation and species migration. This is supported by Policy CP28 (Green Infrastructure) and the District's Green Infrastructure work.*

*d) Ensure wildlife enhancements are incorporated into the design to achieve a net gain in biodiversity by designing in wildlife and by ensuring that any adverse impacts are avoided where possible or, if unavoidable, they are appropriately mitigated for, with compensatory measures only used as a last resort.*

*e) Protect and, where appropriate, strengthen populations of protected species;*

*f) Protect and enhance open spaces in accordance with the District's 'Open Space, Sports and Built Facilities Study', Policy CP17 (Protection of open space, sport & recreation) and Policy CP28 (Green Infrastructure). The provision of open space should be in advance of the relevant new developments being occupied.'*

### **2.3 Biodiversity Action Plans & UK Post-2010 Biodiversity Framework**

The UK Post-2010 Biodiversity Framework (JNCC & DEFRA, 2010) supersedes the UK Biodiversity Action Plan 1992-2012 (UKBAP), setting out goals relating to nature conservation at a UK scale, for example the reduction and reversal in the decline of threatened species and improving the status of biodiversity. The specific habitats and species contained within the UKBAP continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework, and are required to be a material consideration in the planning process under the 2019 NPPF.

## 3.0 METHODOLOGY

### 3.1 Desk Study

#### 3.1.1 Data Request

A data request was submitted to Hampshire Biodiversity Information Centre (HBIC) to ascertain any records held of nature conservation designations and protected species within 1 mile of the boundary of the site.

The data search covered:

- Statutory designated sites
- Non-statutory designations such as SINCs
- Records of protected and notable species.
- Records for waders and Brent Geese

#### 3.1.2 Waterbodies

Any ponds located within 250m of the proposed development were searched for using Ordnance Survey maps and available aerial images.

### 3.2 Field Survey

#### 3.2.1 Habitats

The field survey work which forms the basis of the findings of this report was carried out by Aaron Domblides, a Project Ecologist with Ecosupport (3 years post MSc graduation experience) on the 4<sup>th</sup> January 2021.

The Phase 1 Habitat survey (JNCC, 2010) methodology was adopted which is a method of classifying and mapping wildlife habitats in Great Britain. It was originally intended to provide “...relatively rapidly, a record of semi-natural vegetation and wildlife habitat over large areas of the countryside”. The standard Phase 1 Habitat survey methodology has been ‘extended’ in this report to include the following:

- Floral species lists for each identified habitat;
- Descriptions of habitat structure, the evidence of management and a broad assessment of habitat condition;
- Mapping of additional habitat types (e.g. hardstanding);
- Identification of Priority Habitats under Section 41 of the NERC Act;
- Evidence of, or potential for, the presence of certain species/groups

#### 3.2.2 Badger

The site was thoroughly searched for evidence of use by Badgers (*Meles meles*), with the specific aim of identifying the presence and location of any setts. In accordance with the *Badgers and Development: A Guide to Best Practice and Licensing* (Natural England, 2011) guidance, the survey extended for a 30m from the site’s boundary (observed where possible i.e. does not conflict with private dwellings). Evidence of Badgers could include latrines, dung

pits, feeding remains and foraging evidence, trails and setts.

### 3.2.3 Bats

The trees and the hotel located within the development site were assessed for any potential to support roosting and resting bats by externally searching for Potential Roost Features (PRFs) (which may include fissures / cracks in branches, platey bark, occluded wounds, Ivy with a stem diameter of > 50mm, gaps under roof tiles or gaps / holes in soffits) and any evidence of bat occupation within the loft void. The methods outlined within *Bat Surveys for Professional Ecologists: Good Practice Guidelines 3<sup>rd</sup> Edition* (Collins (ed) 2016) were followed and the assessment was conducted by Aaron Domblides of Ecosupport in January 2021 (acting under the license of Adam Jessop NE class level 2 bat licence number 2015-13366-CLS-CLS).

## 3.3 Assessment Methodology

### 3.3.1 Introduction

The methodology for the assessment of the likely ecological effects of the proposed development is based on CIEEM's *Guidelines for Ecological Assessment in the UK* (CIEEM 2018). Although this assessment does not constitute a formal Ecological/ Environmental Impact Assessment, the CIEEM guidelines provide a useful framework for assessing ecological impacts at any level.

### 3.3.2 Valuation

Features of ecological interest are valued on a geographic scale. Value is assigned on the basis of legal protection, national and local biodiversity policy and cultural and/or social significance.

## 3.4 Limitations

The only minor limitation was the time of year that the survey was undertaken (January 2021) meaning that it was outside the optimal time of year for flowering vascular plants. However given the nature of the habitats on site this was not considered to significantly alter the assessment of the site in regards to its ecological value.

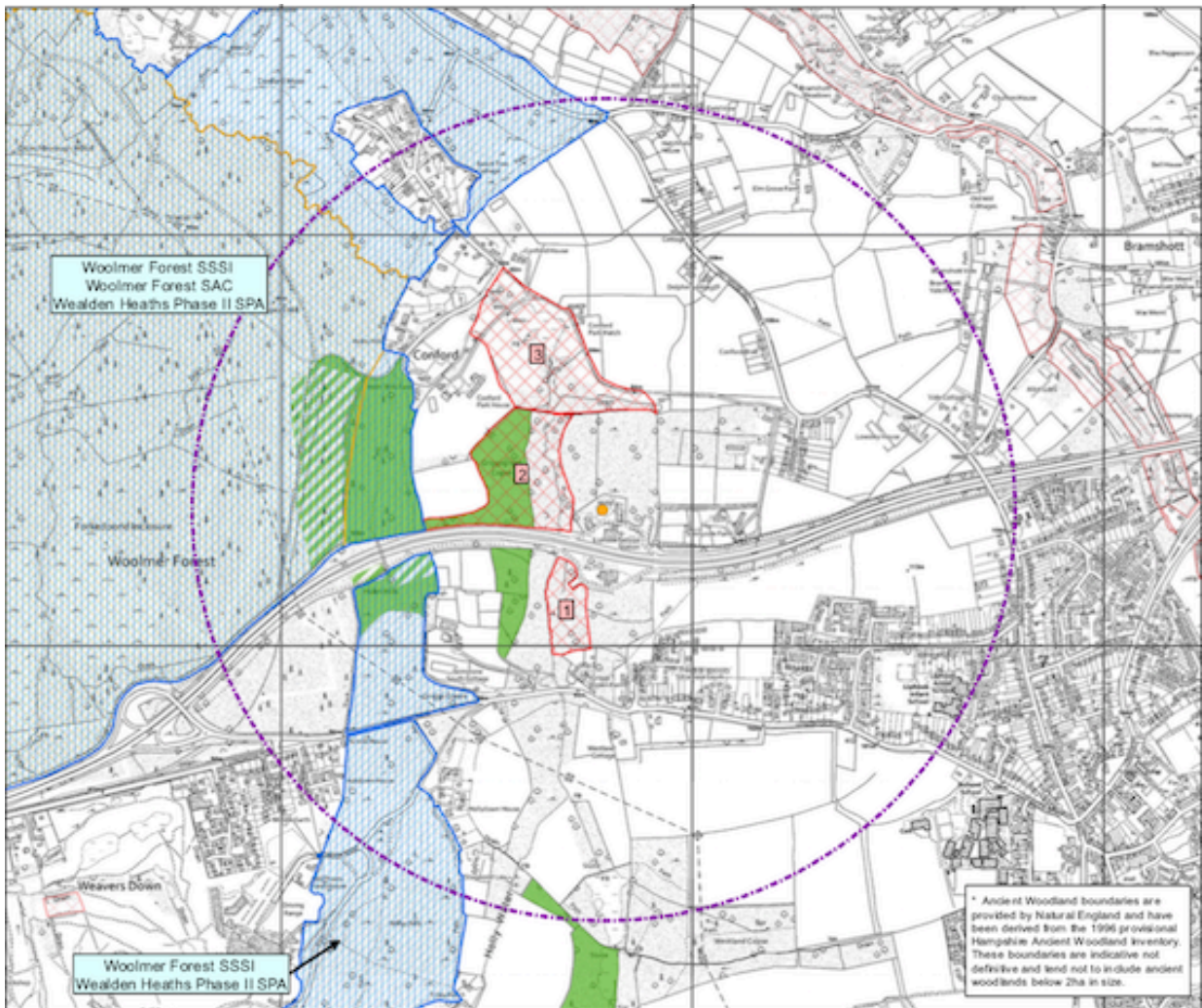
## 4.0 ECOLOGICAL BASELINE

### 4.1 Designated Sites

#### 4.1.1 Statutory

Fig 2 below displays the map provided by HBIC with the statutory and non-statutory designated sites located within 1 m of the site. The only statutory designated site is the Woolmer Forest Heaths SSSI / Wealden Heaths Phase II SPA (with part of this site falling within the 400m SPA buffer although as this is a commercial application, there are no issues envisaged with increased visitor pressure).

Figure 2. Map of designated sites (HBIC 2021)



#### 4.1.2 Non-Statutory

A number of SINC's are located within 1km of the site which are all detailed within **Table 1** below.

Table 1. Summary of SINC designations within 1 m of the site.

SINC Name	SINC Reference & Map Label	Distance / Direction	Designation criteria
Griggs Green Farm Woodland	EH0526 (3)	0.1 km across A3	Cii
Griggs Green Copse & adjacent Woodland	EH0527 (4)	Bounds western edge of site	1A/1Cii/6A <i>Chrysosplenium alternifolium</i> (Alternate-Leaved Golden-Saxifrage) [CR]
Woodland & Fen alongside Hollywater	EH0528 (5)	0.3 m N	1Cii

## 4.2 Vegetation Survey Results

The vegetation within the site has been described below using the broad Phase I habitat classification terminology as described with JNCC (2010). The below species noted should not be considered an exhaustive list and instead refer to dominant, characteristic and other noteworthy species associated with each community within the survey area. The habitat types on site comprise:

- Amenity grassland
- Scattered trees
- Scrub / ornamental shrubs
- Bare ground
- Hardstanding

### 4.2.1 Amenity grassland

Amenity grassland was noted around the outside of the carpark as well as surrounding the buildings on site (**Fig 3**). Species recorded included CatsEar (*Hypochaeris radicata*), Ragwort (*Jacobaea vulgaris*), Dandelion (*Taraxacum agg.*), Daisy (*Bellis perennis*), Spear Thistle (*Cirsium vulgare*), Perennial Rye-Grass (*Lolium perenne*), Bristly Oxtongue (*Helminthotheca echioides*), Nettles (*Urtica dioica*), Cocks Foot (*Dactylis glomerata*), Self-Heal (*Prunella vulgaris*), Ribwort Plantain (*Plantago lanceolata*), Broad-Leaved Dock (*Rumex obtusifolius*), Moss, Creeping Buttercup (*Ranunculus repens*), Ground Ivy (*Glechoma hederacea*), Mouse-ear Chickweed (*Cerastium vulgatum*), Mallow (*Malva sylvestris*), Hedge Woundwort (*Stachys sylvatica*) and *Juncus spp.*

**Figure 3.** View of amenity grassland area adjacent to carpark



#### 4.2.2 Scattered Trees

There are some scattered trees across the site predominantly around the edge of the site. Species included Silver Birch (*Betula pendula*), Oak (*Quercus* spp), Alder and Holly.

**Figure 4.** Scattered trees adjacent to the existing starbucks.





#### 4.2.3 Ruderal

There are small areas of scrub comprising of bramble and bracken along the boundary of the site, however due to the ongoing management regime this does not encroach onto the site at present. The only exception to this is a small area of bracken surrounding a log pile on the north western boundary (**Fig 5**).

**Figure 5.** Small area of bracken on north western boundary



#### 4.2.4 Bare Ground

There are patches of bare ground on site which have formed as a result of the shade created by the tree canopy as well as management works to the site and some mammal activity (**Fig 5**). Species noted growing in these patches included Bracken (*Pteridium aquilinum*), Common Nettles and oak Saplings.

**Figure 6.** Bare ground likely created from mammal activity on site



#### *4.2.5 hard standing*

The majority of the site comprises hard standing tarmac car park for the Starbucks and the disused hotel.

**Figure 7.** Hard standing carpark on site



#### 4.2.6 Buildings

There is one building located on site within the redline plan and is described in greater detail in the below section with respect to any bat roosting potential.

### 4.3 Bat Survey Results

#### 4.3.1 Pre existing data

The HBIC data request returned records for Serotine (*Eptesicus serotinus*) (4 records), Noctule (*Nyctalus noctula*) (7 records), Leisler's (*Nyctalus leiserli*) (1 record), *Myotis* spp (2 record), Daubenton's Bat (*Myotis daubentonii*) (1 record), Natterer's Bat (*Myotis nattereri*) (3 records), *Pipistrellus* spp (6 records), Nathusius's Pipistrelle (*Pipistrellus nathusii*), Common Pipistrelle (*Pipistrellus pipistrellus*) (29 records), Soprano Pipistrelle (*Pipistrellus pygmaeus*) (10 records), *Plecotus* spp (3 record) and Brown Long Eared (*Plecotus auritus*) (7 records).

#### 4.3.2 Buildings

Within the boundary of the site is a single building which is a Starbucks coffee shop and is only to be minimally impacted upon by the proposals (the installation of a window to facilitate the creation of the drive through and the roof will therefore not be affected by the current proposals). Therefore the proposals are considered to have a negligible impact on bats.

#### 4.3.3 Trees

Following a ground based assessment of all the trees which are to be directly impacted upon under current plans (all of which are immature), no PRF's were found and they were therefore considered to be of **Negligible** potential for roosting bats. It is understood that no mature trees (inside or outside of the site boundaries) are to be removed as part of the proposals however if this is to change a detailed assessment of these trees will be necessary.

### 4.4 Badgers

#### 4.4.1 Pre existing information

HBIC hold only a single record for Badgers located on the southbound side of the A3 0.4 m away from the site.

#### 4.4.2 Site survey

During the walkover survey no mammal holes were noted. There was however evidence of potential Badger foraging activity noted on site (i.e. ground disturbances from earth worm foraging) although no evidence of set building was observed. It is therefore considered likely a sett is present within the adjacent woodland area and the amenity grassland and bare ground habitats on site are used by foraging and commuting Badger.

### 4.5 Reptiles

#### 4.5.1 Pre existing information

HBIC hold records for Adder (*Vipera berus*) (2 records) (both of which are located to the south of the A3 (approximately 0.4km away), with no other reptile records held.

#### 4.5.2 On site habitat assessment

As a result of the grassland areas being well managed and lacking in the required structure and heterogeneity for reptiles, the vast majority of site was considered to be **Negligible**. However there is a log pile (**Fig 4**) located on the northern boundary which provides ideal hibernating habitat for reptiles. Given that this is located immediately adjacent to areas of scrub / bracken in the adjacent woodland, it is considered that there is potential for Reptiles to utilise this small area.

#### 4.6 Great Crested Newts

HBIC do not hold any records of Great Crested Newt (*Triturus cristatus*) from within 1 km of the site.

Aerial and OS maps indicate there are no ponds located within 250m of the site although there is a stream leading from a large pond running through Grigsgreen Copse within 50m of the western boundary of the site. It was not possible to access this ditch at the time of the survey due to access constraints however given the absence of ponds within 250m of the sites boundary, the absence of GCN records from within 1km and the nature of the habitats present on site, it is considered unlikely there will be any impacts to GCN.

#### 4.7 Hazel Dormouse

##### 4.7.1 Pre existing information

HBIC hold a number of local records for Dormice (5 records in total) with some of the closer ones to the site shown in **Fig 8**. Dormice were also found in the woodland and habitats surrounding the south bound service station during the Dormouse survey undertaken by Ecosupport (2017) in support of another planning application.

**Figure 8.** The two low resolution grid references for the 9 records of Dormice presence provided by HBIC.



#### 4.7.2 Site assessment

The site boundaries and surrounding woodland habitat to the north, west and east of the site can be considered to provide suitable habitat for Dormice especially when considering the nearby records (which would indicate likely presence within these habitats). Notwithstanding this, there is very little in the way of suitable habitat within the site itself and is largely limited to scattered trees (with no understory) and some isolated patches of ornamental shrub. The small patch of bracken, log pile and small areas of leaf litter do however provide sub-optimal habitat for nesting dormice and suitable hibernating habitat for Dormice and as such the site is considered to be of **Low** potential for Dormice.

#### 4.8 Birds of Conservation Concern (BoCC)

Given the nature of the habitats around the site (nearby SPA / SSSI), HBIC hold a high number of records for BoCC, some of these have been listed in Table 2 below which also indicates if suitable habitat for the species is located on site.

**Table 2.** BoCC data as provided and HBIC and the presence of any suitable habitat for that species on site. NB Wetland birds have been excluded.

Species as Provided by HBIC Data	Scientific Name	Suitable Habitat on Site (Y/N)
Lesser Redpoll	<i>Acanthis cabaret</i>	Y woodland edge
Skylark	<i>Alauda arvensis</i>	Y but limited nesting opportunities
Hawfinch	<i>Coccothraustes coccothraustes</i>	Y trees
Cuckoo	<i>Cuculus canorus</i>	Y trees
Lesser Spotted Woodpecker	<i>Dendrocopos minor</i>	Y woodland edge
Pied Flycatcher	<i>Ficedula hypoleuca</i>	Y mature woodland edge
Nightingale	<i>Luscinia megarhynchos</i>	Y dense shrub
Spotted Flycatcher	<i>Muscicapa striata</i>	Y woodland / trees
Marsh Tit	<i>Poecile palustris</i>	Y woodland edge and grassland
Song Thrush	<i>Turdus philomelos</i>	Y woodland edge
Fieldfare	<i>Turdus pilaris</i>	Y tree lines
Mistle Thrush	<i>Turdus viscivorus</i>	Y woodland edge
Lapwing	<i>Vanellus vanellus</i>	N

Although some of the habitat on site is suitable for breeding and nesting birds (the trees and the shrub), the woodland habitat adjacent to the site is considered to be of much greater

value for the BoCC listed above and as a result the site can be considered of **low** potential for breeding and nesting birds.

## 5.0 LIKELY ECOLOGICAL IMPACTS IN ABSENCE OF MITIGATION

### 5.1 Introduction

The CIEEM guidelines (CIEEM 2018) require that the potential impacts of the proposals should be considered in absence of mitigation. In order for a significant adverse effect to occur, the feature being affected must be at least of local value. However, in some cases, features of less than local value may be protected by legislation and/or policy and these are also considered within the assessment. Although significant effects may not be identified at this stage of the assessment, it is often possible to provide appropriate mitigation.

### 5.2 Site Preparation and Construction

#### 5.2.1 Impacts to Habitats

The proposals will involve the loss of areas of amenity grassland, ornamental shrubs and immature trees which are of value only at the **site value**. However in the absence of mitigation the proposals could result in the root compaction of mature trees which are considered to be of value at **Local Level**. Given that some of these trees lie within a SINC (Griggs Green Copse & adjacent Woodland) a **minor impact is possible** at the **County Level**.

#### 5.2.2 Impacts to Wildlife

The scattered trees and ornamental shrubs on site have been identified as holding low potential for breeding and nesting birds. Therefore the removal of scattered trees and shrubs could result in the disturbance to and/or destruction of bird nests. Therefore, a **minor adverse impact is likely** at the **Local Level**.

Although the vast majority of the site is unsuitable for reptiles, the log pile present on the northern boundary provides suitable hibernating / sheltering opportunities for reptiles, with the adjacent habitat to the north of the site (scrub and bracken) considered to provide suitable habitat for reptiles. As a consequence the removal / disturbance of this log pile could result in the harm or even killing of reptiles. Therefore an **adverse impact is possible** at the **local level** in the absence of mitigation.

Clearance works and excavations have the potential to disrupt the commuting habits of foraging mammals (including Badgers) with open excavations posing the risk of trapping individuals if suitable mitigation measures are not followed. Therefore, it is considered an **adverse impact is possible** at the **Local Level**.

Given that the habitat surrounding the site is suitable for Dormice and there are some opportunities for nesting and hibernating Dormice on site (although these areas are very limited in extent and largely suboptimal), the proposals may disturb, harm or even kill individual Dormice (in the unlikely case that they are present on site at the time of the works). Therefore in the absence of mitigation **a minor adverse impact is possible** at the **Local Level**.



## 5.3 Site Operation

### 5.3.1 Impacts to wildlife

The development could result in an increase in lighting on-site from any external lights on the proposed offices / new street lights. This can affect the behaviour, particularly foraging, of nocturnal wildlife such as Dormice and Bats. Therefore, there will be a **potential adverse impact** to nocturnal species at the **Local Level**.

## 6.0 MITIGATION, RECOMMENDATIONS & COMPENSATION

### 6.1 Introduction

The below sections outline a number of recommendations for further survey / proposed mitigation measures that are required. In addition to this, measures are outlined to protect the existing features of value and provide enhancements post development.

### 6.2 Bats

#### 6.2.1 Sensitive lighting

A new document (Guidance Note 08/18 Bats and Artificial Lighting in the UK) has recently been produced via a collaboration between the Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT), which outlines the latest recommendations to minimise the impacts of increased artificial lighting on bats. The key recommendations within this document have been outlined below and will be implemented provided there are no conflicts with any legal limits of illumination (in which case a suitable compromise should be reached).

***‘Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires:***

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used. LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used – See ILP Guidance for the Reduction of Obtrusive Light.

- Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed (**Fig 11**).

**Figure 11.** (a) Shield ‘barn doors’ (b) cowl hood; (c) shield and (d) external louvre Images from ILP (2018).



### 6.3 Dormice

Given the records of Dormice nearby to the site, presence on the site cannot be discounted. Despite this, in its current state the site does not support much in the way of suitable habitat (limited to a very small patch of bracken scrub and trees) and very small patches of suitable hibernating habitat. It is therefore considered adopting a precautionary approach is most proportionate approach (outlined below).

The below precautionary Method Statement will be followed during the removal of all trees and scrubby vegetation on site. The key aspects of this approach will be:

- Cutting back of the vegetation within the site will be carried out sympathetically and under the supervision of a Suitably Licenced Ecologist (SLE) who will search for nests by hand before and during clearance works.
- Clearance of bracken / trees will be carried out between November and March (inclusive) to avoid the bird nesting season and the majority of the period when Dormice occupy above ground nests.

- If any works require stump extraction, these will be left until spring and only removed after the bases have been carefully searched by a SLE.
- The removal of the woodpile will be undertaken outside of the hibernation period (for both reptiles and Dormice) and will therefore be undertaken between April and September. Prior to the removal of this logpile it will be fenced off with appropriate signage attached to prevent it being impacted upon.

**If any active animals are discovered during the works will cease and Natural England consulted (where a EPS may well be necessary). All arising's / cuttings will also be removed from site each day following a hand search by the licenced ecologist.**

#### **6.4 Nesting Birds**

In order to avoid disturbance of nesting birds or damage to their nests, clearance of any shrubs and trees should be undertaken outside of the bird-nesting season (typically March to August, dependant on the weather). If this is not possible, sections to be cleared should be thoroughly checked by an ecologist immediately prior to clearance acting in a Ecological Clerk of Works (ECOW) capacity. If any active nests are found they should be left undisturbed with a suitable buffer of undisturbed vegetation (ca. 5m) until the nestlings have fledged. To replace the lost nesting habitat, 4 bird boxes will be erected onto the retained trees on site. These will be a mix of Vivara pro with 28mm entrance and 32mm entrance. Additionally 2 sparrow terrace nest boxes will be installed onto the renovated offices.

#### **6.5 Protection of Hedgerows and Trees**

All the existing hedgerows and trees that would be retained should be protected from damage during the works. All the hedgerows should be fenced using Heras fencing or similar to prevent access by machinery. Where large mature trees are present, they should be protected using standard arboricultural tree protection measures which include protection of the canopy and prevents root compaction.

#### **6.6 Hedgehogs**

##### *6.6.1 Sensitive vegetation removal*

It is recommended that any areas of shrubby vegetation / log piles are carefully cleared, to ensure that any European Hedgehogs, if present, can be safely relocated away from the construction areas or move away into surrounding habitats of their own accord.

##### *6.6.2 Hedgehog home*

2 Hedgehog homes will be incorporated into the retained boundary vegetation (such as the Igloo Hedgehog home or Hogitat Hedgehog house). These will be provided within or adjacent to areas of planted / retained trees / shrubs and will provide a rapidly declining species with a place to shelter / hibernate.

**6.7 Reptiles**

The steps outlined in the Dormouse section above are deemed sufficient to ensure that reptiles are protected during the works. It is however important that the current management regime is continued to prevent the habitats on site from becoming suitable as reptiles may establish on site due to the adjacent suitable habitat to the north. If any reptiles are found during the works they will be relocated to the habitat present to the north of the site.

**6.8 Badgers**

During the construction phase, any open excavations left overnight should either be covered to prevent commuting Badgers and other mammals falling in or escape ladders should be used to prevent them from becoming trapped. Any open pipework should be checked and then capped nightly.

## 7.0 REFERENCES

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