



# Phase II Bat Survey Report

---

Land Known as Interbridges,  
Emsworth

Ecosupport Ltd  
K4 Keppel,  
Daedalus Park,  
Lee-on-the-Solent  
PO13 9FX

[info@ecosupport.co.uk](mailto:info@ecosupport.co.uk)

VAT: 228 4314 18



|                      |                                              |
|----------------------|----------------------------------------------|
| <b>Report</b>        | Phase II Bat Surveys Report                  |
| <b>Site Name</b>     | Land Known as Interbridges, Emsworth         |
| <b>Author(s)</b>     | Gareth Ainscough BSc (Hons) ACIEEM           |
| <b>Checked by</b>    | Adam Jessop MSc MCIEEM (Principal Ecologist) |
| <b>Client</b>        | PNH Properties Ltd                           |
| <b>Date of Issue</b> | Updated 28 <sup>th</sup> November 2024       |
| <b>Status</b>        | <b><i>For Submission</i></b>                 |

**Table of Contents**

|                                                                                            |           |
|--------------------------------------------------------------------------------------------|-----------|
| <b>Executive Summary .....</b>                                                             | <b>3</b>  |
| <b>1.0 INTRODUCTION .....</b>                                                              | <b>4</b>  |
| 1.1 Brief.....                                                                             | 4         |
| 1.2 Aims .....                                                                             | 4         |
| 1.3 Site Description & Location .....                                                      | 4         |
| 1.4 Proposed Development.....                                                              | 5         |
| <b>2.0 RELEVANT LEGISLATION &amp; POLICY.....</b>                                          | <b>6</b>  |
| 2.1 Legislation .....                                                                      | 6         |
| 2.1.1 The Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019..... | 6         |
| 2.1.2 The Wildlife and Countryside Act (1981) (as amended) .....                           | 6         |
| 2.2 Policy.....                                                                            | 6         |
| 2.2.1 National Planning Policy.....                                                        | 6         |
| 2.2.2 Local – Havant Borough Core Strategy 2011 .....                                      | 8         |
| <b>3.0 METHODOLOGY.....</b>                                                                | <b>10</b> |
| 3.1 Bats .....                                                                             | 10        |
| 3.1.1 Walked Transects/ Night-Time Bat Walkovers.....                                      | 10        |
| 3.1.2 Methodology .....                                                                    | 10        |
| 3.1.3 Static Monitoring .....                                                              | 10        |
| 3.2 Limitations .....                                                                      | 11        |
| <b>4.0 RESULTS.....</b>                                                                    | <b>12</b> |
| 4.1 Bat Survey Results.....                                                                | 12        |
| 4.1.1 Pre-existing Information .....                                                       | 12        |
| 4.1.2 Walked Transect/ Night-Time Bat Walkovers .....                                      | 12        |
| 4.1.3 Static Monitoring .....                                                              | 13        |
| 4.2 Evaluation .....                                                                       | 17        |
| <b>5.0 ASSESSMENT OF IMPACTS IN THE ABSENCE OF MITIGATION .....</b>                        | <b>19</b> |
| 5.1 Introduction .....                                                                     | 19        |
| 5.2 Bats .....                                                                             | 19        |
| 5.2.1 Site Preparation and Construction Activities.....                                    | 19        |
| 5.2.2 Site Operation Activities.....                                                       | 19        |
| <b>6.0 MITIGATION &amp; COMPENSATION .....</b>                                             | <b>20</b> |
| 6.1 Introduction .....                                                                     | 20        |
| 6.2 Bats .....                                                                             | 20        |
| 6.2.1 Sensitive Lighting .....                                                             | 20        |
| 6.2.2 Enhancements .....                                                                   | 22        |
| <b>7.0 REFERENCES .....</b>                                                                | <b>24</b> |

**Executive Summary**

Ecosupport Ltd was instructed by PNH Properties Ltd to undertake updated bat activity surveys at the Land known as Interbridges, Emsworth to classify the value of the site for commuting and foraging bats and assess any ecological impacts that may arise as a result of the proposed commercial development following the results of the Preliminary Ecological Appraisal (PEA) (Ecosupport, 2024).

A total of three walked transects have been completed between April – October 2024 in line with the 4<sup>th</sup> edition of the BCT Guidelines, with static monitoring undertaken between April - October 2024.

Based on the results of the surveys undertaken, during the activity surveys and static detector deployments, calls were dominated by *Pipistrellus* spp. (which is to be expected based on a typical species composition sampled across an active season). Additionally, low numbers of *Serotine* and *Noctule* were also recorded, with sporadic registrations of *Daubenton's*, *Natterers*, *Whiskered/ Brandts bat* and *Leislars's* (and a single *Barbastelle* registration) also recorded across the season (with these species considered widespread or rarer as per Reason and Wray, 2023). Activity was predominantly recorded adjacent to the sites northern and southern boundaries, with the site considered to be of at least 'Local' importance to support commuting and foraging bats.

## 1.0 INTRODUCTION

### 1.1 Brief

Ecosupport Ltd was instructed by PNH Properties Ltd to undertake updated bat activity surveys at the Land known as Interbridges, Emsworth (here after referred to as 'the site').

### 1.2 Aims

The aim of the surveys was to classify the value of the site for commuting and foraging bats and assess any ecological impacts that may arise as a result of a proposed commercial development.

***N.B. If the development does not take place within 18 months<sup>1</sup> of this report then the findings may need to be updated.***

### 1.3 Site Description & Location

The site is located adjacent to the A27 known as land associated with Interbridges, Emsworth PO10 7PH centered on OS grid reference SU749063 (**Fig 1**). The site covers approximately 1.5ha and comprises predominantly of grassland, woodland and scrub. The site is bound by the A27 to the north, the railway to the south and further scrub/trees to the east and west of the site.

**Figure 1.** Aerial image of the site with approximate redline boundary provided (Google Earth, 2024)



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

### 1.4 Proposed Development

The proposed development will involve the creation of an employment development, with associated access, parking, yards, landscaping and substation (Fig 2).

**Figure 2.** Proposed site layout, drawing NoPNH-9173-HYP-00-DR-A-000010 (Hyphen, 2024)



## 2.0 RELEVANT LEGISLATION & POLICY

### 2.1 Legislation

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

The Conservation of Habitats and Species Regulations 2017 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.

The Conservation of Habitats and Species Regulations 2019 (EU Exit) 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.

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 part II of the Act. This list over 30 plants including Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum mantegazzianum*) and Parrot's Feather (*Myriophyllum aquaticum*).

### 2.2 Policy

#### *2.2.1 National Planning Policy*

The National Planning Policy Framework (NPPF) (2023) sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced.

Chapter 15 'Conserving and enhancing the natural environment' states that planning policies and decisions should contribute to and enhance the natural and local environment by protecting and enhancing sites of biodiversity, the wider benefits from natural capital and ecosystem services, minimising impacts on and providing net gains for biodiversity.

The NPPF states that plans should distinguish between the hierarchy of international, national and locally designated sites and that the scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.

To protect and enhance biodiversity plans should:

identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation;

and promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species and identify and pursue opportunities for securing measurable net gains for biodiversity.

The NPPF states determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a SSSI, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSI;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists;
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

### 2.2.2 Local – Havant Borough Core Strategy 2011

Part of the 'Building a Better Future Plan' of the emerging Local Plan is to protect and enhance biodiversity. Similarly, policy 'CS11: Protecting and Enhancing the Special Environment and Heritage of Havant Borough' states that planning permission will only be granted when development protects and where possible enhances the borough's statutory and non-statutory designated habitats and features of biological interest. and features of biological interest and prevents the fragmentation of existing habitats.

The strategy states that protection and enhancement will be achieved by appropriate adaptation and mitigation measures. It also has particular regard for nature conservation designations with international designations given the highest regard and supports an ongoing programme of surveys of habitats and species and designations of SINCs.

The above Local Plan will remain in place until the Havant Borough Local Plan is adopted (the new local plan was withdrawn in 2021), with the following relevant policies detailed below:

#### **Policy CS11 : Protecting and Enhancing the Special Environment and Heritage of Havant Borough**

*'Planning permission will be granted for development that:*

*1. Ensures the key landscape and built form principles set out in the Havant Borough Townscape, Landscape and Seascape Character Assessment are protected and where possible enhanced by partnership working with developers, groups and the wider community.*

*2. Protects and where possible enhances the borough's statutory and non-statutory designated landscape, habitats and features of biological, hydrological or geological interest. Protection and enhancement will be achieved by appropriate adaptation and mitigation measures including wardening, education and information and the creation of new habitats, water bodies/courses planting of new trees and woodland.*

*3. Has particular regard to the following hierarchy of nature conservation designations within the borough (as identified on the Proposals Map): (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), Local Nature Reserves (LNR), other Ancient Woodland not identified in (ii) above [Local].*

*4. Protects and where appropriate enhances the borough's statutory and non-statutory heritage designations by appropriately managing development in or adjacent to conservation areas, listed buildings, scheduled ancient monuments, historic parks and gardens, archaeological sites, buildings of local historic or architectural interest. 5. Supports*

*an ongoing programme of survey of habitats and species and designation of Sites of Importance for Nature Conservation.*

*6. Incorporates partnership working with conservation organisations to improve public understanding of biodiversity and to manage public access to designated sites, particularly on the coast, to reduce harm to nature conservation interests.*

*7. Incorporates partnership working with landowners and developers to ensure land management practices restore, enhance and where appropriate create new valued landscapes, habitats and their soil structure, particularly the ancient woodland remnants of the Forest of Bere and coastal salt marsh.*

*8. Protects wildlife habitats and wildlife corridors to prevent the fragmentation of existing habitats and to allow species, for example Brent Geese, to respond to the impacts of climate change by making provision for habitat adaptation e.g. coastal managed realignment and species migration.*

*9. Maintains undeveloped gaps between the settlements of Emsworth/Havant; Havant/Waterlooville; Havant/Portsmouth; Emsworth/Westbourne and Leigh Park/Rowlands Castle as shown on the Proposals Map.*

*10. Protects the best and most versatile agricultural land that has the greatest potential for local food security.*

*11. Responds to the emerging evidence from the Solent Disturbance and Mitigation Project, the published recommendations, and future related research.'*

### 3.0 METHODOLOGY

#### 3.1 Bats

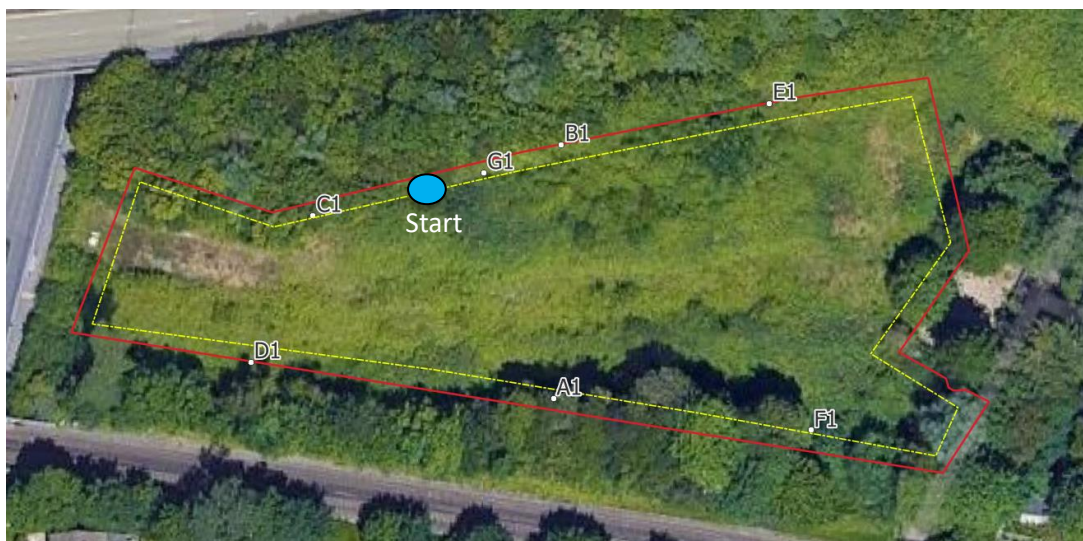
##### 3.1.1 Walked Transects/ Night-Time Bat Walkovers

A total of three walked transects have been completed between April – October 2024 in line with the 4<sup>th</sup> edition of the BCT Guidelines.

##### 3.1.2 Methodology

The three night-time bat walkovers conducted on site to date between April – October 2024 followed the latest best practice guidance (Collins, J. (ed), 2023) with the starting point and route indicated in **Fig 3** below. Surveyors remained at the starting point until 30-60 minutes after sunset (dependent on bat activity) before proceeding on the walkover route. They then walked continuously for until 2-3 hours after sunset, occasionally stopping / detouring to record bat activity. Both a Bat Box duet / Elekon batscanner heterodyne and Elekon bat logger (for analysis of calls via sonogram) were utilised during the survey. The surveys were carried out by Lily Pogson and Kelly Clarke (staff at Ecosupport Ltd.).

**Figure 3.** 2024 transect route and static locations (April = A1, May = B1, June = C1, July = D1, August = E1, September = F1, October = G1) (Google Satellite, 2024).



##### 3.1.3 Static Monitoring

In addition to the walked transects / night-time bat walkovers, static monitoring was conducted between Spring, Summer and Autumn 2024. In accordance with the latest best practice guidance (Collins, J. (ed), 2023), static detectors were placed within key habitat types on site for 5 consecutive nights each month during April - October 2024. The locations of the static bat detectors are shown in **Fig 3** above, with Anabat Express and / or a Song Meter Mini detector deployed.

Whilst guidance recommends deploying statics at fixed locations, in order to provide a more representative survey of the bat activity within habitats across the site, static deployments were placed at strategic locations within the site over the duration of the monitoring period.

Echolocation recordings captured during the phase II surveys were processed and analysed using Wildlife Acoustics Kaleidoscope Version 5.6.8. The AutoID function was used in conjunction with reference collection 'Bats of Europe 5.4.0 - United Kingdom' at classifier threshold of 0 Balanced (Neutral). AutoID results were manually reviewed and corrected where necessary in order to identify species present on site. All recordings were reviewed with the exceptions of *Pipistrellus* spp., noise files and non-identifiable (NoID) recordings in which auditing effort was reduced due to high quantities of data. The results were then multiplied proportionately to be applicable to the entire data set. For *Pipistrellus* spp., noise files and non-identifiable files, an auditing effort of 20% was utilized.

### **3.2 Limitations**

There were not considered to be any limitations to the surveys, with all surveys carried out as per BCT best practice guidance (Collins (ed), 2023), during suitable weather conditions.

## 4.0 RESULTS

### 4.1 Bat Survey Results

#### 4.1.1 Pre-existing Information

The data request from HBIC returned the following records within 1 km of the site (**Table 1**).

**Table 1.** List of Bat records within 1 km of the site (HBIC, 2024)

| Taxon Name                       | Species Name            | Number of Records | Distance to nearest record |
|----------------------------------|-------------------------|-------------------|----------------------------|
| <i>Plecotus auritus</i>          | Brown Long-eared Bat    | 11                | 0.21km                     |
| <i>Pipistrellus pipistrellus</i> | Common Pipistrelle      | 59                | 0.17km                     |
| <i>Nyctalus noctula</i>          | Noctule Bat             | 16                | 0.16km                     |
| <i>Pipistrellus</i> spp.         | Pipistrelle Bat species | 18                | 0.22km                     |
| <i>Eptesicus serotinus</i>       | Serotine                | 18                | 0.15km                     |
| <i>Pipistrellus pygmaeus</i>     | Soprano Pipistrelle     | 54                | 0.19km                     |
| <i>Barbastella barbastellus</i>  | Western Barbastelle     | 2                 | 0.58km                     |
| <i>Myotis</i> spp.               | Myotis Bat Species      | 29                | 0.46km                     |
| <i>Myotis daubentonii</i>        | Daubenton's Bat         | 8                 | 0.33km                     |
| <i>Myotis nattereri</i>          | Natterer's Bat          | 1                 | 0.93km                     |
| <i>Pipistrellus nathusii</i>     | Nathusius's Pipistrelle | 11                | 0.22km                     |
| <i>Nyctalus noctula</i>          | Lesser Noctule          | 4                 | 0.57km                     |

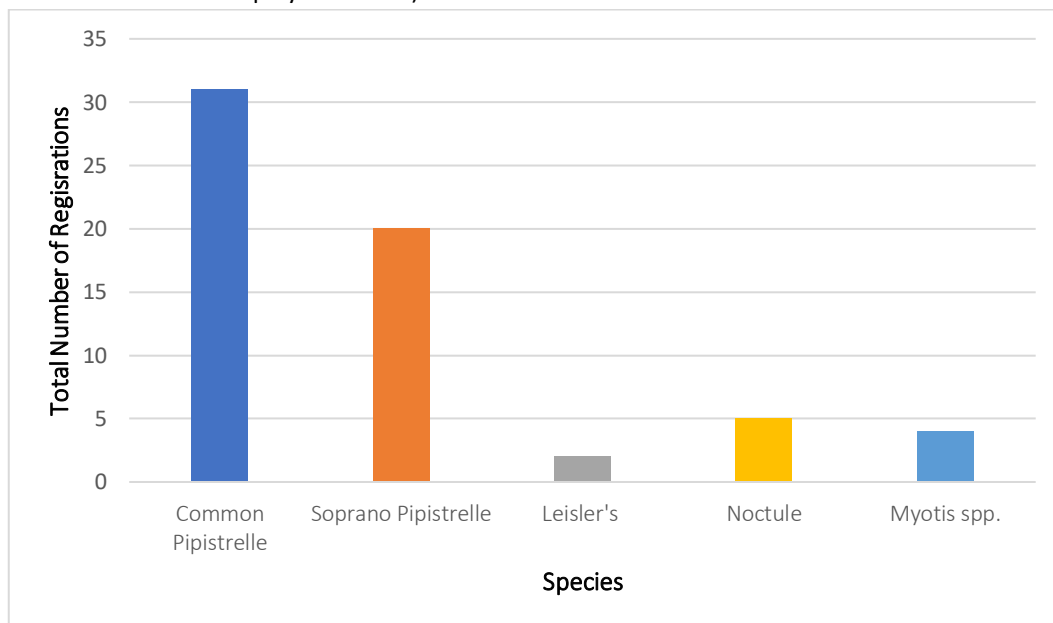
#### 4.1.2 Walked Transect/ Night-Time Bat Walkovers

**Table 2** below indicates the survey dates and other relevant information recorded to the transect surveys with the results present below in **Figs 4 & 5**.

**Table 2.** Relevant information recorded during the walked transect / night-time bat walkover surveys. Wind speed is approximated in the Beaufort Scale. CW = Clockwise and ACW = Anti Clockwise (refer to **Figs 3** for routes).

| Date       | Temp (°C) | Cloud Cover (%) | Precipitation | Wind (Beaufort scale) | Start Time | Walkover Start Time | Finish Time | Starting Point / Direction of Travel |
|------------|-----------|-----------------|---------------|-----------------------|------------|---------------------|-------------|--------------------------------------|
| 09/05/2024 | 13        | 10              | 0             | 0                     | 20:38      | 21:19               | 23:19       | ACW                                  |
| 04/07/2024 | 17        | 100             | 0             | 2                     | 21:20      | 21:50               | 23:50       | CW                                   |
| 02/09/2024 | 19        | 100             | 0             | 1                     | 19:47      | 20:17               | 22:17       | ACW                                  |

**Figure 4.** The number and species composition of bat recordings noted across May, July and September 2024 walked transects / night-time bat walkovers (with areas of highest activity and notable recordings indicated in **Fig 5** below based on the combined walked transect / night-time bat walkover and static deployment data).



#### 4.1.3 Static Monitoring

The results from the static detector deployments during the 2024 survey work (refer to **Figs 3** for approximate locations) are provided below in **Table 3** (with key areas of importance for foraging and commuting bats taking the walked transect / night-time bat walkover survey work into account as well indicated in **Fig 5**).

**Table 3.** Results from the static detector deployments covering April – October 2024 (refer to **Figs 3** for approximate locations). **NB. Wherever possible, *Myotis* have been identified to species level however in instances where the species was not clear, bats have been listed simply as *Myotis* spp.**

| Location | Date                                                                | Species                   | Total passes | Average passes per night | Average passes per hour |
|----------|---------------------------------------------------------------------|---------------------------|--------------|--------------------------|-------------------------|
| A1       | 19 <sup>th</sup> - 23 <sup>rd</sup> April<br>5 Nights<br>10 hrs p/n | C.pip                     | 70.00        | 14.00                    | 1.40                    |
|          |                                                                     | S.pip                     | 17.00        | 3.40                     | 0.34                    |
|          |                                                                     | Noctule                   | 10.00        | 2.00                     | 0.20                    |
| B1       | 4 <sup>th</sup> - 8 <sup>th</sup> May<br>5 Nights<br>9 hrs p/n      | C.pip                     | 271.00       | 54.20                    | 6.02                    |
|          |                                                                     | S.pip                     | 196.00       | 39.20                    | 4.36                    |
|          |                                                                     | Noctule                   | 24.00        | 4.80                     | 0.53                    |
|          |                                                                     | Leisler's                 | 2.00         | 0.40                     | 0.04                    |
|          |                                                                     | Serotine                  | 8.00         | 1.60                     | 0.18                    |
|          |                                                                     | <i>Plecotus</i> spp.      | 2.00         | 0.40                     | 0.04                    |
|          |                                                                     | Daubentons                | 4.00         | 0.80                     | 0.09                    |
| C1       | 11 <sup>th</sup> - 15 <sup>th</sup> June<br>5 Nights<br>7.5 hrs p/n | C.pip                     | 77.00        | 15.40                    | 2.05                    |
|          |                                                                     | S.pip                     | 23.00        | 4.60                     | 0.61                    |
|          |                                                                     | Noctule                   | 20.00        | 4.00                     | 0.53                    |
|          |                                                                     | Serotine                  | 6.00         | 1.20                     | 0.16                    |
|          |                                                                     | <i>Plecotus</i> spp.      | 1.00         | 0.20                     | 0.03                    |
|          |                                                                     | Daubentons                | 12.00        | 2.40                     | 0.32                    |
|          |                                                                     | Natterer's                | 1.00         | 0.20                     | 0.03                    |
|          |                                                                     | <i>Whiskered/Brandt's</i> | 1.00         | 0.20                     | 0.03                    |
| D1       | 12 <sup>th</sup> - 16 <sup>th</sup> July<br>5 Nights<br>8 hrs p/n   | C.pip                     | 378.00       | 75.60                    | 9.45                    |
|          |                                                                     | S.pip                     | 120.00       | 24.00                    | 3.00                    |
|          |                                                                     | Noctule                   | 21.00        | 4.20                     | 0.53                    |
|          |                                                                     | Serotine                  | 3.00         | 0.60                     | 0.08                    |
|          |                                                                     | <i>Plecotus</i> spp.      | 1.00         | 0.20                     | 0.03                    |
|          |                                                                     | Daubentons                | 2.00         | 0.40                     | 0.05                    |
|          |                                                                     | Natterer's                | 1.00         | 0.20                     | 0.03                    |
|          |                                                                     | <i>Whiskered/Brandt's</i> | 2.00         | 0.40                     | 0.05                    |
| E1       | 8 <sup>th</sup> - 12 <sup>th</sup> August<br>5 Nights<br>9 hrs p/n  | C.pip                     | 187.00       | 37.40                    | 4.68                    |
|          |                                                                     | S.pip                     | 152.00       | 30.40                    | 3.80                    |
|          |                                                                     | Noctule                   | 17.00        | 3.40                     | 0.43                    |
|          |                                                                     | Leisler's                 | 2.00         | 0.40                     | 0.05                    |
|          |                                                                     | Serotine                  | 5.00         | 1.00                     | 0.13                    |
|          |                                                                     | <i>Plecotus</i> spp.      | 1.00         | 0.20                     | 0.03                    |
|          |                                                                     | Daubentons                | 4.00         | 0.80                     | 0.10                    |
|          |                                                                     | Natterer's                | 1.00         | 0.20                     | 0.03                    |

|           |                                                                   |                                |        |        |       |
|-----------|-------------------------------------------------------------------|--------------------------------|--------|--------|-------|
|           |                                                                   | <i>Whiskered/<br/>Brandt's</i> | 1.00   | 0.20   | 0.03  |
| <b>F1</b> | 14th - 18 <sup>th</sup><br>September<br>5 Nights<br>11.25 hrs p/n | C.pip                          | 200.00 | 40.00  | 5.00  |
|           |                                                                   | S.pip                          | 634.00 | 126.80 | 15.85 |
|           |                                                                   | Noctule                        | 5.00   | 1.00   | 0.13  |
|           |                                                                   | Serotine                       | 4.00   | 0.80   | 0.10  |
|           |                                                                   | <i>Plecotus</i> spp.           | 8.00   | 1.60   | 0.20  |
|           |                                                                   | Natterer's                     | 5.00   | 1.00   | 0.13  |
|           |                                                                   | <i>Whiskered/<br/>Brandt's</i> | 15.00  | 3.00   | 0.38  |
| <b>G1</b> | 10th - 14th October<br>5 Nights<br>11.25 hrs p/n                  | C.pip                          | 25.00  | 5.00   | 0.63  |
|           |                                                                   | S.pip                          | 9.00   | 1.80   | 0.23  |
|           |                                                                   | Noctule                        | 5.00   | 1.00   | 0.13  |
|           |                                                                   | Serotine                       | 8.00   | 1.60   | 0.20  |
|           |                                                                   | <i>Plecotus</i> spp.           | 10.00  | 2.00   | 0.25  |
|           |                                                                   | Natterer's                     | 1.00   | 0.20   | 0.03  |
|           |                                                                   | Barbastelle                    | 1.00   | 0.20   | 0.03  |
|           |                                                                   | <i>Whiskered/<br/>Brandt's</i> | 15.00  | 3.00   | 0.38  |

**Figure 5.** Areas of notable bat activity recorded on site based on the 2024 walked transects / night-time bat walkovers and static detector deployments. Blue = areas of highest bat activity. Yellow circles = key areas of activity from rarer and rarest bats (as per Table 3.1 of the Bat Mitigation Guidelines (Reason, P.F. and Wray, S. 2023)).



## 4.2 Evaluation

During the activity surveys and static detector deployments, calls were dominated by *Pipistrellus* spp. (which is to be expected based on a typical species composition sampled across an active season). Additionally, low numbers of *Serotine* and *Noctule* were also recorded, with sporadic registrations of *Daubenton's*, *Natterers*, *Whiskered/ Brandts* bat and *Leislars's* also recorded across the season (with these species considered widespread or rarer as per Reason and Wray, 2023). A single *Barbastelle* pass was also recorded on static location G1 during the October 2024 deployment with this considered a 'rarest' species in the UK (Reason and Wray, 2023). Activity was recorded predominantly along the sites northern and southern boundaries during the transect surveys, with the majority of bat activity recorded within the habitat corridors situated within the adjacent lineside and highways estates.

The Bat Mitigation Guidelines (2023) provides a standard method for assessing importance of bat assemblage. This approach has been developed to reflect geographic variations in species distributions. To determine the maximum possible score any site could achieve, a score is assigned to each species that could be present where:

- Widespread in (almost) all geographies [score 1]
- Widespread in many geographies, but not as abundant in all [score 2]
- Rarer or restricted distribution [score 3]
- Rarest Annex II species and very rare [score 4]

**Table 4.** Rarity category and associated score for calculating importance score (for 'Southern England'). *\*Those recorded on this site are emboldened and italicised.*

| Rarity Category                                           | Species                           | Score     |
|-----------------------------------------------------------|-----------------------------------|-----------|
| Widespread                                                | <i><b>Common Pipistrelle</b></i>  | <b>1</b>  |
|                                                           | <i><b>Soprano Pipistrelle</b></i> | <b>1</b>  |
|                                                           | <i><b>Brown Long-eared</b></i>    | <b>1</b>  |
| Widespread in many geographies but not as abundant in all | <i><b>Whiskered</b></i>           | <b>2</b>  |
|                                                           | <i><b>Brandts</b></i>             | <b>2</b>  |
|                                                           | <i><b>Daubentons</b></i>          | <b>2</b>  |
|                                                           | <i><b>Natterers</b></i>           | <b>2</b>  |
|                                                           | <i><b>Noctule</b></i>             | <b>2</b>  |
| Rarer or restricted in distribution                       | <i>Alcathoe</i>                   | 3         |
|                                                           | <i><b>Serotine</b></i>            | <b>3</b>  |
|                                                           | <i><b>Leislars</b></i>            | <b>3</b>  |
|                                                           | <i>Nathusius Pipistrelle</i>      | 3         |
| Rarest Annex II Species and very rare                     | Greater Horseshoe                 | 4         |
|                                                           | Lesser Horseshoe                  | 4         |
|                                                           | Bechstein                         | 4         |
|                                                           | <i><b>Barbastelle*</b></i>        | <b>4*</b> |
|                                                           | Grey Long-eared                   | 4         |
| Maximum Score                                             |                                   | 45        |

Once the score for each has been calculated (**Table 4** above) and summed to determine the maximum theoretical score, the threshold score needed for any assemblage to meet each geographic level of importance, can be calculated:

- Assemblage score meets or exceeds 45% of the maximum score: County importance,
- Assemblage score meets or exceeds 55% of the maximum score: Regional importance,
- Assemblage score meets or exceeds 70% of the maximum score: National importance.

The threshold for any site in the Southern England achieving a score of –

- 20 would be classed as of at least 'County' importance,
- 25 would be classed as of 'Regional' importance,
- 32 classed as of 'National' importance.

Given that Barbastelle activity was limited to a single pass recorded in October, it is considered that including this species within the overall classification of the site would not be fully reflective of the importance of the site and its associated bat activity recorded during the monitoring period. As such, based on the above system, the site scores 19 points for commuting and foraging bats (see **Table 4**) and is correspondingly considered to be of at least 'Local' importance. Notwithstanding the above, given the habitats present within the site and its context situated between two suitable wildlife corridors to the north and south (along the highways and railway boundaries), it is considered that the results are equally reflective of the value of the habitats/ wildlife corridors situated adjacent to the site boundary.

***N.B. Detailed data analysis was undertaken to distinguish which *Myotis* species were present on site as recorded during the static monitoring surveys. When distinguishing between *Myotis* species the frequency of maximum energy is not a conclusive parameter, it is more effective to use parameters such as call duration, inter-pulse intervals and end and start frequencies. For this analysis the primary parameters were inter-pulse interval and call length, though both of these rely in some way on the start frequency which can be hard to accurately record when dealing with quieter or more distant bats.***

## 5.0 ASSESSMENT OF IMPACTS IN THE ABSENCE OF MITIGATION

### 5.1 Introduction

This chapter considers the likely ecological impacts (both positive and negative) of the proposals in the absence of mitigation. In many cases, whilst a potential negative impact is identified at this stage, mitigation can be implemented to ensure no residual negative impacts. Correctly identifying the impacts of the development will ensure appropriate and proportionate mitigation to be designed and implemented.

### 5.2 Bats

#### 5.2.1 Site Preparation and Construction Activities

The proposed works will result in the loss of grassland and scrub habitat. The site has been identified as being of local importance for foraging and commuting bats based on the updated survey effort undertaken in 2024. Notwithstanding this, the majority of the bat activity recorded across the site to date was identified along the site's northern and southern boundaries, with the majority of these habitats set to be retained as they are situated beyond the site's boundary within either highways or railway land to the north and south respectively. In the absence of mitigation however, impacts from external lighting during the construction phase has the potential to disrupt activity along these commuting routes. As such, the works would therefore result in an **adverse impact** at the **Local** level.

#### 5.2.2 Site Operation Activities

It is understood that minimal external lighting is proposed within the proposed commercial business park, which therefore reduces the potential for impacts caused by an increase of lighting within the general area which can affect the behavior, particularly foraging, of nocturnal wildlife. As such, based on the current lighting plans, it is considered that an **adverse impact is possible** at the **Local** level.

## 6.0 MITIGATION & COMPENSATION

### 6.1 Introduction

In order to fully comply with applicable legislation and planning policy, it is necessary to mitigate or compensate for any significant ecological impacts.

The chapter deals with the mitigation, compensation and enhancement for each affected species. Mitigation refers to measures that can be undertaken to avoid or reduce ecological impacts, for example, by timing works to avoid active seasons for protected species. Compensation refers to measures taken in order to offset potential significant impacts, for example by providing alternative roost sites to replace roost sites lost as a result of the works.

### 6.2 Bats

#### 6.2.1 Sensitive Lighting

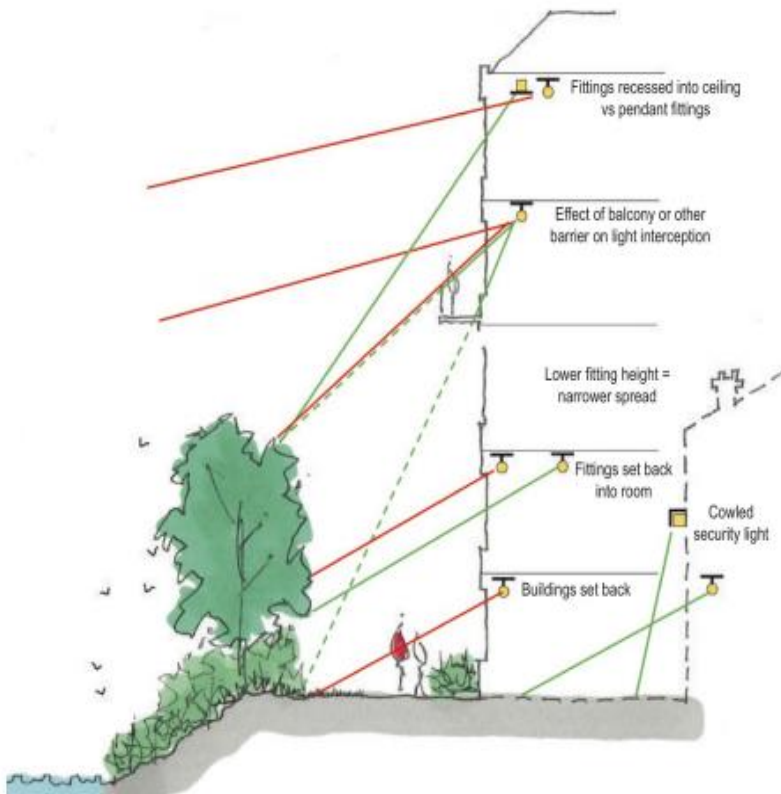
Given that a single Barbastelle bat registration was recorded only once on site, the site is not considered to provide an important foraging or commuting area for this species and as such dark corridors are not considered to be proportionate. Notwithstanding this, whilst it is understood that only minimal external lighting is proposed, it is recommended that any lighting (including internal fixtures) complies with the following the newly published *Guidance Note 08/23 Bats and Artificial Lighting at night* (ILP / BCT, 2023) 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. Lighting should also be managed to avoid light spill onto the habitats situated within the adjacent lineside and highways estates (to the north and south) to maintain and avoid disruption to these commuting routes for bats (with these habitats retained to maintain the commuting and foraging resources already present adjacent to the site). The key recommendations within this document have been outlined below and will be implemented as far as is practicable:

*'Light sources, lamps, LEDs and their fittings come in a myriad of different specifications which a lighting professional can help to select. However, the following should be considered when choosing luminaires and their potential impact on Key Habitats and features:*

- *All luminaires will lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used*
- *LED luminaires will be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability*
- *A warm white light source (2700Kelvin or lower) will be adopted to reduce blue light component*
- *Light sources will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012)*
- *Internal luminaires can be recessed (as opposed to using a pendant fitting - See **Fig 6**) where installed in proximity to windows to reduce glare and light spill*
- *Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges (see Case Study 1)*

- *Column heights will be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards*
- *Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01*
- *Luminaires will always be mounted horizontally, with no light output above 90° and/or no upward tilt*
- *Where appropriate, external security lighting will be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate*
- *Use of a Central Management System (CMS) with additional web-enabled devices to light on demand Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS*
- *The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues. See Case Study 6*
- *Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely'*

**Figure 6.** Internal lighting mitigation options (ILP 2023).



#### 6.2.2 Enhancements

The erection of six bat boxes around the boundaries of the site on suitable retained trees will provide enhancements for this species. It is recommended that No.5 Schwegler 2FN boxes (**Fig 7**) and No.1 Schwegler 2F boxes (with double front panel) are utilized, however it is anticipated that the final design selection will be based on the results of the bat activity surveys. Notwithstanding this, both of these bat boxes represent 'general purpose' boxes with the 2FN box providing a larger void space to enable utilization by groups of large bats and has been successful at supporting Noctule bats. These boxes will be erected on suitable trees situated around the site boundaries. The locations will be agreed with an ecologist prior to their erection on site.

**Figure 7.** Recommended bat box design – Schwegler 2FN (NHBS.com)



## 7.0 REFERENCES

Collins, J. (ed) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4<sup>th</sup> Edition). The Bat Conservation Trust, London. ISBN-978-1-7395126-0-6.

Havant Borough Council (2011) '*Havant Borough Core Strategy*' Available online at: <http://www.havant.gov.uk/sites/default/files/documents/ADOPTED%20CORE%20STRATEGY%20.pdf>

HMSO (1981). *Wildlife and Countryside Act* (amended). HMSO, London.

HMSO (2017) *The Conservation of Habitats and Species Regulations*. Statutory Instrument 2010 No. 490. HMSO, London.

HMSO (2019). *The Conservation of Habitats and Species Regulations*. Statutory Instrument 2019 No. 579. HMSO, London.

ILP / BCT (2023) Guidance Note 08/2: Bats and Artificial Lighting at Night

Reason, P.F. and Wray, S. (2023). *UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats*. Chartered Institute of Ecology and Environmental Management, Ampfield.