

DYE HOUSE, PRESCOT

Bat Survey Report

January 2023



Report Control Sheet

Project Name: Dye House, Prescott
Project Reference: CW20-488
Report Title: Nocturnal Bat Survey Report
Report Reference: CW20-488 RPT 004
Printing Instructions: Print at A4 Portrait, Double Sided.

<i>Rev</i>	<i>Date</i>	<i>Description</i>	<i>Prepared</i>	<i>Reviewed</i>	<i>Approved</i>
/	07/10/2022	Draft report sent to Client for comment.	CO	KB	OC
1	11/01/2023	Issued to Client	OC	OC	OC

Collington Winter Environmental Ltd disclaims any responsibility to SEP Construction and others in respect of any matters outside the scope of this report. This report has been prepared with reasonable skill, care and diligence within the terms of the Contract with SEP Construction and according to the proposed plans supplied by the client or the client's agent upon commencement of the project.

The contents of this report are valid at the time of writing. As the ecological value of a site is constantly evolving and changing, if more than twelve months have elapsed since the date of this report, further advice must be taken before reliance upon on the contents. Notwithstanding any provision of the Collington Winter Environmental Ltd Terms & Conditions, Collington Winter Environmental Ltd shall not be liable for any losses (howsoever incurred) arising as a result of reliance by the client or any third party on this report more than twelve months after the report date.

This report is confidential to SEP Construction and Collington Winter Environmental Ltd accepts no responsibility of whatsoever nature to third parties to whom this report or any part thereof is made known. Any such party relies upon the report at their own risk.

CONTENTS

1	INTRODUCTION.....	4
1.1.	SCOPE & PURPOSE	4
1.2.	LOCATION	4
1.3.	OBJECTIVES	4
2	METHODOLOGY	5
2.1.	NOCTURNAL BAT SURVEY	5
2.2.	BAT ACTIVITY SURVEYS	5
2.3.	BAT STATIC DETECTOR	6
2.4.	SURVEY LIMITATIONS	7
3	NOCTURNAL SURVEY RESULTS.....	8
3.1.	DUSK SURVEY (09/08/22)	8
3.2.	DUSK SURVEY (22/08/22)	8
3.3.	ASSESSMENT.....	8
4	BAT ACTIVITY SURVEY	9
4.1.	SURVEY 1 (09/08/22)	9
4.2.	SURVEY 2 (01/09/22)	9
4.3.	SURVEY 3 (13/09/22).....	9
4.4.	SURVEY 4 (24/10/22)	9
4.5.	ASSESSMENT.....	10
5	BAT STATIC DETECTOR RESULTS	11
6	RECOMMENDATIONS AND MITIGATION	13
6.1.	BAT ROOST IMPACT ASSESSMENT	13
6.2.	BAT ACTIVITY IMPACT ASSESSMENT	13
6.3.	MITIGATION.....	13
7	BIBLIOGRAPHY	15

1 INTRODUCTION

1.1. SCOPE & PURPOSE

- 1.1.1. Collington Winter Environmental Ltd was commissioned by SEP Construction to undertake Nocturnal Bat Surveys and Bat Transect Surveys at the site at Dye House, Liverpool Road, Prescott L34 3LX. This report has been produced to inform a planning application at the site relating to a residential development.
- 1.1.2. The author of this report is Caitlin O'Connor, Ecologist at Collington Winter Environmental Ltd. The project has been managed and overseen by Olivia Collington BSc (Hons), MEnvSc, CEnv. Director Ecologist at Collington Winter Environmental. Olivia is highly experienced managing schemes and has produced many ecological reports to inform planning permission. Olivia holds a Class 1 Natural England Bat Licence and is experienced assessing sites for bat roosting potential.
- 1.1.3. A Preliminary Roost Assessment was undertaken, as part of the Preliminary Ecological Appraisal (PEA) (2022) which found Building 1 (B1) to provide moderate bat roosting potential and Building 2 (B2) to provide low bat roosting potential. Therefore, two nocturnal emergence surveys were recommended for B1 and one nocturnal emergence survey on B2.
- 1.1.4. In addition, during the PEA, the habitats on site were also anticipated to provide value for foraging bats due to comprising mosaic of unmanaged habitats which will attract invertebrate prey. Boundary features such as hedgerows, woodland edges and running water may be utilised for commuting. As such, bat activity surveys were recommended, the results of which are detailed in this report.

1.2. LOCATION

- 1.2.1. Please refer to Figure 1.1 for the approximate site location. The site is located within Prescott, a town and civil parish within the Metropolitan Borough of Knowsley in Merseyside, England. It is situated north of the M57 and Liverpool Road and south of the A58 road.

Figure 1.1 Site Location



1.3. OBJECTIVES

- 1.3.1. The objectives of the Nocturnal Bat Survey are as follows:
- Identify any bats roosting within the buildings.
 - Assess the value of the buildings for roosting bats.
 - Identify the species assemblage of bats using the site.
 - Provide recommendations on any further surveys or mitigation required for bats.

2 METHODOLOGY

2.1. NOCTURNAL BAT SURVEY

2.1.1. The nocturnal surveys were undertaken as dusk surveys on 9th August 2022 and on 22nd August. Four qualified surveyors surveyed B1 and B2 on the 9th August 2022 and two qualified surveyors surveyed B1 on the 22nd August 2022. Please refer to Figure 2.1 for locations of vantage points used during both surveys.

Figure 2.1 Surveyor Locations



2.1.2. The surveys were undertaken in line with guidance as set out in Collins (2016). Surveyors used heterodyne handheld bat detectors. All surveyors were suitably experienced undertaking bat emergence surveys. Please refer to Table 2.1 for details of surveyors.

Table 2.1 Survey Dates and Surveyors for Nocturnal Bat Surveys

Date	Sunset/ Sunrise Time	Start	Finish	Surveyors	Weather Conditions
09/08/2022	20:52	20:57	22:22	<u>B1</u> VP1 – Jacob Ng VP2- Samuel Penrhyn-Lowe <u>B2</u> VP3 - Allegra Lindsay VP4 – Caitlin O'Connor	Temp at start/end: 23 Celsius Cloud: 1/8 Octas Wind: 0 max (Beaufort scale)
22/08/2022	20:24	20:09	21:54	<u>B1</u> VP1 – Ben Miles VP2 – Jacob Ng	Temp at start/end: 18 Celsius Cloud: 5/8 Octas Wind: 2 max (Beaufort scale)

2.2. BAT ACTIVITY SURVEYS

2.2.1. Bat activity surveys were undertaken once per month from August through to October, on; 9th August 2022, 1st September 2022, 13th September 2022, and 24th October 2022 by two qualified surveyors.

2.2.2. Bat activity surveys were undertaken within the site in accordance with guidance set out in Collins (2016). Please refer to Table 2.2 for details of survey dates and surveyors.

Table 2.2 Survey Dates and Surveyors for Activity Surveys

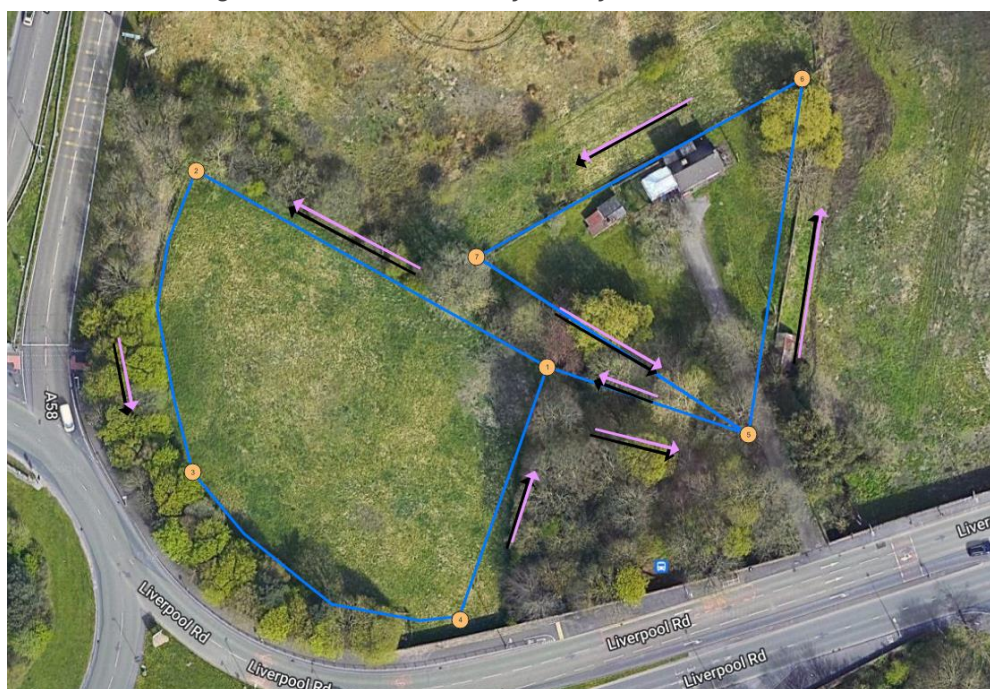
<i>Date</i>	<i>Dusk/ Dawn</i>	<i>Sunset Time/Start Time</i>	<i>End Time</i>	<i>Surveyors</i>	<i>Weather Conditions</i>
09/08/2022	Dusk	20:52	22:52	Andrew Taylor	Start temp (22°C), no rain, light wind.
01/09/2022	Dusk	20:01	22:01	Andrew Bridge and Samuel Penrhyn-Lowe	Start temp (27°C), no rain, breezy.
13/09/2022	Dusk	19:33	21:33	Katie Bird and Hooman Nesarani	Start temp (15°C), no rain, no wind.
24/10/2022	Dusk	17:55	19:55	Katie Brewer and Caitlin O'Connor	Start temp (14°C), no rain, light wind.

2.2.3. All surveyors are experienced bat surveyors with experience undertaking bat activity surveys in a variety of habitats. The transect route followed that indicated on Maps located within the Appendix and on Figure 2.2. Surveyors walked at a steady state mainly following the outer boundary of the site. This route was chosen to include as many habitats as possible as the site comprised a mosaic of unmanaged habitats which is anticipated to attract invertebrate prey.

2.2.4. Each survey followed the same walking route with listening points stopped at every 50 – 100 m for approximately 5 minutes to record bat behaviour in that location. The same route direction and listening points were used on every survey.

2.2.5. See Figure 2.2 for the route undertaken during all bat activity surveys. The route was completed twice during a single activity survey.

Figure 2.2 Route undertaken during the nocturnal bat activity surveys.



2.3. BAT STATIC DETECTOR

2.3.1. In accordance with guidance set out in Collins (2016), a static bat detector was installed at a key location within the site to supplement the results from the bat activity surveys. The static detector, by virtue of recording consistently and for a longer period, is able to better ascertain a more comprehensive overview of bat activity and species diversity within the site.

2.3.2. The static detector used on site was a Titley Scientific: Anabat express passive bat detector (Titley Scientific). The static detector was placed in the location show in Figure 2.3, which was chosen as a habitat with both linear commuting value and potential foraging value for local bats in accordance with Bat Conservation Trust (BCT) Survey Guidelines.

Figure 2.3 Location of the static bat detector on site



2.3.3. Anabat Express static bat detector was deployed at the site and collected data on the following dates:

- August – the static detector was faulty, no data collected.
- 06/09/2022-13/09/2022
- 14/10/2022 to 21/10/2022

2.4. SURVEY LIMITATIONS

2.4.1. No survey limitations were observed during the Nocturnal Bat Surveys.

2.4.2. Due to late instruction of the site, no bat activity surveys were conducted during the beginning months of the surveying period (April-July). As such, four transect surveys were completed between August and October to capture as much survey data as possible. The constraint was considered within the final assessment.

2.4.3. A static was placed onsite in August; however, the equipment was faulty and did not record bat calls when the data was analysed. This constraint has been considered.

3 NOCTURNAL SURVEY RESULTS

3.1. DUSK SURVEY (09/08/22)

- 3.1.1. Bat activity was recorded throughout the survey, with common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) observed foraging or commuting in proximity of all vantage points.
- 3.1.2. The first bats were recorded at 21:09 (approximately seventeen minutes after sunset) by VP1 and VP4 and were seven common pipistrelles from the treelines on the southern aspect of the site and then commuting northeast past B1. Social calls were also recorded throughout the survey in the proximity of both VP2 and VP3.
- 3.1.3. Foraging activity was recorded continuously throughout the survey by all vantage points particularly in the field south of B1. Bouts of foraging activity was recorded lasting up to a maximum seven minutes at once.
- 3.1.4. No roost locations were observed on either B1 or B2 throughout the survey.

3.2. DUSK SURVEY (22/08/22)

- 3.2.1. Bat activity was sporadic throughout the survey with only common pipistrelle observed foraging within the proximity of VP1.
- 3.2.2. An unidentified pipistrelle was observed by VP1 at 20:42 which is approximately eighteen minutes after sunset. Soon after common pipistrelle was recorded foraging along the treeline on the north-eastern aspect of the site. Most of the activity was recorded by VP1 with only two common pipistrelles observed by VP2. Both bats were heard but not seen.
- 3.2.3. No roost locations were observed on B1 throughout the survey.

3.3. ASSESSMENT

- 3.3.1. Bat activity was recorded throughout the surveys with only common and widespread species being identified within the local area. Foraging and commuting activity continuously throughout the site with a major focus on the northern hedgerow and within the woodland on the southern aspect of the site.
- 3.3.2. No bat roosts were located on site during the survey.
- 3.3.3. Due to no bat roosts being located on site, no further licences or surveys are required relating to roosting bats, to allow the development to proceed with the proposed development.

4 BAT ACTIVITY SURVEY

4.1. SURVEY 1 (09/08/22)

- 4.1.1. Bat activity was recorded consistently throughout the survey with numerous species recorded commuting and foraging around the general area. Species included common pipistrelle, soprano pipistrelle and common noctule (*Nyctalus noctula*).
- 4.1.2. The first bat was recorded at 21:01 (approximately nine minutes after sunset) between Recording Point (RP) 2 and 3 and was a soprano pipistrelle. This bat was heard but not seen. Another bat of the same species was recorded three minutes later at RP3.
- 4.1.3. Commuting and foraging activity was concentrated around RP1 and 5 under the woodland canopy on the southern aspect of the site. Between 21:16 and 21:22 there was constant foraging activity by soprano and common pipistrelles in this area with a maximum of three individuals recorded at one time.
- 4.1.4. The frequency of foraging and commuting activity had decreased on the second lap of the route with many bats being heard but not seen. Common and soprano pipistrelles were heard periodically between recording points. The final bat was recorded at 22:34 at RP5 and was a common pipistrelle.

4.2. SURVEY 2 (01/09/22)

- 4.2.1. Commuting and foraging activity was recorded throughout the survey with a notable focus on the south-eastern and north-eastern aspects of the route. Species recorded included only common pipistrelle but were found in abundances of up to five individuals at one time.
- 4.2.2. Bat activity began at RP4 at 20:25, approximately 24 minutes after sunset and remained constant throughout the survey. Foraging and commuting activity was predominantly concentrated within the woodland on the southern aspect of the site as well as within the proximity of RP7. Minimal activity was observed on the southwestern aspect of the route, including between RP2, 3 and 4.
- 4.2.3. The frequency of bat recordings remained consistent throughout the survey with equal numbers of individuals recorded on the first lap than on the second lap.

4.3. SURVEY 3 (13/09/22)

- 4.3.1. The frequency of bat activity was significantly less than that of previous bat activity surveys with bats only recorded on the first lap of the route and only within the proximity of RP1, 5 and 7. Species recorded included common pipistrelle and soprano pipistrelle.
- 4.3.2. The first bat was recorded at 20:00, approximately 30 minutes after sunset, and was a common pipistrelle at RP1. Two further common pipistrelles were recorded one minute later foraging within the woodland on the southern aspect of the site. Soprano pipistrelle was also recorded commuting within the proximity of RP5.
- 4.3.3. All bat activity was recorded within a short time frame; between 20:00 and 20:18.

4.4. SURVEY 4 (24/10/22)

- 4.4.1. Bat activity was recorded throughout the survey with common pipistrelle, soprano pipistrelle, brown long-eared bat (*Plecotus auritus*) and an unidentified myotis (*Myotis* sp.) recorded foraging and commuting within the site.
- 4.4.2. The first bats recorded at 19:55 were two soprano pipistrelles foraging within the woodland on the southern aspect of the site, approximately at sunset. Foraging activity continued within this woodland for the duration of the survey with soprano pipistrelle, common pipistrelle and myotis sp. (*Myotis* sp.) recorded. Commuting activity was also recorded along the fence on the northern aspect of the site with up to three common pipistrelles recorded here during the survey.

4.5. ASSESSMENT

- 4.5.1. Bat activity was recorded throughout the surveys with only common and widespread species being identified within the local area. The woodland area along the southern aspect of the site proved to be of significant value for foraging bats with up to 18 records of common pipistrelles during one survey. The woodland is used for commuting and foraging purposes.

5 BAT STATIC DETECTOR RESULTS

5.1.1. The bat static recordings are displayed in Table 5.1, Table 5.2, Figure 5.1, and Figure 5.2. Between the 6th September to the 13th September, the bat static recorded a total of 1,538 bat calls.

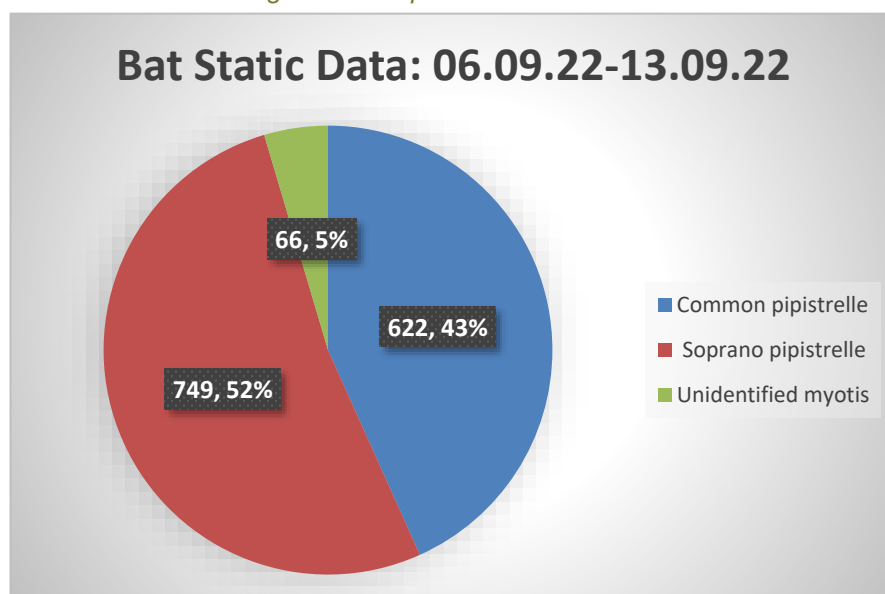
SEPTEMBER

5.1.2. A peak count of 394 bat calls were recorded on 12th September, which included 93 common pipistrelles and 97 soprano pipistrelles. The majority of the recordings related to soprano pipistrelle, accounting for 52%, followed by common pipistrelle accounting for 43%. A total of 5% related to unidentified Myotis species.

Table 5.1 Number of recordings of each species per night between 06/09/22-13/09/22

Date	Common Pipistrelle	Soprano Pipistrelle	Unidentified Myotis	Total per day
06/09/2022	109	116	1	226
07/09/2022	123	140	4	267
08/09/2022	82	90	18	190
09/09/2022	104	101	13	219
10/09/2022	32	30	1	63
11/09/2022	67	92	21	180
12/09/2022	93	97	0	290
13/09/2022	12	83	8	103
Overall Total	622	749	66	1,538

Figure 5.1 Total number of recordings of each species between 06.09.22-13.09.22



OCTOBER

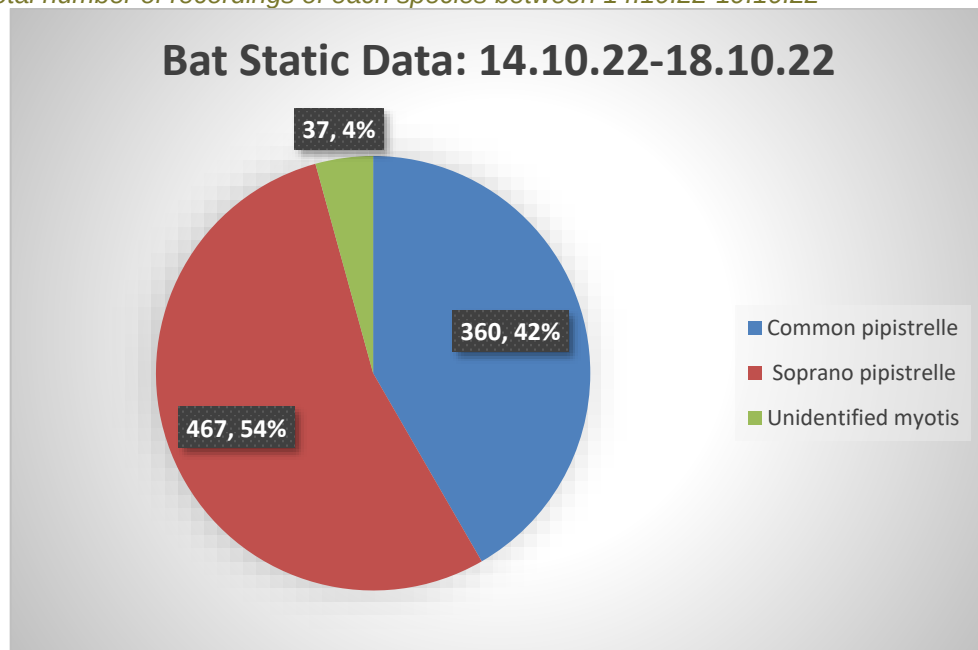
5.1.3. Between the 14th October to the 19th October, the bat static recorded a total of 864 bat calls. A peak count of 310 bat calls were recorded on the 18th October, which included 174 common pipistrelles, 130 soprano pipistrelles and 6 unidentified myotis. The majority of the recordings related to soprano pipistrelle, accounting

for 54%, followed by common pipistrelle accounting for 42%. A total of 4% related to unidentified *Myotis* species. The recordings were of similarly extent as when recorded in September.

Table 5.2 Number of recordings of each species per night between 14/10/22-19/10/22

Date	Common Pipistrelle	Soprano Pipistrelle	Unidentified Myotis	Total per day
14/10/2022	1	2	17	20
15/10/2022	24	24	6	48
16/10/2022	108	104	6	218
17/10/2022	53	73	8	134
18/10/2022	174	130	6	310
19/10/2022	0	134	0	134
Overall Total	360	467	37	864

Figure 5.2 Total number of recordings of each species between 14.10.22-19.10.22



6 RECOMMENDATIONS AND MITIGATION

6.1. BAT ROOST IMPACT ASSESSMENT

- 6.1.1. The proposed development includes the demolition of B1 and B2. There is not considered to be a risk of injuring and/or killing bats or disturbing/destroying a known bat roost as a result of the proposed works. As such, Natural England European Protected Species License (EPSL) is not required to be obtained prior to any works being completed on the building.

6.2. BAT ACTIVITY IMPACT ASSESSMENT

- 6.2.1. The bat activity surveys identified the following species onsite; common pipistrelle, soprano pipistrelle, noctule and Myotis species. The majority of which attributed to the pipistrelle species. The species recorded are considered common and widespread within the local area and are associated with urbanised areas. Only one noctule was recorded throughout the survey effort and was recorded on the 9th August 2022. It is possible due to the survey constraints (i.e. the majority of the survey period that was no subject to surveys), that a higher frequency of noctules utilise the site earlier in the year.
- 6.2.2. It should be noted, October was relevantly milder in climate, than usual, and may attribute to the number of recordings identified in October, which was similar to that was recorded in September.
- 6.2.3. The activity mainly related to the woodland, with limited activity recorded in relation to the woodland bounding the site on the western aspect. It is anticipated the adjacent road infrastructure will deter bats from utilising the woodland edge for commuting and foraging. In addition, limited activity was recorded in relation to the brook, which was deemed unusual due to it being lined with trees.
- 6.2.4. The proposed development plans demonstrate the removal of the woodland along the southern aspect and is to be replaced with an internal road and landscape buffer. The loss of this woodland may have a negative impact on the local bat population, at a site level.
- 6.2.5. The general habitats to be retained include a 14.8m buffer on either side of Prescott Brook, which runs diagonally through the centre of the site. This includes associated trees and surrounding grassland. This feature was found to provide limited value for the local at population.
- 6.2.6. It should be noted, the majority of recordings related to common and soprano pipistrelles. Common pipistrelle has been found to preference deciduous woodland but a generalist using a wide range of habitats (DavidsonWatts and Jones, 2006; Davidson-Watts et al., 2006). Whilst soprano pipistrelle Tends to select riparian habitats over other habitat types available (Davidson-Watts and Jones, 2006; Davidson-Watts et al., 2006). However, this was not the case for soprano pipistrelle, which were not found using the riparian habitat onsite.
- 6.2.7. Both species will utilise a range of habitats, though the loss of the woodland is anticipated to be of negative impact.
- 6.2.8. Common and soprano pipistrelles are generally light tolerant to artificial lighting, however there will be an increase of artificial lighting to the site which may have a negative impact.

6.3. MITIGATION

- 6.3.1. The proposed development includes the retention of the habitat relating to the brook, with the inclusion of habitat creation of broadleaved woodland, other neutral grassland and extensive number of urban trees. It is anticipated that the creation of these habitats will compensate for the loss of the existing woodland. As stated, common and soprano pipistrelle are associated with a range of habitats and are not anticipated to be significantly impacted by the proposed development. The development includes a 30-year management of the proposed habitats subject to Biodiversity Net Gain Policies.
- 6.3.2. An External Lighting Strategy should be produced to outline the proposed external lighting to be installed across the site and should demonstrate Lux Levels plans. The Strategy should consider the following recommendations:
- Keep site lighting to minimum levels.

- Luminaries should lack UV elements and preferably LED lighting with a warm white light should be used over cool white light (ideally <2700Kelvin).
- Lighting should feature peak wavelengths greater than 550nm.
- Light placement should be downward facing to prevent excess horizontal or vertical light spill.
- The use of integrated fittings such as cowls, shields, louvres and hoods, that effectively contain light spill from unintended areas.
- Avoid illuminating habitats of value.
- Use of timed security lights should be set on motion-sensors and using short, 1-minute timers, to minimise light use.
- Column heights of lighting can be considered to minimise light spill.

7 BIBLIOGRAPHY

- Bat Conservation Trust (2018). Bats and Artificial Lighting in the UK: Bats and the Built Environment Series.
- Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edition. The Bat Conservation Trust, London.
- Institute of Lighting Engineers (2005). Guidance Notes for the Reduction of Obtrusive Light.
- Mitchell-Jones (2004). Bat Mitigation Guidelines: Working Today for Natura Tomorrow. English Nature.
- Mitchell-Jones and McLeish (2004). Third Edition Bat Workers' Manual.



Drawing Title : Bat Activity Map 09.08.22
Date: 18.08.22

Key:

- Route
- Stationary Recording Points
- P55 - Soprano Pipistrelle
- P45 - Common Pipistrelle
- Nc - Noctule
- Walking Direction
- Commuting Direction
- 1. = Recorded on 1st Lap
2. = Recorded on 2nd Lap

Scale: 1:1100

Drawn By: CO

Checked By: OC

Approved By: OC



Client: SEP Construction Ltd

Site: Dye House, Prescot

Project Number: 20-488 Rev: 1.0

© Collington Winter Environmental 2022



Drawing Title : 01.09.22 Bat Activity Map
Date: 22.08.2022

Key:

- Route
- Stationary Recording Points
- Walking Direction
- P45 - Common Pipistrelle
- 1. = Recorded on 1st Lap
- 2. = Recorded on 2nd Lap

Scale: 1:1100

Drawn By: CO

Checked By: OC

Approved By: OC



Client: SEP Construction Ltd

Site: Dye House, Prescott

Project Number: 20-488 Rev: 1.0

© Collington Winter Environmental 2022



Drawing Title : 13.09.22 Bat Activity Map
Date: 03.10.2022

Key:

Route

Stationary Recording Points

Walking Direction

P45 - Common Pipistrelle

P55 - Soprano Pipistrelle

1. Recorded on 1st Lap

2. Recorded on 2nd Lap

Scale: 1:1100

Drawn By: CO

Checked By: OC

Approved By: OC



Collingtonwinter
environmental

Client: SEP Construction Ltd

Site: Dye House, Prescott

Project Number: 20-488

Rev: 1.0

© Collington Winter Environmental 2022

