

Bat Activity Survey Report

Henthorn Road, Clitheroe
Reference: 82-168-R3-2
Date: December 25





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EXECUTIVE SUMMARY

Site Address	Land north and south of Henthorn Road, Clitheroe, Ribble Valley, BB7 2SN
Coordinates	E 372958, N 440590
Site Area	Approximately 7.21 ha
Current Site Use	The site comprised two modified grassland fields separated by Henthorn Road. Hedgerows and scattered trees were present surrounding the fields. A small area of lowland mixed deciduous woodland was present in the northwest of the site. An unnamed watercourse ran through the southern grassland field and Pendleton Brook formed the site's southern boundary.
Proposed Development	Development proposals comprise an outline application for the construction of residential units with associated gardens, access roads, and hard and soft landscaping.
Results	<p>The site was identified as having high levels of bat activity during the activity surveys. Species identified during the Nocturnal Bat Walkover Surveys and Static Bat Activity Surveys comprised common pipistrelle, soprano pipistrelle, noctule, myotis species and brown long-eared. The species with the highest frequency during the activity surveys was common pipistrelle.</p> <p>The activity data indicated that the highest levels of activity occurred along Pendleton Brook and linear habitat features such as the hedgerows and watercourse located on-site. An adjacent treeline to the north west of the site was also shown to be important for the local bat population.</p>
Conclusions and Recommendations	<p>Pendleton Brook and the treelines/woodland to the west of the northern parcel were of particularly high value, and proposals detail they will be retained and buffered.</p> <p>The proposed works comprise the removal of areas of grassland habitats. However, areas of proposed vegetation and trees will be created in the west of the site, as well as attenuation features. These proposed habitats are anticipated to provide additional foraging and commuting opportunities for the local bat population.</p> <p>Additional species enhancements could comprise proposed bat boxes on the residential developments, providing roosting opportunities for bat species.</p> <p>All bats have some degree of sensitivity to artificial lighting. Due to the proposed works comprising residential developments, it is likely that streetlights will be included as part of the development. This lighting may disrupt the foraging and commuting of bat species. Therefore, a competent lighting professional should be consulted to produce a Lighting Design displaying sensitivity to retained features.</p>



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1. INTRODUCTION

1.1. BACKGROUND

E3P has been instructed by Gladman Developments Limited to undertake Bat Activity Surveys at Henthorn Road, Clitheroe; hereafter referred to as “the site”.

This report has been produced by Consultant Ecologist Max McCormick BSc (Hons), who has experience in completing Preliminary Roost Assessments (PRAs) and Nocturnal Bat Activity Surveys at many sites across the UK.

1.2. PREVIOUS SURVEYS

E3P conducted a Preliminary Ecological Appraisal (PEA) on the site in December 2025 (report reference: 82-168-R1). The site comprised comprise modified grassland, native hedgerows, species rich native hedgerows, individual trees, and other rivers and streams.

The site was found to have High potential for foraging and commuting bats, as the hedgerows and individual trees on site are likely to attract some invertebrate prey and, in turn, provide valuable foraging opportunities for the species group. In addition, the unnamed watercourse that runs through the site and the adjacent Pendleton Brook both provide valuable foraging and commuting features and connectivity to additional habitats within proximity to the site, such as the River Ribble BHS, located approximately 80 m northwest of the site and deciduous woodland Biodiversity Action Plan priority habitats. As such, Night-time Bat Walkover Surveys and Static Detector Surveys were recommended.

1.3. PROPOSED DEVELOPMENT

Development proposals comprise an outline application for the construction of residential units with associated gardens, access roads, and hard and soft landscaping.

1.4. SITE DESCRIPTION

The site comprises two parcels of land located north and south of Henthorn Road. The site is located at the southwestern edge of Clitheroe. Pendleton Brook defines the site’s southern boundary. The River Ribble is located 110 m northwest of the site at its closest point. An active railway line is located 180 east of the site, and a sewage treatment works is located 120 m south of the site. Please refer to Figure 1 for the approximate site location.



Figure 1 **Approximate Site Location**



1.5. OBJECTIVES

The objectives of the Nocturnal Bat Activity Surveys were to identify:

- ✦ Any important linear features within the site.
- ✦ Potential impacts of the proposed development on commuting and/or foraging bats.
- ✦ The need for mitigation.

The survey findings are detailed in this report, along with any recommendations.



2. METHODOLOGY

2.1. DESK STUDY

The following sources of information and ecological records were consulted:

- MAGIC – A web-based interactive mapping system, on which geographic information regarding key environmental schemes and designations are collated, including details of statutory conservation sites as well as data pertaining to protected species licences, accessed December 2025.
- Local data records provided by Lancashire Environment Records Network (LERN) on 20th December 2024.

2.2. NIGHT-TIME BAT WALKOVER SURVEYS

Night-time Bat Walkover (NBW) Surveys were undertaken following the guidance set out in Collins (2023). The surveys were conducted using appropriate bat detectors suitable for commercial use and were undertaken by Max McCormick and Graduate Ecologists Noah Salt BSc (Hons), and Oliver Nicholson BSc (Hons).

The site was assessed as having High suitability for commuting and foraging bats. Therefore, it was recommended that one survey visit be conducted per season (Spring - April/May, Summer – June/July/August and Autumn - September/October (inclusive)) in appropriate weather conditions for bats. Please see Table 1 for details of the surveys.

Table 1 NBW Survey Details

SURVEY	DATE	SUNSET	SURVEY TIMINGS	WEATHER CONDITIONS
Spring	08/05/2025	20:53	20:53 – 23:08	Dry, 13°C, 5% cloud cover, moderate breeze
Summer	12/06/2025	21:41	21:41 – 23:54	Dry, 16°C, 80% cloud cover, moderate breeze
Autumn	02/09/2025	19:57	19:57 – 22:22	Dry, 16°C, 85% cloud cover, still

Qualified bat surveyors walked a transect route throughout the site, considering habitat features and areas of highest bat roosting potential. Surveyors waited at the first listening point for 30 minutes, then stopped at the remaining listening points for five-minute periods, alternating the direction during the summer survey. Please refer to Appendix II for the transect and listening point locations surveyed.

2.3. STATIC BAT ACTIVITY SURVEYS

Static Bat Activity Surveys were undertaken following the guidance set out in Collins (2023). The surveys were conducted using appropriate static bat detectors suitable for commercial use (Anabat Express (with full spectrum recording), Anabat Chorus, or Anabat Ranger).

Three static detectors were placed across three locations of the site from April to September 2025. The locations were assessed as being important locations for foraging and commuting bats. The detectors remained at each location for a minimum of five consecutive nights. Please refer to Table 2 for the grid references and dates of the Static Bat Activity Surveys and Appendix II for the locations of the static detectors.



Table 2 Static Bat Activity Survey Details

LOCATION NUMBER		LOCATION GRID REFERENCE			
1		SD 73039 40678			
2		SD 72886 40489			
3		SD 72768 40608			
DATES					
APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
08/04/2025 to 15/04/2025	02/05/2025 to 10/05/2025	11/06/2025 to 19/06/2025	11/07/2025 to 18/07/2025	12/08/2025 to 18/08/2025	08/09/2025 to 15/09/2025

2.4. DATA ANALYSIS

Anabat Express static detectors (with full spectrum recording), Anabat Choruses, and Anabat Rangers were used to record bat calls during the Static Bat Activity Surveys, whilst an Echo Meter Touch 2 was utilised for the NBW Surveys. Data from these instruments was converted from WAV to ZCA using Wildlife Acoustics Kaleidoscope Software and was analysed using AnalookW.

2.5. SURVEY LIMITATIONS

Due to an error in the static detector, no data was recorded at Location 1 when it was deployed in August. This constraint has been taken into consideration during the assessment.

When the static detector was deployed at Location 2 in April, only two nights worth of data were recorded. However, this is not deemed a major constraint due to the abundance of data that was recorded during these two nights.

The static detectors are unable to differentiate between individual bats. As such, only the number of passes can be determined, rather than the specific number of individual bats. Static detectors pick up other noise within the environment, which can block out bat calls as such, some locations can have a drop in the number of recorded passes.

Alcathoe bat (*Myotis alcathoe*), Brandt's bat (*Myotis brandtii*), Daubenton's bat (*Myotis daubentonii*), and whiskered bat (*Myotis mystacinus*) are often difficult to distinguish between when conducting sound analysis. As such, the species have been recorded as *Myotis* species (*Myotis sp.*) during the static surveys.



3. BAT ACTIVITY SURVEY RESULTS

The following subsections provide a summary of bat activity noted on the Bat Activity Surveys. Please refer to Appendix I for the Survey Forms and Appendix II for the NBW Transect and Static Detector Location Plan.

3.1. NBW SPRING SURVEY – 08TH MAY 2025

Table 3 Nocturnal Bat Walkover Spring Survey Results

OBSERVATION	LISTENING POINT (LP) / TRANSECT (T)	SPECIES
Continuously Foraging	LP7	Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) x1, common pipistrelle (<i>Pipistrellus pipistrellus</i>) x1, Daubenton's bat x1
	LP8	Soprano pipistrelle x1
	LP19	Common pipistrelle x1
Commuting	LP4	Common pipistrelle x1
	LP5	Common pipistrelle x3
	LP6	Common pipistrelle x4
	LP8	Common pipistrelle x1
	LP9	Soprano pipistrelle x1
	LP10	Common pipistrelle x1
	Foraging	LP1
LP2		Soprano pipistrelle x4
T2		Soprano pipistrelle x1
LP5		Common pipistrelle x2
T5		Common pipistrelle x2
LP6		Soprano pipistrelle x1
T6		Soprano pipistrelle x1, common pipistrelle x1
T7		Common pipistrelle x1
LP10		Soprano pipistrelle x2
LP14		Common pipistrelle x1
Heard Not Seen	LP1	Noctule (<i>Nyctalus noctula</i>) x1, soprano pipistrelle x2
	T1	Soprano pipistrelle x1
	LP3	Soprano pipistrelle x5, noctule x1, common pipistrelle x1
	T3	Soprano pipistrelle x2
	LP5	Daubenton's bat x1
	T5	Soprano pipistrelle x1
	LP9	Soprano pipistrelle x1
	LP11	Soprano pipistrelle x1, common pipistrelle x3
	T13	Common pipistrelle x1
	T15	Common pipistrelle x1
	LP16	Common pipistrelle x3
	T16	Common pipistrelle x1
	LP17	Common pipistrelle x1
	T17	Common pipistrelle x1
	LP18	Common pipistrelle x2, soprano pipistrelle x1
	T18	Common pipistrelle x1
	LP19	Common pipistrelle x2
T19	Soprano pipistrelle x1	
LP20	Soprano pipistrelle x1	



3.2. NBW SUMMER SURVEY – 12TH JUNE 2025

Table 4 Nocturnal Bat Walkover Summer Survey Results

OBSERVATION	LISTENING POINT (LP) / TRANSECT (T)	SPECIES
Foraging	LP9	Soprano pipistrelle x1
	LP10	Common pipistrelle x1
	T11	Soprano pipistrelle x1
	T14	Soprano pipistrelle x2, common pipistrelle x1
	T17	Daubenton's bat x3
	LP20	Soprano pipistrelle x5
Continuously Foraging	LP5	Common pipistrelle x1, soprano pipistrelle x1
	LP6	Common pipistrelle x1
	LP7	Soprano pipistrelle x1, common pipistrelle x1
	LP8	Soprano pipistrelle x2, common pipistrelle x1
	LP11	Soprano pipistrelle x2, common pipistrelle x1
	LP16	Soprano pipistrelle x1, Daubenton's bat x1
	LP17	Daubenton's bat x1, common pipistrelle x1, soprano pipistrelle x1
Commuting	LP4	Soprano pipistrelle x1
	LP6	Soprano pipistrelle x1
	LP9	Noctule x1
	LP10	Common pipistrelle x1
	T11	Common pipistrelle x1
	LP14	Common pipistrelle x1
	T16	Common pipistrelle x1, soprano pipistrelle x1
	LP20	Common pipistrelle x3
Heard Not Seen	LP1	Soprano pipistrelle x1, common pipistrelle x1, noctule x1
	T1	Soprano pipistrelle x1, common pipistrelle x1
	LP2	Soprano pipistrelle x1, common pipistrelle x1, noctule x1, Daubenton's bat x1
	T2	Common pipistrelle x1
	LP3	Common pipistrelle x1, Daubenton's bat x1, soprano pipistrelle x1, brown long-eared (<i>Plecotus auritus</i>) x1
	T3	Soprano pipistrelle x1
	T5	Common pipistrelle x1
	T6	Common pipistrelle x1
	T7	Soprano pipistrelle x1, noctule x1, common pipistrelle x1
	LP10	Common pipistrelle x1
	LP13	Common pipistrelle x3
	T13	Common pipistrelle x1
	LP14	Daubenton's bat x1
	T17	Common pipistrelle x2
	LP19	Soprano pipistrelle x1
	LP20	Noctule x5



3.3. NBW AUTUMN SURVEY – 02ND SEPTEMBER 2025

Table 5 Nocturnal Bat Walkover Autumn Survey Results

OBSERVATION	LISTENING POINT (LP) / TRANSECT (T)	SPECIES
Foraging	T2	Noctule x1
Commuting	LP5	Brown long-eared x1
	LP6	Common pipistrelle x1
Heard Not Seen	LP1	Noctule x3, soprano pipistrelle x2, Daubenton's bat x1, Brown long-eared x1
	T1	Soprano pipistrelle x1
	LP2	Noctule x2, soprano pipistrelle x1
	LP3	Noctule x1
	T3	Noctule x1, soprano pipistrelle x1
	LP4	Noctule x1, soprano pipistrelle x1
	T4	Noctule x1, soprano pipistrelle x1
	LP5	Common pipistrelle x2, soprano pipistrelle x1
	T5	Common pipistrelle x1, soprano pipistrelle x1
	LP7	Common pipistrelle x2, Daubenton's bat x1, Noctule x1
	LP8	Noctule x2, soprano pipistrelle x1, brown long-eared x1, common pipistrelle x1
	LP10	Brown long-eared x1, common pipistrelle x1, soprano pipistrelle x1, noctule x1
	T10	Common pipistrelle x1, noctule x1
	LP11	Soprano pipistrelle x2, common pipistrelle x1, noctule x1, Daubenton's bat x1
	T11	Common pipistrelle x3
	LP12	Common pipistrelle x2, soprano pipistrelle x1, brown long-eared x1
	LP13	Common pipistrelle x1
	LP14	Daubenton's bat x1, common pipistrelle x1
	LP15	Common pipistrelle x1
	T15	Common pipistrelle x1
LP16	Common pipistrelle x1	
LP17	Common pipistrelle x1	
LP18	Common pipistrelle x2	
LP19	Common pipistrelle x1	
T19	Common pipistrelle x1	
LP20	Common pipistrelle x1	
T20	Common pipistrelle x1	

3.4. STATIC BAT ACTIVITY SURVEY

Static Bat Activity Surveys were conducted at three different locations between April and September 2025. Across all locations, common pipistrelle was the most frequent, with other species present including soprano pipistrelle, noctule and Myotis species (*Myotis sp.*). The average passes per night for each location during April - September is outlined in the following subsections.



3.4.1. LOCATION 1

Table 6 Average Passes per Night

2025 MONTH	AVG. COMMON PIPISTRELLE PASSES PER NIGHT	AVG. SOPRANO PIPISTRELLE PASSES PER NIGHT	AVG. NOCTULE PASSES PER NIGHT	AVG. MYOTIS SPECIES PASSES PER NIGHT	AVG. BROWN LONG-EARED PASSES PER NIGHT	TOTAL AVG. BAT PASSES PER NIGHT
April	44.5	21	0.7	14.4	0	80.7
May	61.4	57	2.7	14.1	0	135.6
June	152.8	84	0.67	4.17	0	241.8
July	25	27	2.6	3.6	0	58.2
August	-	-	-	-	-	-
September	30.4	59.4	0.8	6.2	1.4	97

Location 1 was located within a species-rich native hedgerow along the northern boundary of the site. This location recorded high levels of activity, with June recording the highest average number of bat passes per night. A peak count of 214 common pipistrelle passes was recorded on 01st May, a peak count of 123 soprano pipistrelle passes was recorded on 13th June, a peak count of eight noctule passes was recorded on 14th July, and a peak count of 22 myotis species was recorded on 03rd May.

3.4.2. LOCATION 2

Table 7 Average Passes per Night

2025 MONTH	AVG. COMMON PIPISTRELLE PASSES PER NIGHT	AVG. SOPRANO PIPISTRELLE PASSES PER NIGHT	AVG. NOCTULE PASSES PER NIGHT	AVG. MYOTIS SPECIES PASSES PER NIGHT	TOTAL AVG. BAT PASSES PER NIGHT
April	44	139	0	4	187
May	29.6	27.6	0	1.1	58.4
June	33.3	36.5	0	2.67	72.5
July	86.8	245.6	3.8	26.4	363.4
August	8	0.5	0	0.4	9.2
September	7	3	0	0.2	10.2

Location 2 was located within an area of scrub adjacent to Pendleton Brook. This location recorded high levels of activity, with July recording the highest average number of bat passes per night. A peak count of 141 common pipistrelle passes was recorded on 13th July, a peak count of 443 soprano pipistrelle passes was recorded on 15th July, a peak count of five noctule passes was recorded on 14th July, and a peak count of 39 myotis species passes was recorded on 11th July.



3.4.3. LOCATION 3

Table 8 Average Passes per Night

2025 MONTH	AVG. COMMON PIPISTRELLE PASSES PER NIGHT	AVG. SOPRANO PIPISTRELLE PASSES PER NIGHT	AVG. NOCTULE PASSES PER NIGHT	AVG. MYOTIS SPECIES PASSES PER NIGHT	TOTAL AVG. BAT PASSES PER NIGHT
April	367.8	368.8	4.6	9.4	752.6
May	23.4	22.7	4.9	1.3	52.4
June	121.7	63	3.2	3.7	191.5
July	27.8	123.2	7.8	6.2	165.4
August	19.6	64	1.8	17.4	103.2
September	19.2	11.4	0.4	0.6	32

Location 3 was located within a species-rich native hedgerow within the north east corner of the site. This location recorded high levels of activity, with April recording the highest average number of bat passes per night. A peak count of 646 common pipistrelle passes was recorded on 12th April, a peak count of 776 soprano pipistrelle passes was recorded on 12th April, a peak count of 24 noctule passes was recorded on 13th July, and a peak count of 40 myotis species was recorded on 13th August.



4. SURVEY INTERPRETATION

4.1. STATIC SURVEY INTERPRETATION

High levels of bat activity were recorded at all static detector locations between April and September within the site. The static detectors recorded several species, including common pipistrelle, soprano pipistrelle, noctule and myotis species. Activity was highest at Location 3, which can be attributed to higher levels of activity recorded in April. The recordings across all locations supported the activity survey results that the habitats on-site and adjacent to the site provide foraging and commuting opportunities for local bat species. Please see Appendix II for the static detector locations.

4.2. NBW SURVEYS INTERPRETATION

Detailed interpretations of the bat activity at different habitat locations on and adjacent to the site are provided in Table 9. Hedgerow references have been taken from the Preliminary Ecological Appraisal by E3P (report reference: 82-168-R1). Please see Appendix II for the NBW transect and listening points.

Table 9 NBW Habitat Interpretation

HABITAT	INTERPRETATION
Pendleton Brook	LP1, LP2 and LP3 were located along the northern bank of Pendleton Brook. Species identified at these points included common pipistrelle, soprano pipistrelle, noctule, Daubenton's bat and brown long-eared. Bats were noted foraging along the brook west to east, as well as utilising the off-site woodland canopies along the southern bank of Pendleton Brook. Whilst a majority of the activity for all three surveys was heard, not seen, the activity recorded was continuous at each point, suggesting that bats that were not spotted were continuously foraging along the brook and woodland. A peak count of seven passes occurred at LP3 during the Spring survey, as well as seven passes at LP1 during the Autumn survey.
Hedgerow 6 (H6)	LP4, LP5, LP6 and LP7 were located along a native hedgerow (H6) along the south eastern boundary of the site. This hedgerow also contained four individual trees that were assessed as PRF-M bat roosting potential. Species identified at these points included common pipistrelle, soprano pipistrelle, noctule, Daubenton's bat and brown-long eared. Bats were identified commuting along the hedgerow south to north as well as continuously foraging within the individual trees. A peak count of five passes occurred at LP5 during the Spring survey, as well as five passes at LP7 during the Spring survey.
Hedgerow 5 (H5)	LP8, LP9 and LP10 were located along a species-rich native hedgerow (H5) along the northern boundary of the site. A PRF-I tree (T7) was also located between LP8 and LP9. Species identified at these points included common pipistrelle, soprano pipistrelle, noctule and brown long-eared. Bats were identified commuting west to east along the hedgerow and were also seen continually foraging in proximity to T7. A peak count of five passes occurred at LP8 during the Autumn survey.
Hedgerow 4 (H4) and Watercourse 1 (WC1)	LP11, LP12, and LP13 were located between a species-rich native hedgerow (H4) and a watercourse (WC1). Species identified at these points included common pipistrelle, soprano pipistrelle, noctule, Daubenton's bat and brown-long eared. A majority of the activity at these habitats was heard, not seen, though some individuals were seen continuously foraging along H6, particularly during the Summer survey. A peak count of five passes occurred at LP11 during the Autumn survey.



HABITAT	INTERPRETATION
<p>Hedgerow 3 (H3)</p>	<p>LP14 and LP15 were located along a species-rich native hedgerow. Species identified at these points included common pipistrelle and Daubenton's bat. A low amount of activity was recorded at this habitat, suggesting this hedgerow is unfavourable when compared to the other habitats on-site. LP15 only recorded activity during the Autumn survey, where only one common pipistrelle was heard, not seen. A peak count of two passes occurred at LP14 during the Summer survey, as well as two passes at LP14 during the Autumn survey.</p>
<p>Hedgerow 2 (H2)</p>	<p>LP16 and LP17 were located along a species-rich native hedgerow. Species identified at these points included common pipistrelle, soprano pipistrelle and Daubenton's bat. Bats were identified continuously foraging along H2 during the Summer survey, though activity was only heard, not seen, during the Spring and Autumn surveys. A peak count of three passes occurred at LP16 during the Spring Survey, as well as three passes at LP17 during the Summer survey.</p>
<p>Treeline</p>	<p>LP18, LP19 and LP20 were located along the north western boundary of the smaller field and adjacent to a treeline containing mature trees. Species identified at these points included common pipistrelle, soprano pipistrelle and noctule. Bats were identified commuting along the treeline and utilising the encroaching tree canopy for foraging. The highest peak count of bats was recorded at this habitat, where a peak count of 13 passes occurred at LP20 during the Summer survey.</p>



5. IMPACT ASSESSMENT AND RECOMMENDED MITIGATION

5.1. HABITAT RETENTION AND CREATION

The NBW and Static Surveys illustrated that common pipistrelles and soprano pipistrelles utilise the site for foraging and commuting purposes in large numbers. Counts of noctule, myotis species and brown long-eared were also identified using the site for commuting and foraging in smaller numbers.

The Framework Plan by FPCR (2025) show the retention of H6 and the individual trees, H5 and T7, H4 and WC1, and a majority of H2. Additionally, a buffer from Pendleton Brook will be retained, with the riparian habitat anticipated to be enhanced as a result of the development. As evidenced during the surveys, these habitats were highly favoured by foraging and commuting bat species. Therefore, it is recommended that these habitats are retained and the buffer from Pendleton Brook is maintained throughout the duration of construction and the development to ensure that bats can forage and commute without interruption and to maintain connectivity to the wider area via the brook.

The proposed works comprise the removal of areas of grassland habitats. However, areas of proposed vegetation and trees are proposed in the west of the site, as well as attenuation features. These proposed habitats are anticipated to provide additional foraging and commuting opportunities for the local bat population. In order to ensure that these features secure maximum value for bat species, planting should be of native, flowering varieties and habitats should form mosaics to increase the number of invertebrate prey.

Additional species enhancements could comprise proposed bat boxes on the residential developments, providing roosting opportunities for bat species.

5.2. LIGHTING MITIGATION

All bats have some degree of sensitivity to artificial lighting. Due to the proposed works comprising residential developments, it is likely that streetlights will be included as part of the development. This lighting may disrupt the foraging and commuting of bat species. Therefore, a competent lighting professional should be consulted to produce a Lighting Design with a horizontal illuminance contour plan (showing contours for 0.2, 0.5, 1, 5, and 10 lux) to demonstrate that Pendleton Brook to the south and hedgerows to the east and north will be maintained as dark areas of 0.5 lux levels or less.

In addition to consulting a competent lighting professional, it is recommended that the following should be followed:

- ✿ Lighting should face away from retained habitats to maintain them as dark areas.
- ✿ Warm white tones are preferable to blue-toned lights (3000k).
- ✿ LED lights are preferable as they produce minimal UV.
- ✿ To avoid light spill skyward, ensure lights face downward.
- ✿ Make use of vegetation to block light spill into dark areas.

Lighting should follow the protocols outlined in the Institute for Lighting Engineers document “Guidance for the Reduction of Obtrusive Lighting” (2021) and BCT’s “Bats and Artificial Lighting in the UK” (2023) to minimise disturbance and sky-glow off-site.



6. REFERENCES

- ✿ Bat Conservation Trust (2023). Bats and Artificial Lighting at Night Guidance Note 8.
- ✿ Collins, J. (ed.) (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th edition. The Bat Conservation Trust, London.
- ✿ E3P (2025) Preliminary Ecological Appraisal – Henthorn Road, Clitheroe (Report Reference: 82-168-R1).
- ✿ FPCR (2025). Framework Plan. (Drawing Reference: 9053-FPCR-XX-XX-DR-L-0001 Rev P06).
- ✿ Institution of Lighting Professionals (2021). The Reduction of Obtrusive Light Guidance Note 1.

END OF REPORT

APPENDIX I

SURVEY FORMS





SPRING ACTIVITY SURVEY

Date: 08/05/2025
 Sunset: 20:53
 Start time: 20:53
 End time: 23:08

Start Weather: Dry, 13°C, 5% cloud cover, light breeze
 End Weather: Dry, 12°C, 20% cloud cover, light breeze

Surveyor: Max McCormick and Noah Salt

REFERENCE POINT	TIMINGS	SPECIES	TIME	ACTIVITY
LP1	20:53-21:23	Noctule x1, common pipistrelle x1, soprano pipistrelle x2	21:12, 21:20, 21:16, 21:21	Noctules heard not seen, common pipistrelle foraging, soprano pipistrelle heard not seen, lots of activity by the woodland canopy
T1	21:23 – 21:24	Soprano pipistrelle x1	21:23	Heard not seen
LP2	21:24 – 21:29	Soprano pipistrelle x4	21:25, 21:25, 21:26, 21:27	Foraging on the other side of the river
T2	21:29 – 21:30	Soprano pipistrelle x1	21:29	Foraging
LP3	21:30 – 21:35	Soprano pipistrelle x5, Noctule x1, Common pipistrelle x1	21:30 – 21:35	Heard not seen, continuous activity
T3	21:35 – 21:36	Soprano pipistrelle x2	21:35, 21:36	Heard not seen
LP4	21:36 – 21:41	Common pipistrelle x1	21:40	Commuting
T4	21:41 – 21:42	-	-	-
LP5	21:42 – 21:47	Common pipistrelle x5, Daubenton's bat x1	21:42 – 21:47	Common pipistrelle seen commuting then foraging, Daubenton's bat heard but not seen
T5	21:47 – 21:48	Soprano pipistrelle x1, Common pipistrelle x2	21:47, 21:48	Soprano pipistrelle heard not seen, Common pipistrelle foraging
LP6	21:48 – 21:53	Soprano pipistrelle x1, Common pipistrelle x4	21:48, 21:49, 21:51, 21:52, 21:52	Seen foraging and commuting
T6	21:53 – 21:54	Soprano pipistrelle x1, Common pipistrelle x1	21:53, 21:53	Foraging
LP7	21:54 – 21:59	Soprano pipistrelle x1, Common pipistrelle x1, Daubenton's bat x1	21:55, 21:56, 21:57	Continually foraging, lots of activity



T7	21:59 – 22:00	Common pipistrelle x1	22:00	Foraging
LP8	22:00 – 22:05	Soprano pipistrelle x1, Common pipistrelle x1	22:00, 22:02	Soprano pipistrelle continuously foraging, and a common pipistrelle seen commuting
T8	22:05 – 22:06	-	-	-
LP9	22:06 – 22:11	Soprano pipistrelle x2	22:07, 22:08	Heard not seen, then later seen commuting east
T9	22:11 – 22:12	-	-	-
LP10	22:12 – 22:17	Soprano pipistrelle x2, Common pipistrelle x1	22:13, 22:14, 22:16	Soprano pipistrelle foraging, common pipistrelle seen commuting
T10	22:17- 22:18	-	-	-
LP11	22:18- 22:23	Soprano pipistrelle x1, Common pipistrelle x3	22:19, 22:20, 22:21, 22:21	Heard not seen
T11	22:23- 22:24	-	-	-
LP12	22:24- 22:29	-	-	-
T12	22:29- 22:30	-	-	-
LP13	22:20- 22:25	-	-	-
T13	22:25 – 22:26	Common pipistrelle x1	22:25	Heard not seen
LP14	22:26 – 22:31	Common pipistrelle x1	22:30	Foraging then heard not seen
T14	22:31 – 22:32	-	-	-
LP15	22:32 – 22:37	-	-	-
T15	22:37 – 22:38	Common pipistrelle x1	22:37	Heard not seen
LP16	22:38 – 22:43	Common pipistrelle x3	22:38, 22:39, 22:42	Heard not seen
T16	22:43 – 22:44	Common pipistrelle x1	22:43	Heard not seen
LP17	22:44 – 22:49	Common pipistrelle x1	22:46	Heard not seen
T17	22:49 – 22:50	Common pipistrelle x1	22:49	Heard not seen (assumed continually foraging)
LP18	22:50 – 22:55	Common pipistrelle x2, Soprano pipistrelle	22:50, 22:52, 22:55	Heard not seen
T18	22:55 – 22:55	Common pipistrelle x1	22:55	Heard not seen
LP19	22:55 – 23:00	Common pipistrelle x3	22:55 – 23:00	Heard not seen, then seen continually foraging.
T19	23:00 – 23:01	Soprano pipistrelle x1	23:01	Heard not seen



LP20	23:01 – 23:06	Soprano pipistrelle x1	23:02	Heard not seen
T20	23:06 – 23:08	-	-	-



SUMMER ACTIVITY SURVEY

Date: 12/06/2025
 Sunset: 21:41
 Start time: 21:41
 End time: 23:54

Start Weather: Dry, 16°C, 80% cloud cover, light breeze
 End Weather: Dry, 15°C, 80% cloud cover, light breeze

Surveyor: Noah Salt

REFERENCE POINT	TIMINGS	SPECIES	TIME	ACTIVITY
LP20	21:41- 22:11	Noctule x5, common pipistrelle x3, soprano pipistrelle x5	21:46, 21:47, 22:06	Heard not seen, then a few individuals commuting and foraging over woodland to the west
T20	22:11- 22:12	-	-	-
LP19	22:12 – 22:17	Soprano pipistrelle x1	22:15	Heard not seen
T19	22:17 – 22:17	-	-	-
LP14	22:18 – 22:23	Daubenton's bat x1, common pipistrelle x1	22:19, 22:20	Heard not seen, seen commuting east along the hedgerow
T14	22:23 – 22:23	Soprano pipistrelle x2, common pipistrelle x1	22:23	Foraging along hedgerow
LP13	22:24 – 22:29	Common pipistrelle x3	22:24, 22:25, 22:26	Heard not seen
T13	22:29 – 22:30	Common pipistrelle x1	22:29	Heard not seen
LP12	22:30 – 22:35	-	-	-
T12	22:35 – 22:35	-	-	-
LP11	22:36 – 22:41	Soprano pipistrelle x2, common pipistrelle x1	22:36 – 22:41	Continuously foraging
T11	22:41 – 22:41	Common pipistrelle x1, soprano pipistrelle x1	22:35 – 22:36	Commuting and foraging along Henthorn Road
LP16	22:42 – 22:47	Soprano pipistrelle x1, Daubenton's bat x1	22:42, 22:43	Continuously foraging along the treeline
T16	22:47 – 22:47	Common pipistrelle x1, soprano pipistrelle x1	22:47	Foraging along hedgerow



LP17	22:48 – 22:53	Daubenton's bat x1, common pipistrelle x1, soprano pipistrelle x1	22:49, 22:50, 22:51	Continuously foraging along the hedgerow
T17	22:53 – 22:54	Daubenton's x3, common pipistrelle x2	22:53	Daubenton's feeding along the SUDs pond, Common pipistrelle heard but not seen
LP10	22:54 – 22:59	Common pipistrelle x2, Daubenton's x1	22:54, 22:56	Foraging and commuting, heard not seen
T10	22:59 – 23:00	-	-	-
LP9	23:00 – 23:05	Soprano pipistrelle x1, noctule x1	23:02	Foraging and commuting
T9	23:05 – 23:06	-	-	-
LP8	23:06 – 23:11	Soprano pipistrelle x2, common pipistrelle x1	23:06, 23:08, 23:10	Continuously foraging around the tree, three individuals were seen at once
T8	23:11 – 23:12	-	-	-
LP7	23:12 – 23:17	Soprano pipistrelle x1, common pipistrelle x1	23:13, 23:14	Continuously foraging
T7	23:18 – 23:18	Soprano pipistrelle x1, noctule x1, common pipistrelle x1	23:18	Heard not seen
LP6	23:18 – 23:23	Common pipistrelle x1, soprano pipistrelle x1	23:19, 23:20	Continuously foraging and commuting
T6	23:23 – 23:23	Common pipistrelle x1	23:23	Heard not seen
LP5	23:24 – 23:29	Common pipistrelle x1, soprano pipistrelle x1	23:24 – 23:29	Continuously foraging
T5	23:29 – 23:29	Common pipistrelle x1	23:29	Heard not seen
LP4	23:30 – 23:35	Soprano pipistrelle x1	23:31	Commuting
T4	23:35 – 23:35	-	-	-
LP3	23:36 – 23:41	Common pipistrelle x1, Daubenton's x1, soprano pipistrelle x1, brown long- eared x1	23:36 – 23:41	Heard not seen, continuous activity
T3	23:41 – 23:41	Soprano pipistrelle x1	23:41	Heard not seen
LP2	23:42 – 23:47	Soprano pipistrelle x1, common pipistrelle x1, noctule x1, Daubenton's x1	23:42 – 23:47	Heard not seen, continuous activity
T2	23:47 – 23:48	Common pipistrelle x1	23:47	Heard not seen



LP1	23:48 – 23:53	Soprano pipistrelle x1, common pipistrelle x1, noctule x1	23:50	Heard not seen
T1	23:53 – 23:54	Soprano pipistrelle x1, common pipistrelle x1	23:54	Heard not seen



AUTMUN ACTIVITY SURVEY

Date: 02/09/2025
 Sunset: 19:57
 Start time: 19:57
 End time: 22:22

Start Weather: Dry, 16°C, 85% cloud cover, still
 End Weather: Dry, 14°C, 100% cloud cover, light breeze

Surveyor: Max McCormick and Oliver Nicholson

REFERENCE POINT	TIMINGS	SPECIES	TIME	ACTIVITY
LP1	19:57 – 20:27	Noctule x3, soprano pipistrelle x2, Daubenton's bat x1, brown long-eared x1	20:06, 20:15, 20:15, 20:18, 20:19	Heard not seen
T1	20:27 – 20:27	Soprano pipistrelle x1	20:27	Heard not seen
LP2	20:27 – 20:32	Noctule x2, soprano pipistrelle x1	20:30, 20:31, 20:32	Heard not seen
T2	20:32 – 20:34	Noctule x1	20:32 – 20:34	Foraging along the river from west to east
LP3	20:34 – 20:39	Noctule x1	20:38	Heard not seen
T3	20:39 – 20:40	Noctule x1, soprano pipistrelle x1	20:39	Heard not seen
LP4	20:40 – 20:45	Noctule x1, soprano pipistrelle x1	20:44	Heard not seen
T4	20:45 – 20:46	Noctule x1, soprano pipistrelle x1	20:45	Heard not seen
LP5	20:46 – 20:51	Common pipistrelle x2, soprano pipistrelle x1, brown long-eared x1	20:46, 20:46, 20:47	Heard not seen, commuting south to north
T5	20:51 – 20:51	Common pipistrelle x1, soprano pipistrelle x1	20:51	Heard not seen
LP6	20:52 – 20:57	Common pipistrelle x1	20:52	Commuting south to north
T6	20:57 – 20:57	-	-	-
LP7	20:58 – 21:03	Common pipistrelle x2, Daubenton's bat x1, noctule x1	20:56, 20:58, 20:58	Heard not seen
T7	21:03 – 21:03	-	-	-
LP8	21:03 – 21:08	Noctule x2, soprano pipistrelle x1, brown long-eared x1, common pipistrelle x1	21:02, 21:03, 21:04, 21:05	Heard not seen
T8	21:08 – 21:08	-	-	-
LP9	21:09 – 21:14	-	-	-
T9	21:14 – 21:15	-	-	-



LP10	21:15 – 21:20	Brown long-eared x1, common pipistrelle x1, soprano pipistrelle x1, noctule x1	21:15, 21:15, 21:17	Heard not seen
T10	21:20 – 21:21	Common pipistrelle x1, noctule x1	21:20	Heard not seen
LP11	21:21 – 21:26	Soprano pipistrelle x2, common pipistrelle x1, noctule x1, Daubenton's bat x1	21:21, 21:23, 21:26	Heard not seen
T11	21:26 – 21:26	Common pipistrelle x3	21:26	Heard not seen
LP12	21:27 – 21:32	Common pipistrelle x2, soprano pipistrelle x1, brown long-eared x1	21:27, 21:30, 21:31	Heard not seen
T12	21:32 – 21:33	-	-	-
LP13	21:33 – 21:38	Common pipistrelle x1	21:34	Heard not seen
T13	21:38 – 21:38	-	-	-
LP14	21:39 – 21:44	Daubenton's bat x1, common pipistrelle x1	21:39, 21:42	Heard not seen
T14	21:44 – 21:45	-	-	-
LP15	21:45 – 21:50	Common pipistrelle x1	21:46	Heard not seen
T15	21:50 – 21:50	Common pipistrelle x1	21:50	Heard not seen
LP16	21:51 – 21:56	Common pipistrelle x1	21:53	Heard not seen
T16	21:56 – 21:56	-	-	-
LP17	21:57 – 22:02	Common pipistrelle x1	22:01	Heard not seen
T17	22:02 – 22:02	-	-	-
LP18	22:03 – 22:08	Common pipistrelle x2	22:04	Heard not seen
T18	22:08 – 22:08	-	-	-
LP19	22:09 – 22:14	Common pipistrelle x1	22:09 – 22:14	Heard not seen
T19	22:14 – 22:14	Common pipistrelle x1	22:14	Heard not seen
LP20	22:15 – 22:20	Common pipistrelle x1	22:15	Heard not seen
T20	22:20 – 22:22	Common pipistrelle x1	22:21	Heard not seen

**APPENDIX II
NBW TRANSECT AND
STATIC DETECTOR
LOCATION PLAN**





Key:

- Red line boundary
- ▲ Static bat detector
- Transect route
- Listening point

Notes

Issue: 1	Revision: 2	Date: 10/12/2025	Drawn: LS2	Authorised: CK
Client: Gladman Developments Limited			Job No. 82-168	Date: 10/12/2025
			Drawing No. 82-168-011	Scale: 1:2300 @ A4
Job title: Henthorn Road, Clitheroe			Drawing title: NBW Transect and Static Detector Location Plan	



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