# Light Valley Solar

## Environmental Statement Volume 3

# Appendix 6.4: Bat Report

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Light Valley Solar

**Infrastructure Planning**

**Planning Act 2008**

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# Light Valley Solar

# DCO Submission

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## Appendix 6.4: Bat Report

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# 1 Introduction and context

## 1.1 Site background

1.1.1 This bat survey report has been produced by Tyler Grange Limited on behalf of Light Valley Solar Limited ('the Applicant') and relates to the Proposed Development of solar photovoltaic (PV) modules, Battery Energy Storage System (BESS) and associated infrastructure.

1.1.2 The Proposed Development's boundary, herein referred to as the Order Limits, is made up of four broad areas, the Solar Development Sites (900 ha), Cable Route Corridor (328.5 ha), Highways Improvements Areas (17.1 ha), and Solar Development Site 8 Access (24.1 ha). Underground electric cables laid within the Cable Route Corridor will connect the Solar Development Sites and the existing Monk Fryston Substation, where the Proposed Development will connect to the National Grid. The Highways Improvement Areas are sections of the highway network that will contain localised improvements to allow movement of construction vehicles on narrower sections of the local highway network, such as improvements to the road edge, traffic management, and provision of temporary passing places or visibility splays. The Solar Development Site 8 Access area will provide optionality to access Solar Development Site 8 from the north. The entirety of the Order Limits is within the administrative area of North Yorkshire Council and falls within what was Selby district.

1.1.3 The Solar Development Sites are split across a total of seven separate land parcels (Solar Development Sites 1-4 and 6-8) as presented in Figure 2.1: Illustrative Site Layout Plans (ES Volume 2) [**EN0110012/APP/LVS/06.02.02.01**] and in the Outline Environmental Masterplan [**EN0110012/APP/LVS/02.12**]. The Solar Development Sites comprise parcels of agricultural fields bound by hedgerows, ditches, and some mature trees, with small areas of woodland, grassland and scrub. The Cable Route Corridor is similarly comprised of agricultural fields and associated boundary features and passes through the River Ouse and Selby Dam. The Highways Improvements Areas, and Solar Development Site 8 Access largely comprise hardstanding roads and adjacent habitats, with Solar Development Site 8 Access also including a crossing over Selby Dam.

1.1.4 Within the report, the Cable Route Corridor (CRC), Highways Improvements Areas, and Solar Development Site 8 Access are collectively referred to as "Order Limits Outside of the Solar Development Sites".

1.1.5 Solar Development Sites 1-4 have been subject to a Daytime Bat Walkover (DBW), Nighttime Bat Walkover (NBW) and automated static detector deployment in 2024, and Solar Development Sites 6-8 were subject to the same surveys in 2025, the results of which are presented within this report.

1.1.6 As set out in Chapter 2: The Proposed Development (ES Volume 1) [**EN0110012/APP/LVS/06.01.02**] and the Design Parameters and Commitments Document [**E110012/APP/LVS/05.06**], the Order Limits Outside of the Solar

Development Sites have been sited to avoid important bat commuting and foraging features such as ponds, woodlands and trees, and will utilise existing road and crossing points in hedgerows and ditches where practicable. Furthermore, the habitat surveys completed for the Order Limits Outside of the Solar Development Sites (Appendix 6.1: Habitats Report (ES Volume 3) [**EN0110012/APP/LVS/06.03.06.01**]) confirm the majority of the area comprises arable fields or hardstanding roads, which provide sub-optimal commuting and foraging habitat for bats. Additionally, the works within the Order Limits Outside of the Solar Development Sites will be small scale and temporary, with any vegetation removal reinstated within two years of the start of works. For these reasons, impacts to commuting and foraging bats within the Order Limits Outside of the Solar Development Sites are anticipated to be very low/negligible and therefore, NBWs and static detector deployment have not been completed for the Order Limits Outside of the Solar Development Sites. This approach was agreed with North Yorkshire Council (see Table 6-8 within Chapter 6: Biodiversity (ES Volume 1) [**EN0110012/APS/LVS/06.01.06**]).

1.1.7 No buildings are located within the Order Limits that could support roosting bats, and the Design Principles have aimed to retain and buffer all trees within the Order Limits where practicable. However, as detailed in the Arboriculture Impact Assessment (Appendix 16.2 (ES Volume 3) [**EN0110012/APP/LVS/06.03.16.02**]), a number of scattered trees, some lengths of treelines and two/three trees within a woodland copse require removal to facilitate the Proposed Development. These trees were subject to a Ground Level Tree Assessment (GLTA) in January 2026, and where required, nocturnal emergence surveys in May to July 2026, the results of which are presented within this report.

## 1.2 Quality control

1.2.1 All ecologists at Tyler Grange Group Limited are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) or are working towards membership, and act under the direction of members and abide by the Institute's Code of Professional Conduct (Ref 1).

# 2 Methodology

2.1.1 The surveys followed standard methodologies set out in the Bat Mitigation Guidelines (Ref 2) the Bat Workers Manual (Ref 3) and Bat Surveys for Professional Ecologists- Good Practice Guidelines 4th Edition (Ref 4) and comprised:

1) DBW– Walkover of the Solar Development Sites to assess potential for bat activity including foraging areas and potential commuting routes;
2) NBW – to assess the species assemblage present at the Solar Development Sites and to identify significant commuting routes and foraging locations;
3) Automated static detector deployment – to supplement the NBWs by leaving static bat detectors within the Solar Development Sites to record for five consecutive nights per month or season; and
4) Ground Level Tree Assessment (GLTA) – Ground level inspection of trees within the Order Limits (to be removed/pruned to facilitate the Proposed Development) in an aim to assess the potential of these trees to support roosting bats.
5) Bat emergence surveys of PRF-M trees (having roosting suitability for multiple bats) that may be removed to facilitate the Proposed Development – Completion of emergence surveys to identify any current bat roosts within these trees.

## 2.2 Desk study

2.2.1 In March 2025, desk study data was received from North and East Yorkshire Ecological Data Centre (NEYEDC) for protected species groups, including bats, for up to 2 km from the Order Limits for the past 10 years.

## 2.3 Daytime bat walkover survey

2.3.1 Initially in 2024, Solar Development Sites 1-4 were assessed precautionarily for their suitability for commuting and foraging bats using desk study records and aerial imagery, to not miss the start of the bat surveying season. A DBW was then undertaken alongside the UK Habitats surveys completed in 2024 to confirm the initial assessment. Please refer to the Habitats Report (Appendix 6.1: Habitats Report (ES Volume 3) [**EN0110012/APP/LVS/06.03.06.01**]) for details of the habitat surveys including dates and surveyor qualifications. The DBW assessed habitats within Solar Development Sites 1-4 for the likelihood of use by foraging and commuting bats as detailed in Table 2-1 below.

2.3.2 A DBW was also completed for Solar Development Sites 6-8 during the UK Habitat surveys in May 2025. Please refer to the Habitats Report (Appendix 6.1: Habitats Report (ES Volume 3) [**EN0110012/APP/LVS/06.03.06.01]**) for details of the habitat surveys including dates and surveyor qualifications.

**Table 2-1 Flight Path and Foraging Habitats Assessment Criteria- Adapted from Collins, 2023 (Ref 4)**

| Suitability | Description of Roosting Habitats |
|---|---|
| None | No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines or generate/shelter insect populations available to foraging bats). |
| Negligible | No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour. |
| Low | Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.<br><br>Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub. |
| Moderate | Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens.<br><br>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water. |
| High | Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge.<br><br>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.<br><br>Site is close to and connected to known roosts. |

### Limitations of daytime bat walkover

2.3.3 No limitations were experienced during the DBWs.

## 2.4 Nighttime bat walkover

2.4.1 In 2024, Solar Development Sites 1-4 were assessed as providing moderate suitability for commuting and foraging bats, on a precautionarily basis, using desk study records and aerial imagery, as not to miss the start of the bat surveying season (DBW later confirmed Solar Development Site 1 retained the assessment of moderate, however Solar Development Site 2-4 were reduced to low suitability for commuting and foraging bats. See Section 3.2 below for reasoning). In 2025, Solar Development Sites 6-8 were assessed providing low suitability for commuting and foraging bats following the DBW.

2.4.2 As such, NBWs were completed at Solar Development Sites 1-4 based on habitats of moderate suitability for bats between April and October 2024, and Solar Development Sites 6-8 based on habitats of low suitability for bats between April and October 2025. All sites required one survey visit per season (spring-April/May, summer-June to August, and autumn-September/October), as per best practice guidance (Ref 2, Ref 3, and Ref 4).

2.4.3 The surveys aimed to record the bat species present and to determine the importance of any habitat features for foraging and/or commuting bats. Nine transects were required once per season (spring, summer and autumn) to survey Solar Development Sites 1-4 and 6-8, namely Transect 1, Transect 2 and Transect 3 (Solar Development Site 1), Transect 4 (Solar Development Site 2 and 3 combined), Transects 5, Transect 6 and Transect 7 (Solar Development Site 4), Transect 8 (Solar Development Site 6), and Transect 9 (Solar Development Site 7 and 8 combined). The NBW transects are shown on Figure 6.9: Bat Activity Transects and Static Locations (ES Volume 2) [**EN0110012/APP/LVS/06.02.06.09**].

2.4.4 Due to refinement of the Order Limits through the design development process, Transect 7 within Solar Development Site 4, and a small length of Transect 1 within Solar Development Site 1 are now outside of the Order Limits, however the results from these transects are still included within this report for context.

2.4.5 The survey visits commenced at sunset, with a 30-minute vantage point survey undertaken before the transect route commenced, as per guidance (Ref 2, Ref 3 and Ref 4). The transects were walked slowly, at a steady pace and the survey continued for between two and three hours after sunset, covering the period of peak activity for bats. The dusk NBWs used a combination of visual observation and echolocation detection techniques to identify any bat activity.

2.4.6 NBW metadata is included in Table 2 below, ordered by survey date (2025 surveys shown in grey for clarity). Weather conditions for the surveys were recorded as per the BCT guidance (Ref 4) including the air temperature, wind speed and precipitation at sunset, with sunset times recorded for each survey.

2.4.7 Echometer touch pro detectors, in combination with tablets, were used to record calls for later analysis. The static detectors were programmed to record from 30 minutes before sunset to 30 minutes after sunrise. Echolocation calls were later analysed utilising British Trust for Ornithology (BTO) Acoustic Pipeline before being assessed using BatExplorer software. Analysts of the sound files had all completed the Certificate of Bat Acoustics Analysis (COBAA) assessment course.

## Table 2-2 NBW - Weather Conditions and Details

| Survey Date | Transect Reference | Survey Timings | Weather Conditions | | |
|---|---|---|---|---|---|
| | | | Air Temperature at Sunset (˚C) | Precipitation | Wind (Beaufort Scale) |
| 24 April 2024 | Transect 5, 6 and 7 (Solar Development Site 4) | Start/Sunset: 20:24<br>Ends: 22:54 | 9 | Dry | 1 |
| 29 April 2024 | Transect 1 (Solar Development Site 1) | Start/Sunset: 20:32<br>Ends: 22:23 | 13.5 | Dry | 6 |
| 30 April 2024 | Transect 2 (Solar Development Site 1) | Start/Sunset: 20:34<br>Ends: 22:46 | 16 | Dry | 4 |
| 01 May 2024 | Transect 3 (Solar Development Site 1) | Start/Sunset: 20:36<br>Ends: 22:50 | 18 | Dry | 0 |
| 2 May 2024 | Transect 4 (Solar Development Site 2 and 3) | Start/Sunset: 20:38<br>Ends: 23:30 | 12 | Dry | 2 |
| 25 June 2024 | Transect 5, 6 and 7 (Solar Development Site 4) | Start/Sunset: 21:40 Ends: 00:17 | 20 | Dry | 0 |
| 8 July 2024 | Transect 4 (Solar Development Site 2 and 3) | Start/Sunset: 21:34<br>Ends: 00:30 | 16 | Light rain in last five minutes of survey | 1 |
| 16 July 2024 | Transect 1 (Solar Development Site 1) | Start/Sunset: 21:25<br>Ends: 23:10 | 18 | Dry | 3 |
| 17 July 2024 | Transect 3 (Solar Development Site 1) | Start/Sunset: 21:24 Ends: 23:28 | 22 | Dry | 2 |
| 18 July 2024 | Transect 2 (Solar Development Site 1) | Start/Sunset: 21:23 Ends: 23:10 | 21 | Dry | 2 |

| Survey Date | Transect Reference | Survey Timings | Weather Conditions | | |
|---|---|---|---|---|---|
| | | | Air Temperature at Sunset (˚C) | Precipitation | Wind (Beaufort Scale) |
| 10 September 2024 | Transect 5, 6 and 7 (Solar Development Site 4) | Start/Sunset: 19:32 Ends: 22:02 | 12 | Dry | 4 |
| 24 September 2024 | Transect 4 (Solar Development Site 2 and 3) | Start/Sunset: 18:57 Ends: 21:57 | 12 | Dry | 3 |
| 10 October 2024 | Transect 1 (Solar Development Site 1) | Start/Sunset: 18:15 End: 20:10 | 6 | Dry | 2 |
| 11 October 2024 | Transect 2 (Solar Development Site 1) | Start/Sunset: 18:10 End: 20:06 | 8 | Dry | 2 |
| 14 October 2024 | Transect 3 (Solar Development Site 1) | Start/Sunset: 18:08 End: 20:15 | 10 | Dry | 2 |
| 20 May 2025 | Transect 8 (Solar Development Site 6) | Start/Sunset: 21:10 End: 23:48 | 15 | Dry | 1 |
| 21 May 2025 | Transect 9 (Solar Development Sites 7 and 8) | Start/Sunset: 21:10 End: 23:28 | 10.5 | Dry | 1 |
| 16 July 2025 | Transect 8 (Solar Development Site 6) | Start/Sunset: 21:26 End: 23:50 | 19 | Dry | 2 |
| 18 July 2025 | Transect 9 (Solar Development Sites 7 and 8) | Start/Sunset: 21:23 End: 23:27 | 20 | Dry | 1 |
| 8 September 2025 | Transect 9 (Solar Development Sites 7 and 8) | Start/Sunset: 19:37 End: 21:46 | 13.5 | Dry | 1 |
| 9 September 2025 | Transect 8 | Start/Sunset: 19:34 | 18 | Dry | 3 |

| Survey Date | Transect Reference | Survey Timings | Weather Conditions | | |
|---|---|---|---|---|---|
| | | | Air Temperature at Sunset (˚C) | Precipitation | Wind (Beaufort Scale) |
| | (Solar Development Site 6) | End: 21:50 | | | |

### Limitations of nighttime bat walkover

2.4.8 Light rain at the end of the Transect 4 (Solar Development Site 2 and 3) summer survey could have reduced bat activity. However, as this was only the last five minutes of the survey, and the weather conditions were optimal for the first 2.55 hours, this is not considered to be a major limitation to assessment.

2.4.9 Dense arable crop caused a slight detour from the pre-determined route for Transect 8 (Solar Development Site 6) during the spring survey. The detour passed through a short section of field that fell outside of the Order Limits. However, as this slightly amended route was only taken during the spring survey, it is not considered to be a significant limitation to assessment.

2.4.10 Bat surveys are subject to numerous variables. The echolocation calls of species such as brown long-eared bats *Plecotus auritus* are of low amplitude and may not always be picked up on bat detectors. Survey results also represent a sample of bat activity during the surveys, and it is possible that bats may use the Solar Development Sites at other times, however the surveys completed provide sufficient coverage as per best practice guidance (Ref 2, Ref 3 and Ref 4).

## 2.5 Automated static detector deployment

2.5.1 Static detector surveys of Solar Development Sites 1-4 were completed based on habitats of moderate suitability for bats (on a precautionary basis), whereby static detectors were deployed each month between April and October 2024, as per best practice guidance (Ref 2, Ref 3 and Ref 4). These surveys were designed to record bat species over an extended period and to determine whether any habitat features are of importance to bats.

2.5.2 During each static survey, six static detectors were deployed in Solar Development Site 1 (Location 1, L1, to Location 6, L6), one static detector was deployed in Solar Development Site 2 (Location 7, L7), one static detector was deployed in Solar Development Site 3 (Location 8, L8) and six static detectors were deployed in Solar Development Site 4 (Location 9, L9 to Location 14, L14).

2.5.3 Due to refinement of the Order Limits through the design development process, Location 3 within Solar Development Site 1, and Locations 13 and 14 within Solar Development Site 4 are now outside of the Order Limits, however the results from these locations are still included within this report for context.

2.5.4 Static detector surveys of Solar Development Sites 6-8 were completed based on habitats of low suitability for bats, whereby static detectors were deployed in

2025, once each season (spring-April/May, summer-June to August, and autumn-September/October), as per best practice guidance (Ref 2, Ref 3 and Ref 4).

2.5.5 During each static survey, five static detectors were deployed in Solar Development Site 6 (Location 15, L15, to Location 19, L19), one static detector was deployed in Solar Development Site 7 (Location 20, L20), and two static detectors were deployed in Solar Development Site 8 (Location 21, L21 and Location 22, L22).

2.5.6 See Figure 6.9: Bat Activity Transects and Static Locations (ES Volume 2) **[EN0110012/APP/LVS/06.02.06.09]** for the locations of the 22 static detectors. The detectors were left in situ for a minimum of five nights of suitable weather conditions as per guidance (Ref 4).

2.5.7 Table 2-3 (Sites 1-4) and Table 4 (Sites 6-8) below shows the months which static detectors were deployed across each location, where green = successful deployment, X = failed deployment, and amber = did not record for full five nights (actual number of recorded nights detailed).

**Table 2-3 Static Detector Months Deployed for Sites 1-4***

| | | Month | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Site | Location | April | May | June | July | Aug | Sept | Oct |
| 1 | L1 | | | | | | | |
| 1 | L2 | | X | | | X | | |
| 1 | L3 | | | 2 nights | 3 nights | 4 nights | | |
| 1 | L4 | | | | | | 4 nights | |
| 1 | L5 | | | | | | | |
| 1 | L6 | | | | | X | | |
| 2 | L7 | | | | | | | |
| 3 | L8 | | | | 1 night | 2 nights | | |
| 4 | L9 | | 1 night | 2 nights | | X | | X |
| 4 | L10 | | | X | | X | 3 nights | |
| 4 | L11 | | | | | | | |
| 4 | L12 | X | 3 nights | | | X | 4 nights | |
| 4 | L13 | | | 4 nights | | | | |
| 4 | L14 | X | | | | | | X |

*Green = successful deployment, X = failed deployment, Amber = did not record for full five nights (actual number of recorded nights detailed)

**Table 2-4 Static Detector Seasons Deployed for Sites 6-8***

| Site | Location | Season | | |
|---|---|---|---|---|
| | | Spring | Summer | Autumn |
| 6 | L15 | | | |
| 6 | L16 | | | X |
| 6 | L17 | | | |
| 6 | L18 | | | |
| 6 | L19 | | | |
| 7 | L20 | | | |
| 8 | L21 | | | |
| 8 | L22 | | | |

*Green = successful deployment, X = failed deployment

2.5.8 The detectors were programmed to record from 30 minutes before sunset to 30 minutes after sunrise. Echolocation calls were later analysed utilising British Trust for Ornithology (BTO) automatic assessment of bat calls.

2.5.9 Weather conditions during the static detector surveys are provided in Table 5, including the air temperature, wind speed and precipitation at sunset, taken from the nearest weather station (York (Ref 5)). Table 2-5 includes sunset and sunrise times for each static detector survey (2025 surveys shown in grey for clarity).

2.5.10 Two of the static detectors located within Solar Development Site 6 (L16 and L17), and one static detector located within Solar Development Site 8 (L22), failed during the first autumn deployment (17 - 21 September 2025). As such, static detectors were redeployed in these locations on a second occasion in autumn (30 September 2025 to 4 October 2025). L16 failed again on this second deployment, which is discussed below in the limitations.

**Table 2-5 Static Survey Metadata**

| Survey Date | Sunset Time | Sunrise Time | Weather Conditions | | |
|---|---|---|---|---|---|
| | | | Air Temperature at Sunset (˚C) | Precipitation at Sunset | Wind |
| 9 April 2024 | 19:55 | 06:16 | 10 | Dry | Fresh breeze |
| 10 April 2024 | 19:57 | 06:14 | 14 | Dry | Fresh breeze |
| 11 April 2024 | 19:59 | 06:12 | 15 | Light rain | Gentle breeze |

| Survey Date | Sunset Time | Sunrise Time | Weather Conditions | | |
|---|---|---|---|---|---|
| | | | Air Temperature at Sunset (˚C) | Precipitation at Sunset | Wind |
| 12 April 2024 | 20:01 | 06:09 | 13 | Dry | Light air |
| 13 April 2024 | 20:03 | 06:07 | 11 | Dry | Gentle breeze |
| 8 May 2024 | 20:49 | 05:13 | 15 | Dry | Gentle breeze |
| 9 May 2024 | 20:51 | 05:11 | 15 | Dry | Light breeze |
| 10 May 2024 | 20:52 | 05:09 | 15 | Dry | Gentle breeze |
| 11 May 2024 | 50:54 | 05:07 | 11 | Dry | Gentle breeze |
| 12 May 2024 | 20:56 | 05:06 | 15 | Dry | Gentle breeze |
| 3 June 2024 | 21:28 | 04:37 | 16 | Dry | Gentle breeze |
| 4 June 2024 | 21:29 | 04:36 | 10 | Dry | Moderate breeze |
| 5 June 2024 | 21:30 | 04:35 | 10 | Dry | Gentle breeze |
| 6 June 2024 | 21:31 | 04:35 | 11 | Dry | Gentle breeze |
| 7 June 2024 | 21:32 | 04:34 | 12 | Dry | Gentle breeze |
| 1 July 2024 | 21:38 | 04:37 | 15 | Dry | Gentle breeze |
| 2 July 2024 | 21:38 | 04:38 | 13 | Dry | Light breeze |
| 3 July 2024 | 21:37 | 04:38 | 15 | Dry | Gentle breeze |
| 4 July 2024 | 21:37 | 04:39 | 14 | Dry | Moderate breeze |
| 5 July 2024 | 21:36 | 04:50 | 13 | Dry | Light air |
| 6 August 2024 | 20:51 | 05:27 | 17 | Dry | Light breeze |
| 7 August 2024 | 20:49 | 05:28 | 17 | Dry | Gentle breeze |
| 8 August 2024 | 20:47 | 05:30 | 19 | Light rain | Moderate breeze |
| 9 August 2024 | 20:45 | 05:32 | 18 | Dry | Moderate breeze |
| 10 August 2024 | 20:43 | 05:34 | 17 | Dry | Light breeze |
| 11 August 2024 | 20:41 | 05:36 | 16 | Dry | Gentle breeze |
| 4 Sept 2024 | 19:46 | 06:18 | 12 | Rain | Gentle breeze |
| 5 Sept 2024 | 19:44 | 06:20 | 15 | Drizzle | Fresh breeze |
| 6 Sept 2024 | 19:41 | 06:22 | 17 | Dry | Gentle breeze |
| 7 Sept 2024 | 19:39 | 06:24 | 17 | Dry | Gentle breeze |
| 8 Sept 2024 | 19:36 | 06:25 | 16 | Dry | Gentle breeze |
| 2 October 2024 | 18:37 | 07:08 | 10 | Dry | Gentle breeze |
| 3 October 2024 | 18:34 | 07:10 | 10 | Dry | Light breeze |
| 4 October 2024 | 18:32 | 07:12 | 10 | Dry | Gentle breeze |
| 5 October 2024 | 18:29 | 07:14 | 12 | Dry | Gentle breeze |
| 6 October 2024 | 18:27 | 07:16 | 12 | Light rain | Light breeze |
| 15 May 2025 | 21:00 | 05:01 | 11 | Dry | Gentle breeze |
| 16 May 2025 | 21:02 | 04:59 | 10 | Dry | Gentle breeze |

| Survey Date | Sunset Time | Sunrise Time | Weather Conditions | | |
|---|---|---|---|---|---|
| | | | Air Temperature at Sunset (˚C) | Precipitation at Sunset | Wind |
| 17 May 2025 | 21:04 | 04:58 | 10 | Dry | Moderate breeze |
| 18 May 2025 | 21:05 | 04:56 | 10 | Dry | Gentle breeze |
| 19 May 2025 | 21:07 | 04:55 | 11 | Dry | Gentle breeze |
| 20 May 2025 | 21:09 | 04:53 | 15 | Dry | Light breeze |
| 23 July 2025 | 21:17 | 05:03 | 16 | Dry | Light breeze |
| 24 July 2025 | 21:15 | 05:05 | 19 | Dry | Gentle breeze |
| 25 July 2025 | 21:13 | 05:06 | 18 | Dry | Gentle breeze |
| 26 July 2025 | 21:12 | 05:08 | 17 | Dry | Moderate breeze |
| 27 July 2025 | 21:10 | 05:09 | 17 | Dry | Gentle breeze |
| 17 September 2025 | 19:14 | 06:41 | 17 | Dry | Gentle breeze |
| 18 September 2025 | 19:12 | 06:43 | 20 | Dry | Moderate breeze |
| 19 September 2025 | 19:09 | 06:44 | 19 | Dry | Gentle breeze |
| 20 September 2025 | 19:07 | 06:46 | 11 | Rain | Moderate breeze |
| 21 September 2025 | 19:05 | 06:48 | 10 | Dry | Light breeze |
| 30 September 2025 (L16, L17, and L22 only) | 18:42 | 07:04 | 13 | Dry | Gentle breeze |
| 1 October 2025 (L16, L17, and L22 only) | 18:40 | 07:06 | 15 | Dry | Gentle breeze |
| 2 October 2025 (L16, L17, and L22 only) | 18:37 | 07:08 | 14 | Dry | Moderate breeze |
| 3 October 2025 (L16, L17, and L22 only) | 18:35 | 07:10 | 17 | Light rain | Moderate breeze |
| 4 October 2025 (L16, L17, and L22 only) | 18:32 | 07:11 | 12 | Light rain | Moderate breeze |

### Limitations of automatic static detector

2.5.11 Bat calls cannot always be identified to species level, either due to distant contacts or the similarity between some types of bats. Where this occurs, it is recorded as 'unidentified bat species' (Unid) or will show which bat species it is likely to be (e.g. *Pipistrelle sp*. / *Myotis sp*.).

2.5.12 As shown in Table 2-3**,** 11 of the 98 static deployments in 2024 failed to record any data. However, no location had more than two failures over the seven monthly deployments. In addition to this, on some occasions, the static detectors did not record for the full five nights, also shown in Table 2-3 (however in some instances six nights were analysed on successful deployments, which is above the requirement in guidance). Although this is a limitation, it is considered that the large number of successful static deployments provides a representative picture of the bat activity across the Solar Development Sites, with a large data set gathered throughout the various seasons. Also, the commitment to monthly static deployments was decided prior to the DBWs due to the time of year, with surveys completed based on habitats of moderate condition, on a precautionary basis. However, following the completion of the DBWs, Solar Development Sites 2, 3 and 4 were later downgraded to low suitability for commuting and foraging bats, and as per guidance, seasonal static deployment would be sufficient to accurately assess bat activity in this case (which was achieved as a minimum). Therefore, the conclusions of the surveys are deemed to be valid.

2.5.13 During the 2025 deployment, as shown in Table 2-4, two of the static detectors located within Solar Development Site 6, and one static detector located within Solar Development Site 8, failed during the first autumn deployment. As such, static detectors were redeployed in these locations on a second occasion in autumn. During this second autumn deployment, L16 (within Solar Development Site 6) was the only static to fail again, and it is suspected that the detector at L16 had been tampered with during both autumn deployments, due to damage noted on the detectors. As such, a detector was not deployed in this location again. However, this is not thought to pose a limitation to assessment due to the large data set gathered throughout the various seasons within Solar Development Site 6.

2.5.14 The weather was largely optimal during all static detector surveys, and a high level of confidence is placed on the results.

## 2.6 GLTA

2.6.1 The GLTA was undertaken on the 6 January, 8 January, and 13 January 2026 by an experienced and suitably qualified ecologist. The GTLA was conducted on trees within the Order Limits proposed for complete removal, or pruning, to facilitate the Proposed Development. The trees to be removed/pruned have been taken from Appendix 16.2: Arboriculture Impact Assessment (ES Volume 3) [**EN0110012/APP/LVS/06.03.16.02**]. The results of the GLTA surveys are illustrated on Figure 6.9: Bat Activity Transects and Static Locations (ES Volume 2) [**EN0110012/APP/LVS/06.02.06.09**].

2.6.2 The GLTA was based on best practice published guidance (Ref 2, Ref 3 and Ref 4), and comprised an inspection of the tree from ground level to identify Potential Roosting Features (PRFs) that bats may exploit. These PRFs include:

1) Woodpecker holes;
2) Rot Holes;
3) Hazard beams;
4) Other vertical or horizontal cracks and splits (such as frost-cracks) in stems or branches
5) Partially detached platy bark;
6) Knot holes arising from naturally shed branches, or branches previously pruned back to the branch collar;
7) Man-made holes (e.g. cavities that have developed from flush cuts) or cavities created by branches tearing out from the parent stems;
8) Cankers (caused by localised bark death) in which cavities have developed;
9) Other hollows or cavities, including butt-rots;
10) Double-leaders forming compression forks with included bark and potential cavities;
11) Gaps between overlapping stems or branches;
12) Partially detached ivy with stem diameters in excess of 50 mm; and
13) Bird, bat or dormouse boxes.

2.6.3 Signs of a bat roost, as identified by the BCT, besides the actual presence of bats themselves, were also searched for during the GLTA. These signs include:

1) Bat droppings in, around or below a PRF;
2) Odour emanating from a PRF;
3) Audible squeaking at dusk or in warm weather; and
4) Staining below the PRF.

2.6.4 The potential of trees to support roosting bats was then assessed using the criteria shown in Table 2-6 below.

**Table 2-6 Assessment of Tree Suitability Criteria - adapted from Collings, 2023**

| Suitability | Description of Roosting Habitat |
|---|---|
| None | Either there are no PRFs in the tree or highly unlikely to be any. |
| FAR | Further assessment required to establish if PRFs are present in the tree. |
| PRF-I | A tree with at least one PRF present. |
| PRF-M | A tree that is suitable for multiple bats and may therefore be used by a maternity colony. |

## 2.7 Emergence Surveys

2.7.1 During the GLTA survey completed within the Order Limits, Tree 1961 (located where CRC 1-4 crosses Hillam Road) and Tree 505 (located where CRC 1-4 meets the southern boundary of Solar Development Site 1) were identified as PRF-M (having roosting suitability for multiple bats). These trees have been proposed for removal to facilitate the Proposed Development (as shown in Appendix 16.2: Arboriculture Impact Assessment (ES Volume 3) [EN0110012/APP/LVS/06.03.16.02].

2.7.2 As such, in accordance with best practice guidance (Ref 2, Ref 3 and Ref 4), this triggers a requirement for three nocturnal bat emergence surveys on each tree, to establish the presence or likely absence of roosting bats with the tree.

2.7.3 In line with best practice guidance, three dusk emergence surveys were undertaken on each tree between May and August 2026, spaced a minimum of three weeks apart. The emergence surveys commenced 15 minutes before sunset and concluded 1.5 hours after sunset. Survey metadata for all six surveys is detailed in Table 2-7 below.

2.7.4 Surveyors were positioned on either side of the tree to provide adequate coverage of all Potential Roosting Features during the survey. Surveyors used a combination of visual observation, echolocation devices, thermal cameras and night vision aid (NVA) cameras with infra-red torches and floods to identify any bats emerging from the trees, assisted by two-way radios in order to correlate bat movements between surveyors.

2.7.5 Survey equipment used comprised Anabat walkabout, Pixfra A613 thermal imaging monocular, and Pulsar 2 XP50 Pro. BatExplorer and Analook software were used to analyse sonograms of any calls recorded in the field.

2.7.6 The infra-red camera footage recorded was thoroughly reviewed following surveys to confirm whether any bats emerged from the trees. Start and end screenshots of the NVA footage from each surveyor vantage point on each survey are shown in Table 2-8 below.

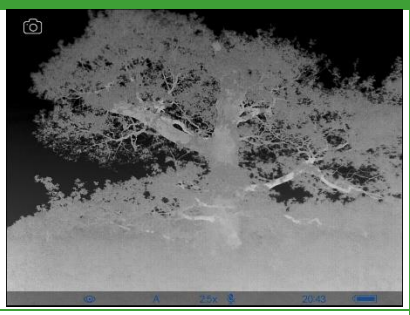
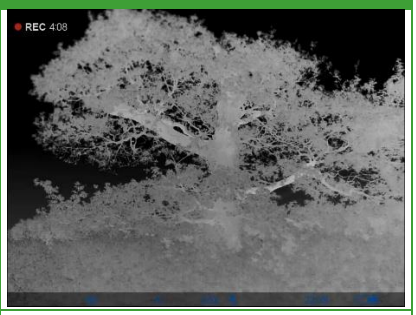
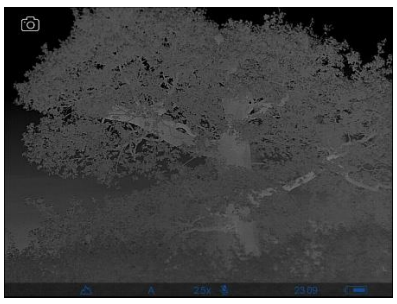
**Table 2-7 Nocturnal Emergence Survey Metadata**

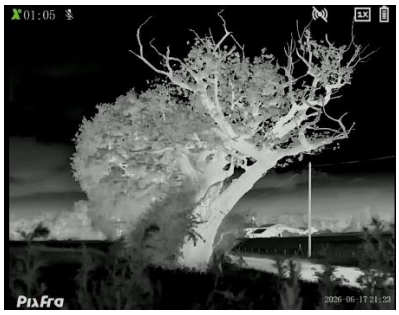
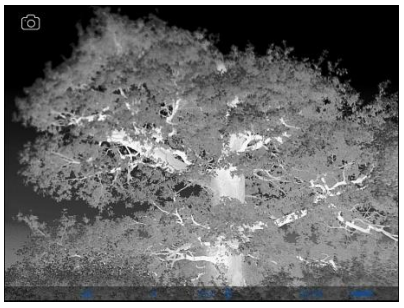
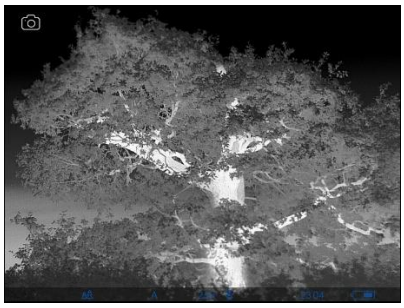
| Survey Reference | Tree Reference | Date | Weather at Start | Weather at End | Survey Timings | Number of Surveyors |
|---|---|---|---|---|---|---|
| V01 | T505 | 20/05/2026 | Precipitation: 0<br>Temp ºC: 15.5<br>Wind Speed Beaufort: 1-2<br>Cloud Cover: 8 | Precipitation: 0<br>Temp ºC: 14.5<br>Wind Speed Beaufort: 2-3<br>Cloud Cover: 5 | Start Time: 20:53<br>Sunset: 21:08<br>End Time: 22:38 | 2 |
| V01 | T1961 | 21/05/2026 | Precipitation: 0<br>Temp ºC: 15.5 | Precipitation: 0<br>Temp ºC: 14 | Start Time: 20:55<br>Sunset: 21:10 | 2 |

| Survey Reference | Tree Reference | Date | Weather at Start | Weather at End | Survey Timings | Number of Surveyors |
|---|---|---|---|---|---|---|
| | | | Wind Speed Beaufort: 1 Cloud Cover: 5 | Wind Speed Beaufort: 1 Cloud Cover: 7 | End Time: 22:40 | |
| V02 | T1961 | 17/06/2026 | Precipitation: 0 Temp ºC: 17 Wind Speed Beaufort: 1 Cloud Cover: 4 | Precipitation: 0 Temp ºC: 13 Wind Speed Beaufort: 1-2 Cloud Cover: 2 | Start Time: 21:23 Sunset: 21:38 End Time: 23:08 | 2 |
| V02 | T505 | 18/06/2026 | Precipitation: 0 Temp ºC: 20 Wind Speed Beaufort: 1-2 Cloud Cover: 2 | Precipitation: 0 Temp ºC: 18 Wind Speed Beaufort: 1 Cloud Cover: 1 | Start Time: 21:23 Sunset: 21:38 End Time: 23:08 | 2 |
| V03 | T1961 | 08/07/2026 | Precipitation: 0 Temp ºC: 22.5 Wind Speed Beaufort: 1-2 Cloud Cover: 0 | Precipitation: 0 Temp ºC: 17 Wind Speed Beaufort: 1-2 Cloud Cover: 0 | Start Time: 21:19 Sunset: 21:34 End Time: 23:04 | 2 |
| V03 | T505 | 09/07/2026 | Precipitation: 0 Temp ºC: 23.5 Wind Speed Beaufort: 1-2 Cloud Cover:2 | Precipitation: 0 Temp ºC: 18.5 Wind Speed Beaufort: 1-2 Cloud Cover: 1 | Start Time: 21:18 Sunset: 21:33 End Time: 23:03 | 2 |

**Table 2-8 NVA Start and End Photographs from Emergence Surveys**

| Tree Reference | Survey Reference | Surveyor Reference | NVA Start Photo | NVA End Photo |
|---|---|---|---|---|
| T505 | V01 | L01 |  |  |

| Tree Reference | Survey Reference | Surveyor Reference | NVA Start Photo | NVA End Photo |
|---|---|---|---|---|
| T505 | V01 | L02 |  |  |
| T1961 | V01 | L01 |  |  |
| T1961 | V01 | L02 |  |  |
| T505 | V02 | L01 |  |  |
| T505 | V02 | L02 |  |  |

| Tree Reference | Survey Reference | Surveyor Reference | NVA Start Photo | NVA End Photo |
|---|---|---|---|---|
| T1961 | V02 | L01 |  |  |
| T1961 | V02 | L02 |  |  |
| T505 | V03 | L01 |  |  |
| T505 | V03 | L02 |  |  |
| T1961 | V03 | L01 |  |  |

| Tree Reference | Survey Reference | Surveyor Reference | NVA Start Photo | NVA End Photo |
|---|---|---|---|---|
| T1961 | V03 | L02 |   |   |

# 3 Results

## 3.1 Desk study

3.1.1 Species of bat returned in the data search included brown long-eared bat, common pipistrelle *Pipistrellus pipistrellus*, Leisler's bat *Nyctalus leisleri*, myotis species *Myotis sp*., Nathusius's pipistrelle *Pipistrellus nathusii*, Natterer's bat *Myotis nattereri*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, pipistrelle species *Pipistellus sp*. and whiskered bat *Myotis mystacinus*. No records of bats were returned within the Order Limits.

3.1.2 A common pipistrelle day roost of one individual in 2018 was recorded within a farm building approximately 95 m south of Solar Development Site 6.

3.1.3 A soprano pipistrelle day roost of two individuals in 2018 was recorded within a farm building approximately 310 m west of Solar Development Site 4.

3.1.4 A brown long eared and common pipistrelle summer roost of multiple individuals in 2022 was recorded within a farm building adjacent to Highways Improvements Area and approximately 330 m north of Solar Development Site 4.

## 3.2 Daytime bat walkover

3.2.1 Initially, Solar Development Sites 1-4 were assessed as providing moderate suitability for commuting and foraging bats, on a precautionarily basis, using desk study records and aerial imagery, as not to miss the start of the bat surveying season. A DBW was then undertaken alongside the UK Habitats surveys completed in April-September 2024 to confirm the initial desk-based assessment.

3.2.2 The DBW found that Solar Development Sites 2-4 had few linear features of use to commuting and foraging bats, which were largely located at the boundaries of the Solar Development Sites. Solar Development Site 4 was however dissected by a number of wet ditches, which may form commuting and foraging features for bats. However, these ditches were surrounded by intensively managed cropland (which also formed the majority of the habitats present within all the Solar Development Sites), anticipated to provide lower invertebrate pray levels for foraging bats. As such, Solar Development Sites 2-4 were re-assessed as providing low suitability for commuting and foraging bats following the DBWs. As the DBWs were completed throughout the summer period, when monthly static deployments had already commenced, monthly static detector surveys were continued (as per the initial desk-based assessment of moderate suitability).

3.2.3 Solar Development Site 1 however was found to have a higher number of smaller fields, most of which were bound by hedgerows and ditches. There was also a number of woodland copses located adjacent Solar Development Site 1, as well as five ponds. The initial desk-based assessment of moderate suitability for commuting and foraging bats was therefore retained for Solar Development Site 1 following the DBW, and the static detector deployment surveys were completed in accordance with best practice guidelines for moderate suitability habitat.

3.2.4 DBWs for Solar Development Sites 6-8 were completed during the UK Habitat surveys in May 2025. It was found that Solar Development Sites 6-8 had few linear features of use to commuting and foraging bats, which were largely located at the Solar Development Site boundaries, with the majority of the Solar Development Sites comprising intensively managed cropland, anticipated to provide low invertebrate pray levels for foraging bats. As such, Solar Development Sites 6-8 were assessed as providing low suitability for commuting and foraging bats.

## 3.3 Nighttime bat walkover

3.3.1 Table 3-1 and Table 3-2 below provides a summary of the number of passes, and their associated percentage, of each bat species recorded during the seasonal NBWs completed for Transects 1 to 7 within Solar Development Sites 1-4 in 2024, and Transects 8 and 9 within Solar Development Site 6-8 in 2025 (table ordered by date of survey).

**Table 3-1 NBW Species Count Per Transect**

| Transect | Solar Development Site | Survey Date | Species Count Per Transect* | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Ppi | Ppy | Pna | My | Noct | Nyct | Unknown | |
| 5 | Solar Development Site 4 | 24/04/2024 | 6 | 4 | - | - | - | - | - | **10** |
| 6 | | 24/04/2024 | - | 2 | - | - | - | - | - | **2** |
| 7 | | 24/04/2024 | 1 | 1 | - | 1 | - | - | - | **3** |
| 1 | Solar Development Site 1 | 29/04/2024 | 59 | - | - | 1 | - | - | - | **60** |
| 2 | | 30/04/2024 | 89 | - | - | 3 | - | - | - | **92** |
| 3 | | 01/05/2024 | 167 | - | - | 2 | - | 1 | - | **170** |
| 4 | Solar Development Sites 2 and 3 | 02/05/2024 | 5 | 2 | - | - | 1 | - | - | **8** |
| 5 | Solar Development Site 4 | 25/06/2024 | 8 | 4 | - | 1 | 5 | - | - | **18** |
| 6 | | 25/06/2024 | 12 | 2 | - | - | 3 | - | 1 | **18** |
| 7 | | 25/06/2024 | 2 | - | - | 1 | 1 | - | 1 | **5** |

| Transect | Solar Development Site | Survey Date | Species Count Per Transect* | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Ppi | Ppy | Pna | My | Noct | Nyct | Unknown | |
| 4 | Solar Development Sites 2 and 3 | 08/07/2024 | 5 | 1 | 1 | - | - | - | 1 | **8** |
| 1 | Solar Development Site 1 | 16/07/2024 | 157 | - | - | 7 | - | - | - | **164** |
| 3 | | 17/07/2024 | 73 | - | - | - | - | 3 | - | **76** |
| 2 | | 18/07/2024 | 39 | - | - | 1 | - | - | - | **40** |
| 5 | Solar Development Site 4 | 10/09/2024 | 6 | 2 | - | 2 | 1 | - | - | **11** |
| 6 | | 10/09/2024 | - | 1 | - | - | - | - | - | **1** |
| 7 | | 10/09/2024 | 1 | 2 | - | - | - | - | - | **3** |
| 4 | Solar Development Sites 2 and 3 | 24/09/2024 | 8 | - | - | - | - | - | - | **8** |
| 1 | Solar Development Site 1 | 10/10/2024 | - | - | - | - | - | - | - | **0** |
| 2 | | 11/10/2024 | 1 | - | - | 1 | - | - | - | **2** |
| 3 | | 14/10/2024 | 31 | - | - | 4 | - | 1 | - | **36** |
| 8 | Solar Development Site 6 | 20/05/2025 | 9 | 3 | - | 1 | 3 | - | - | **16** |

| Transect | Solar Development Site | Survey Date | Species Count Per Transect* | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Ppi | Ppy | Pna | My | Noct | Nyct | Unknown | |
| 9 | Solar Development Site 7 | 21/05/2025 | 2 | 1 | - | - | 1 | - | - | **4** |
| 9 | Solar Development Site 8 | 21/05/2025 | 1 | - | - | - | - | - | - | **1** |
| 8 | Solar Development Site 6 | 16/07/2025 | 13 | 2 | - | - | 3 | - | - | **18** |
| 9 | Solar Development Site 7 | 18/07/2025 | 2 | 2 | - | - | 1 | - | - | **5** |
| 9 | Solar Development Site 8 | 18/07/2025 | 2 | - | - | 1 | - | - | - | **3** |
| 9 | Solar Development Site 7 | 08/09/2025 | 2 | - | - | - | - | - | - | **2** |
| 9 | Solar Development Site 8 | 08/09/2025 | 4 | - | - | - | - | - | - | **4** |
| 8 | Solar Development Site 6 | 09/09/2025 | 5 | 2 | - | 1 | - | - | - | **8** |

* Ppi - Common pipistrelle, Ppy – Soprano pipistrelle, Pna – Nathusius' pipistrelle, My – *Myotis sp.*, Noct – Noctule, Nyct – *Nyctalus sp.,* unknown-unidentifiable bat species due to poor quality/distant recording

## Table 3-2 Percentage of Each Bat Species Recorded During NBWs

| Transect | Solar Development Site | Survey Date | Percentage of Bats Species Recorded | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ppi | Ppy | Pna | My | Noct | Nyct | Unknown |
| 5 | Solar Development Site 4 | 24/04/2024 | 60 | 40 | - | - | - | - | - |
| 6 | | 24/04/2024 | - | 100 | - | - | - | - | - |
| 7 | | 24/04/2024 | 33.3 | 33.3 | - | 33.3 | - | - | - |
| 1 | Solar Development Site 1 | 29/04/2024 | 98.3 | - | - | 1.7 | - | - | - |
| 2 | | 30/04/2024 | 96.7 | - | - | 3.3 | - | - | - |
| 3 | | 01/05/2024 | 98.2 | - | - | 1.2 | - | 0.6 | - |
| 4 | Solar Development Sites 2 and 3 | 02/05/2024 | 75 | 12.5 | - | - | 12.5 | - | - |
| 5 | Solar Development Site 4 | 25/06/2024 | 44.44 | 22.22 | - | 5.56 | 27.78 | - | - |
| 6 | | 25/06/2024 | 66.67 | 11.11 | - | - | 16.67 | - | 20 |
| 7 | | 25/06/2024 | 40 | - | - | 20 | 20 | - | 20 |
| 4 | Solar Development Sites 2 and 3 | 08/07/2024 | 74.4 | 14.3 | 14.3 | - | - | - | - |
| 1 | Solar Development Site 1 | 16/07/2024 | 95.7 | - | - | 4.3 | - | - | - |
| 3 | | 17/07/2024 | 96 | - | - | - | - | 4 | - |
| 2 | | 18/07/2024 | 97.5 | - | - | 2.5 | - | - | - |

| Transect | Solar Development Site | Survey Date | Percentage of Bats Species Recorded | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ppi | Ppy | Pna | My | Noct | Nyct | Unknown |
| 5 | Solar Development Site 4 | 10/09/2024 | 54.55 | 18.18 | - | 18.18 | 9.09 | - | - |
| 6 | | 10/09/2024 | - | 100.00 | - | - | - | - | - |
| 7 | | 10/09/2024 | 33.33 | 66.66 | - | - | - | - | - |
| 4 | Solar Development Sites 2 and 3 | 24/09/2024 | 100.00 | - | - | - | - | - | - |
| 1 | Solar Development Site 1 | 10/10/2024 | - | - | - | - | - | - | - |
| 2 | | 11/10/2024 | 50 | - | - | 50 | - | - | - |
| 3 | | 14/10/2024 | 86 | - | - | 11 | - | 3 | - |
| 8 | Solar Development Site 6 | 20/05/2025 | 56.25 | 18.75 | - | 6.25 | 18.75 | - | - |
| 9 | Solar Development Site 7 | 21/05/2025 | 50 | 25 | - | - | 25 | - | - |
| 9 | Solar Development Site 8 | 21/05/2025 | 100 | - | - | - | - | - | - |
| 8 | Solar Development Site 6 | 16/07/2025 | 72.22 | 11.11 | - | - | 16.67 | - | - |

| Transect | Solar Development Site | Survey Date | Percentage of Bats Species Recorded | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Ppi | Ppy | Pna | My | Noct | Nyct | Unknown |
| 9 | Solar Development Site 7 | 18/07/2025 | 40 | 40 | - | - | 20 | - | - |
| 9 | Solar Development Site 8 | 18/07/2025 | 66.67 | - | - | 33.33 | - | - | - |
| 9 | Solar Development Site 7 | 08/09/2025 | 100 | - | - | - | - | - | - |
| 9 | Solar Development Site 8 | 08/09/2025 | 100 | - | - | - | - | - | - |
| 8 | Solar Development Site 6 | 09/09/2025 | 62.5 | 25 | - | 12.5 | - | - | - |

3.3.2 Below is a summary of the bat activity recorded for each Solar Development Site during the NBWs.

## Solar Development Site 1

3.3.3 During the spring, summer and autumn NBWs on Solar Development Site 1 (Transect 1, 2 and 3), 322, 280, and 38 bat passes were recorded on the spring, summer and autumn surveys respectively. Species recorded comprised common pipistrelle, *Myotis sp*., and *Nyctalus sp.* The majority of passes were of common pipistrelle, comprising 97.8%, 96% and 84% of the passes recorded in the spring, summer and autumn surveys respectively. Bat passes were recorded at field boundary features, with passes recorded on two of the three surveys along the treeline on the western boundary of Field 1.18, along the treelined track leading to Mount Pleasant Farm from the west, and along Ditch 1.7 in the south of Solar Development Site 1 (field reference numbers are detailed within Figure 2.3: Field Numbering Plan (ES Volume 2) [**EN0110012/APP/LVS/06.02.02.03.[01-08]**)). Compared to all other Solar Development Sites, Solar Development Site 1 had the highest level of bat activity recorded during the NBWs, however largely comprised common and widespread species, with no significant bat assemblage identified. Although Solar Development Site 1 had the highest activity levels of the Solar Development Sites within the Order Limits, activity levels were still typical of this type of habitat in this locality.

## Solar Development Site 2 and 3

3.3.4 During the spring, summer and autumn NBWs on Solar Development Sites 2 and 3 (Transect 4), eight bat passes were recorded on each survey. Species recorded comprised common pipistrelle, soprano pipistrelle, *Pipistrellus sp.,* noctule, and an unidentified bat species. The majority of passes were of common pipistrelle, comprising 75%, 74.4% and 100% of the passes recorded in the spring, summer and autumn surveys respectively. Bat passes were recorded at field boundary features, with passes recorded on all surveys in the south-west of Solar Development Site 2 adjacent to the woodland belt outside of the Order Limits, and on two surveys along the treeline on the western boundary of Solar Development Site 3. Overall, Solar Development Site 2 and 3 had low levels of bat activity, and largely comprised common and widespread species, with no significant bat assemblage identified.

## Solar Development Site 4

3.3.5 During the spring, summer and autumn NBWs on Solar Development Site 4 (Transect 5, 6 and 7), 15, 41, and 15 bat passes were recorded on the spring, summer and autumn surveys respectively (Transect 7 now outside the Order Limits). Species recorded comprised common pipistrelle, soprano pipistrelle, *Myotis sp*., noctule, and an unidentified bat species. The majority of passes were of common pipistrelle, comprising 46.6%, 53.6% and 46.6% of the passes recorded in the spring, summer and autumn surveys respectively. Bat passes were recorded at field boundary features, with passes recorded on all surveys to

the south of Field 4.10 adjacent to the woodland belt outside of the Order Limits (field reference numbers are detailed within Figure 2.3: Field Numbering Plan (ES Volume 2) [**EN0110012/APP/LVS/06.02.02.03**). Overall, activity recorded on the NBWs within Solar Development Site 4 was lower than Solar Development Site 1, and largely comprised common and widespread species, with no significant bat assemblage identified. Activity levels were typical of this type of habitat in this locality.

## Solar Development Site 6

3.3.6 During the spring, summer and autumn NBWs on Solar Development Site 6 (Transect 8), 16, 18 and eight bat passes were recorded on the spring, summer and autumn surveys respectively. Species recorded comprised common pipistrelle, soprano pipistrelle, *Myotis sp*., and noctule. The majority of passes were of common pipistrelle, comprising 56.25%, 72.22% and 62.5% of the passes recorded in the spring, summer and autumn surveys respectively. Bat passes were recorded at field boundary features, such as D6.1, D6.3, TL6.1 and TL6.2 (references detailed in Appendix 6.1: Habitats Report (ES Volume 3) [**EN0110012/APP/LVS/06.03.06.01**]). Overall, activity recorded on the NBWs within Solar Development Site 6 was low, and comprised common and widespread species, with no significant bat assemblage identified. Activity levels were typical of this type of habitat in this locality.

## Solar Development Site 7

3.3.7 During the spring, summer and autumn NBWs on Solar Development Site 7 (Transect 9), four, five and two bat passes were recorded on the spring, summer and autumn surveys respectively. Species recorded comprised common pipistrelle, soprano pipistrelle and noctule. The majority of passes were of common pipistrelle, comprising 50%, 40% and 100% of the passes recorded in the spring, summer and autumn surveys respectively. Bat passes were recorded at field boundary features including the railway lines, and associated vegetation, on the northern and western boundaries. Overall, activity recorded on the NBWs within Solar Development Site 7 was low, and comprised common and widespread species, with no significant bat assemblage identified.

## Solar Development Site 8

3.3.8 During the spring, summer and autumn NBWs on Solar Development Site 8 (Transect 9), one, three and four bat passes were recorded on the spring, summer and autumn surveys respectively. Species recorded comprised common pipistrelle and *Myotis sp.*. The majority of passes were of common pipistrelle, comprising 100%, 66.67% and 100% of the passes recorded in the spring, summer and autumn surveys respectively. Bat passes were recorded at field boundary features, and on every survey along D8.1 forming the western boundary of Solar Development Site 8. Overall, Solar Development Site 8 had the lowest level of bat activity recorded across all NBWs completed, and

comprised common and widespread species, with no significant bat assemblage identified.

## 3.4 Automated static detector deployment

3.4.1 Static detector surveys of Solar Development Sites 1-4 were completed whereby 14 static detectors were deployed each month between April and October 2024 at L1-L14 for five consecutive nights (L3, L13 and L14 now outside of Order Limits). In addition, static detector surveys of Solar Development Sites 6-8 were completed whereby eight static detectors were deployed once each season (spring, summer and autumn) in 2025 at L15-L22 for five consecutive nights. A summary table for each static location is shown in Table 3-3 to Table 3-24 below. The static locations are shown on Figure 6.9: Bat Activity Transects and Static Locations (ES Volume 2) **[EN0110012/APP/LVS/06.02.06.09]**. Full data is provided at Annex B.

3.4.2 Please note, as *Myotis sp.* are difficult to determine to species level through bat sound analysis alone, the species group have only been analysed to their genus level to avoid misleading results.

### Solar Development Site 1

**Table 3-3 Location 1- percentage of each bat species recorded throughout static surveys**

| Month | Species % of bats across static surveys* | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | Pip Sp. | BLE | Nyc | Noct | Leis | Myo |
| April | 63.79 | 23.28 | | | | | 12.93 | | |
| May | 53.63 | 27.14 | 0.43 | | | | 1.50 | 0.64 | 16.67 |
| June | 65.77 | 28.50 | 0.58 | | 0.12 | | | 0.35 | 4.67 |
| July | 98.07 | 0.74 | 0.44 | | | | 0.15 | | 0.59 |
| August | 83.30 | 9.94 | | | 0.21 | | 0.63 | 0.42 | 5.5 |
| September | 76.04 | 23.44 | | | | | | | 0.52 |
| October | | | | 94.87 | | 1.28 | | | 3.85 |

*Ppi - Common pipistrelle, Ppy – Soprano pipistrelle, Pna – Nathusius' pipistrelle, Pip Sp – Pipistrellus sp., BLE – Brown long-eared, Noct – Noctule, Nyc. – *Nyctalus sp.*, Leis – Leislers, Myo – *Myotis sp.*

**Table 3-4 Location 2- percentage of each bat species recorded throughout static surveys**

| Month | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| April | 91.67 | 4.17 | | | | | 4.17 |
| May (fail) | | | | | | | |
| June | 62.07 | 16.09 | 3.45 | 3.45 | | 4.60 | 10.35 |
| July | 70.59 | | | | | | 29.41 |

| Month | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| August (fail) | | | | | | | |
| September | 18.78 | 22.10 | | 2.21 | 11.05 | 3.87 | 41.98 |
| October | 15.13 | 59.66 | | 1.68 | 0.42 | 0.42 | 22.69 |

**Table 3-5 Location 3- percentage of each bat species recorded throughout static surveys (now outside of Order Limits)**

| Month | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo 1 |
| April | 93.75 | 4.17 | | | | | 2.08 |
| May | 88.10 | 8.98 | | 0.30 | 0.67 | | 1.94 |
| June | 82.56 | 16.28 | 1.16 | | | | |
| July | 89.47 | 6.77 | 3.01 | | | 0.75 | |
| August | 71.13 | 24.23 | | 1.03 | 0.52 | 1.03 | 2.06 |
| September | 64.44 | 17.63 | | 0.30 | 11.25 | 0.30 | 6.07 |
| October | 64 | 32 | | | | | 17.87 |

**Table 3-6 Location 4 - percentage of each bat species recorded throughout static surveys**

| Month | Species % of bats across static surveys | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | Pip Sp. | BLE | Nyc | Noctule | Leis | Myo |
| April | 100.00 | | | | | | | | |
| May | 51.03 | 44.15 | | | 0.28 | | 0.55 | 0.28 | 3.72 |
| June | 91.11 | 3.89 | | | 0.93 | | | | 4.08 |
| July | | | | 89.36 | | | | | 10.64 |
| August | 56.54 | 16.46 | 0.42 | | 2.95 | | 0.84 | 2.11 | 20.67 |
| September | 63.27 | 20.41 | | | 8.16 | | | | 8.16 |
| October | | | | 60.81 | | 2.25 | | | 36.94 |

**Table 3-7 Location 5 - percentage of each bat species recorded throughout static surveys**

| Month | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| April | 62.62 | 36.17 | | 0.08 | 0.05 | | 1.07 |
| May | 85.61 | 6.59 | 2.73 | 0.30 | 0.30 | 0.98 | 3.48 |
| June | 88.27 | 5.73 | 5.87 | | | 0.14 | |
| July | 78.91 | 18.04 | 0.66 | | | | 2.39 |
| August | 88.84 | 8.75 | | 0.15 | | 0.30 | 1.95 |

| Month | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| September | 46.34 | 22.39 | | | | 0.22 | 31.04 |
| October | 23.72 | 36.73 | 0.07 | 0.26 | 0.85 | 0.22 | 38.14 |

**Table 3-8 Location 6 - percentage of each bat species recorded throughout static surveys**

| Month | Species % of bats across static surveys | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | Pip Sp. | BLE | Nyc | Noct | Leis | Myo |
| April | 88.89 | | | | | | | | 11.11 |
| May | 80.63 | 8.83 | 3.97 | | 0.57 | | 0.16 | 0.42 | 5.43 |
| June | 78.91 | 18.04 | 0.66 | | | | | | 2.39 |
| July | | | | 96.52 | | | | | 3.48 |
| August (fail) | | | | | | | | | |
| September | 19.99 | 12.03 | | | | 5.06 | | | 63.92 |
| October | | | | 50.88 | | 0.24 | | | 48.89 |

## Solar Development Site 1 static detector survey summary

3.4.3 During the static detector deployments in Solar Development Site 1 (Locations 1-6, L3 now outside the Order Limits), species recorded comprised common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, *Pipistrellus sp*., brown long eared, *Nyctalus sp*., noctule, leislers, and *Myotis sp*. All of these species were recorded at all static locations, excluding *Nyctalus sp.* However, not all species were recorded at every static location every month, e.g. brown long eared was only recorded at Location 1 in June and August. Common or soprano pipistrelle were recorded during every deployment at every location and formed the vast majority of passes recorded within Solar Development Site 1. In addition, *Myotis sp*. were recorded in their highest percentages at Location 6, with 63.92% of the passes during the September deployment at Location 6.

3.4.4 A total of 24,699 passes were recorded at Location 1-Location 6, which is an average of 128 passes per night. Location 1 recorded a total of 3,637 passes (101 per night), Location 2 recorded a total of 547 passes (20 per night), Location 3 (now outside the Order Limits) recorded a total of 2,151 passes (74 per night), Location 4 recorded a total of 4626 passes (132 per night), Location 5 recorded a total of 10,243 passes (284.5 per night), and Location 6 recorded a total of 3,495 passes (116.5 per night).

3.4.5 Most passes per night within Solar Development Site 1 were recorded at Location 5. Overall, the level of bat activity recorded during the static detector deployments was similar across all the Solar Development Sites and was typical for this type of habitat in this locality, largely comprising common and widespread species, with no significant bat assemblage identified.

3.4.6 Due to refinement of the Order Limits through the design development process, Location 3 within Solar Development Site 1 is now outside of the Order Limits, however the results from this location are still included within this report for context.

## Solar Development Site 2

**Table 3-9 Location 7 - percentage of each bat species recorded throughout static surveys**

| Month | Species % of bats across static surveys | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | Pip Sp. | BLE | Nyc | Noct | Leis | Myo |
| April | 23.77 | 61.48 | | | | | 12.30 | 2.46 | |
| May | 71.72 | 8.08 | | | | | 14.14 | 3.03 | 3.03 |
| June | 91.58 | 2.99 | 0.27 | | | | 1.36 | | 3.81 |
| July | 81.75 | 4.25 | | | 1 | | 10.25 | 0.75 | 2 |
| August | | | | 97.90 | | 0.09 | | | 2.01 |
| September | 85.68 | 4.17 | | | | 5.99 | | | 4.17 |
| October | 90.51 | 2.77 | | | 1.19 | | | | 5.54 |

## Solar Development Site 2 static detector survey summary

3.4.7 During the static detector deployments on Solar Development Site 2 (Location 7), species recorded comprised common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, *Pipistrellus sp.*, brown long eared, *Nyctalus sp.*, noctule, leislers, and *Myotis sp*. Common pipistrelle and soprano pipistrelle were the only bat species to be recorded during every deployment apart from one, which was the August deployment where the pipistrelle records were identified as *Pipistrellus sp*., so it is likely both species were also present during the August deployment. Common pipistrelle form the majority of passes recorded during the static detector deployments on Solar Development Site 2.

3.4.8 A total of 3,961 passes were recorded at Location 7, which is an average of 113 passes per night. However, during the deployment on 10 August 2024, 1,191 *Pipistrellus sp.* passes were recorded, which is more than double the total passes recorded by all bat species combined on any other night within Solar Development Site 2. As such, this night is taken as an anomaly in the data, and may be the result of multiple passes by a small number of bats, or potentially a recording error. If this night is removed from the average calculation for Location 7, this reduces the passes per night to 81.

3.4.9 Overall, the level of bat activity recorded during the static detector deployments was similar across all the Solar Development Sites and was typical for this type of habitat in this locality, largely comprising common and widespread species, with no significant bat assemblage identified.

## Solar Development Site 3

**Table 3-10 Location 8 – percentage of each bat species recorded throughout static surveys**

| Month | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | **Ppi** | **Ppy** | **Pna** | **BLE** | **Noct** | **Leis** | **Myo** |
| April | 77.66 | 19.86 | 1.06 | 0.35 | 0.35 | | 0.7 |
| May | 80.08 | 11.31 | 0.02 | | 0.26 | 0.08 | 8.27 |
| June | 68.50 | 17.20 | 0.03 | | | 0.13 | 14.15 |
| July | 100 | | | | | | |
| August | 97.54 | 2.46 | | | | | |
| September | 39.19 | 4.50 | | 0.45 | 48.65 | 5.86 | 1.35 |
| October | 91.74 | 8.26 | | | | | |

## Solar Development Site 3 static detector survey summary

3.4.10 During the static detector deployments in Solar Development Site 3 (Location 8), species recorded comprised common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, brown long eared, noctule, leislers, and *Myotis sp*. Common pipistrelle were the only bat species to be recorded during every deployment, forming the highest percentage of passes on all but one deployment.

3.4.11 A total of 7,788 passes were recorded at Location 8, which is an average of 268.5 passes per night. However, during the deployment on 8 May 2024, 3,068 common pipistrelle species passes were recorded, which is approximately four times the total number of passes recorded by all species combined on any other night within Solar Development Site 3. Furthermore, during the 8 May deployment, 543 *Myotis sp.* passes were recorded, with the highest number of *Myotis sp.* passes recorded at this location on any other night comprising three passes. As such, this night is taken as an anomaly in the data and may be the result of multiple passes by an individual/small number of bats, or potentially a recording error. If this night is removed from the average calculation for Location 8, this reduces the passes per night to 92.

3.4.12 Overall, the level of bat activity recorded during the static detector deployments was similar across all the Solar Development Sites and was typical for this type of habitat in this locality, largely comprising common and widespread species, with no significant bat assemblage identified.

## Solar Development Site 4

### Table 3-11 Location 9 - percentage of each bat species recorded throughout static surveys

| Month | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| April | 53.57 | 39.29 | | 3.57 | 3.57 | | |
| May | 85.53 | 7.02 | 0.84 | | 0.98 | | 5.62 |
| June | 24.80 | 67.65 | | 0.27 | | | 7.28 |
| July | 26.92 | 67.47 | | | 0.80 | | 4.8 |
| August (fail) | | | | | | | |
| September | 95.18 | 4.22 | | | 0.60 | | |
| October (fail) | | | | | | | |

### Table 3-12 Location 10 - percentage of each bat species recorded throughout static surveys

| Month | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| April | 53.57 | 39.29 | | 3.57 | 3.57 | | |
| May | 77.64 | 18.34 | | 0.05 | 1.15 | | 2.81 |
| June (fail) | | | | | | | |
| July | 24.17 | 68.96 | | 0.12 | 0.59 | | 6.16 |
| August (fail) | | | | | | | |
| September | 49.72 | 44.13 | | | 6.15 | | |
| October | 76.24 | 20.44 | 0.55 | | | | 2.76 |

### Table 3-13 Location 11 - percentage of each bat species recorded throughout static surveys

| Month | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| April | 56.061 | 39.394 | | | | 3.030 | 1.515 |
| May | 59.08 | 17.82 | | | 9.57 | | 13.53 |
| June | 94.49 | 4.04 | | | | 0.92 | 0.55 |
| July | 88.07 | 8.24 | 0.57 | | | | 3.12 |
| August | 89.22 | 6.99 | 0.29 | 0.04 | 0.53 | 0.78 | 2.16 |
| September | 93.63 | 1.96 | 0.16 | | 0.65 | | 3.59 |
| October | 90.35 | 3.54 | | 0.32 | 4.66 | 0.16 | 0.96 |

**Table 3-14 Location 12 - percentage of each bat species recorded throughout static surveys**

| Month | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| Apil (fail) | | | | | | | |
| May | 55.00 | 29.89 | 2.31 | 0.09 | 1.20 | 0.17 | 11.32 |
| June | 72.62 | 26.23 | | | 0.31 | 0.10 | 0.73 |
| July | 39.18 | 58.47 | | | | | 2.35 |
| August (fail) | | | | | | | |
| September | 50.99 | 21.19 | | 0.66 | 12.58 | 7.95 | 6.62 |
| October | 56.47 | 13.72 | 0.05 | 0.22 | 0.05 | 0.24 | 29.23 |

**Table 3-15 Location 13 - percentage of each bat species recorded throughout static surveys (now outside of Order Limits)**

| Month | Species % of bats across static surveys | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | Pip Sp. | BLE | Nyc | Noct | Leis | Myo |
| April | 70.43 | 29.03 | | | | | | | 0.54 |
| May | 54.73 | 10.98 | 5.91 | | 0.34 | | 17.06 | 0.34 | 10.64 |
| June | 57.63 | 18.64 | | | 3.39 | | | 1.69 | 18.63 |
| July | 46.15 | 38.46 | | | | | | | 15.38 |
| August | 69.84 | 12.27 | | | 0.96 | | 0.35 | | 16.57 |
| September | | | | 69.63 | | 16.30 | | | 14.07 |
| October | 22.75 | 4.72 | | | 0.64 | | 0.54 | | 71.36 |

**Table 3-16 Location 14 - percentage of each bat species recorded throughout static surveys (now outside of Order Limits)**

| Month | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| Apil (fail) | | | | | | | |
| May | 22.83 | 19.81 | 1.70 | | 35.66 | 2.83 | 17.17 |
| June | 25.81 | 33.87 | | | 37.10 | 1.61 | 1.61 |
| July | 56.60 | 41.51 | | | | | 1.89 |
| August | 60.00 | | | | 40.00 | | |
| September | 14.43 | 11.34 | | | 65.98 | 3.09 | 5.15 |
| October (fail) | | | | | | | |

## Solar Development Site 4 static detector survey summary

3.4.13 During the static detector deployments in Solar Development Site 4 (Locations 9-14, L13 and L14 now outside the Order Limits), species recorded comprised common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, *Pipistrelle sp*., brown long eared, *Nyctalus sp*., noctule, leislers, and *Myotis sp.* Of these species only common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, *Nyctalus sp*., noctule, and *Myotis sp.* were recorded at all statics locations. However, not all of these species were recorded at every static location every month, e.g. Nathusius' pipistrelle was only recorded at Location 9 in May.

3.4.14 Common or soprano pipistrelle were recorded during every deployment at every location within Solar Development Site 4, and form the vast majority of passes recorded within the Solar Development Site. In addition, noctule were recorded in their highest percentages at Location 14 (with 115 being the highest number of passes recorded during one night by the species), and *Myotis sp.* were recorded in their highest percentages at Location 13 (with 330 being the highest number of passes recorded during one night by the species group). L13 and L14 are now outside of the Order Limits.

3.4.15 A total of 21,950 passes were recorded at Location 9-Location 14, which is an average of 138 passes per night. Location 9 recorded a total of 1,929 passes (107 per night), Location 10 recorded a total of 3,179 passes (127 per night), Location 11 recorded a total of 5,299 passes (155.8 per night), Location 12 recorded a total of 6,782 passes (308 per night), Location 13 (now outside the Order Limits) recorded a total of 3,903 passes (134.5 per night), and Location 14 (now outside the Order Limits) recorded a total of 858 passes (33 per night).

3.4.16 However, during the deployment on 5 October 2024 at Location 12, 1,613 common pipistrelle passes were recorded, which is approximately two times the total number of passes recorded by all species combined on any other night at any other location within Solar Development Site 4. This night at Location 12 also recorded the highest number of passes for *Myotis sp.* across all nights at all locations in Solar Development Site 4. As such, this night is taken as an anomaly in the data and may be the result of multiple passes by an individual/small number of bats, or potentially a recording error. If this night is removed from the average calculation for Location 12, this reduces the passes per night at this location to 209, reducing the average number of passes over all locations in Solar Development Site 4 (Location 9 to Location 14) to 123.8 per night.

3.4.17 Most passes per night within Solar Development Site 4 were recorded at Location 12. Overall, the level of bat activity recorded during the static detector deployments was similar across all the Solar Development Sites and was typical for this type of habitat in this locality, largely comprising common and widespread species, with no significant bat assemblage identified.

3.4.18 Due to refinement of the Order Limits through the design development process, Locations 13 and Location 14 within Solar Development Site 4 are now outside of the Order Limits, however the results from these locations are still included within this report for context.

## Solar Development Site 6

### Table 3-17 Location 15 - percentage of each bat species recorded throughout static surveys

| Season | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| Spring-May | 100 | | | | | | |
| Summer-July | 55 | 21.88 | | 1.25 | 16.56 | | 5.31 |
| Autumn-September | 64.19 | 27.16 | 1.24 | | 2.47 | | 4.94 |

### Table 3-18 Location 16 - percentage of each bat species recorded throughout static surveys

| Season | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| Spring-May | 80.05 | 17.42 | 0.35 | | 1.78 | 0.12 | 0.29 |
| Summer-July | 62.95 | 17.01 | 0.79 | 0.48 | 17.49 | | 1.27 |
| Autumn-September (fail) | | | | | | | |

### Table 3-19 Location 17 - percentage of each bat species recorded throughout static surveys

| Season | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| Spring-May | 93.29 | 1.34 | 0.34 | | 2.01 | 0.67 | 2.35 |
| Summer-July | 94.03 | 1.07 | 0.31 | 0.38 | 3.21 | | 0.99 |
| Autumn-October | 87.92 | 6.51 | | | 0.49 | 0.13 | 4.95 |

### Table 3-20 Location 18 - percentage of each bat species recorded throughout static surveys

| Season | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| Spring-May | 41.59 | 1.77 | | 0.89 | 52.21 | | 3.54 |
| Summer-July | 69.95 | 5.65 | 0.36 | 1.46 | 20.40 | | 2.19 |
| Autumn-September | 24.19 | 1.89 | 3.21 | 0.19 | 68.24 | 0.57 | 1.70 |

**Table 3-21 Location 19 – percentage of each bat species recorded throughout static surveys**

| Season | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| Spring-May | 68.26 | 6.52 | | 2.61 | 5.22 | 1.30 | 16.09 |
| Summer-July | 88.15 | 1.98 | | 1.234568 | 7.65 | | 0.99 |
| Autumn-September | 81.45 | 13.72 | 0.34 | 0.62 | 2.08 | | 1.79 |

## Solar Development Site 6 static detector survey summary

3.4.19 During the static detector deployments in Solar Development Site 6 (Locations 15 - 19), species recorded comprised common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, brown long eared, noctule, Leisler's, and *Myotis sp*. All of these species were recorded at all static locations, excluding Leisler's which was not recorded at Location 15. Additionally, not all species were recorded at every static location every season, e.g. Nathusius' pipistrelle was only recorded at Location 19 in September. Common pipistrelle were the only bat species to be recorded during every deployment at every location, forming the highest percentage of passes on all but two deployments. Both of these two deployments were at Location 18 where noctule formed 52.21% of the pass in spring and 68.24% of the passes in autumn.

3.4.20 A total of 10,836 passes were recorded at Location 15 - 19, which is an average of 148.9 passes per night. Location 15 recorded a total of 610 passes (38.13 per night), location 16 recorded a total of 2368 passes (215.3 per night), location 17 recorded a total of 3848 passes (240.5 per night), location 18 recorded a total of 1191 passes (74.4 per night), and location 19 recorded a total of 2819 passes (176.2 per night).

3.4.21 Most passes per night were recorded at Location 17. Overall, the level of bat activity recorded during the static detector deployments was similar across all the Solar Development Sites and was typical for this type of habitat in this locality, largely comprising common and widespread species, with no significant bat assemblage identified.

## Solar Development Site 7

**Table 3-22 Location 20 - percentage of each bat species recorded throughout static surveys**

| Season | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| Spring-May | 77.78 | | | 11.11 | | | 11.11 |
| Summer-July | 61.88 | 15.31 | | 0.94 | 13.75 | | 8.13 |
| Autumn-September | 21.44 | 59.40 | | 0.09 | 2.78 | | 10.27 |

### Solar Development Site 7 static detector survey summary

3.4.22 During the static detector deployments in Solar Development Site 7 (Location 20), species recorded comprised common pipistrelle, soprano pipistrelle, brown long eared, noctule, and *Myotis sp*. Common pipistrelle, brown long eared and *Myotis sp*. were the only bat species to be recorded during every deployment, with common pipistrelle forming the highest percentage of passes in two of the three deployments (spring and summer). Soprano pipistrelle formed the highest percentage on the third deployment (autumn).

3.4.23 A total of 2,389 passes were recorded at Location 20, which is an average of 149.3 passes per night. However, during the deployment on 18 September, 1,200 soprano pipistrelle passes were recorded, which is six times the total passes recorded by all bat species combined on any other night within Solar Development Site 7. As such, this night is taken as an anomaly in the data, and may be the result of multiple passes by a small number of bats, or potentially a recording error. If this night is removed from the average calculation for Location 20, this reduces the passes per night to 45.4.

3.4.24 Overall, the level of bat activity recorded during the static detector deployments was similar across all the Solar Development Sites and was typical for this type of habitat in this locality, largely comprising common and widespread species, with no significant bat assemblage identified.

## Solar Development Site 8

**Table 3-23 Location 21 - percentage of each bat species recorded throughout static surveys**

| Season | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| Spring-May | 90.14 | 2.52 | | 0.46 | 3.44 | | 3.44 |

| Season | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| Summer-July | 78.04 | 7.52 | | 0.58 | 6.94 | 4.05 | 2.89 |
| Autumn-September | 91.39 | 6.33 | 0.26 | 0.65 | 0.26 | 0.06 | 0.26 |

**Table 3-24 Location 22 - percentage of each bat species recorded throughout static surveys**

| Season | Species % of bats across static surveys | | | | | | |
|---|---|---|---|---|---|---|---|
| | Ppi | Ppy | Pna | BLE | Noct | Leis | Myo |
| Spring-May | 82.88 | 5.29 | | 1.06 | 2.33 | 0.63 | 7.82 |
| Summer-July | 57.61 | 12.38 | | 0.57 | 1.73 | 2.18 | 3.69 |
| Autumn-October | 63.33 | 33.01 | | | 0.11 | 0.65 | 2.90 |

### Solar Development Site 8 static detector survey summary

3.4.25 During the static detector deployments on Solar Development Site 8 (Locations 21 and 22), species recorded comprised common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, brown long eared, noctule, Leisler's, and *Myotis sp*. All of these species were recorded at both static locations, excluding Nathusius' pipistrelle which was not recorded at Location 22. Additionally, not all species were recorded at every static location every month, e.g. Nathusius' pipistrelle was only recorded at Location 21 in September. Common pipistrelle, soprano pipistrelle, noctule and *Myotis sp* were recorded during every deployment at both locations, with common pipistrelle forming the highest percentage of passes on all deployments.

3.4.26 A total of 6847 passes were recorded at Locations 21 and 22, which is an average of 213.9 passes per night. Location 21 recorded a total of 2142 passes (133.9 per night) and location 22 recorded a total of 4705 passes (294.1 per night).

3.4.27 Most passes per night within Solar Development Site 8 were recorded at Location 22. Overall, the level of bat activity recorded during the static detector deployments was similar across all the Solar Development Sites and was typical for this type of habitat in this locality, largely comprising common and widespread species, with no significant bat assemblage identified.

## 3.5 GLTA

3.5.1 A GLTA survey was completed on 77 trees proposed for removal/pruning within the Order Limits (as per Appendix 16.2: Arboriculture Impact Assessment (ES Volume 3) [**EN0110012/APP/LVS/06.03.16.02**]).

3.5.2 Of the trees surveyed, 66 were determined to have no potential suitability for roosting bats ‘None’ and these trees are listed below. Nine trees were assessed as PRF-I, having suitability for individual/low numbers of bats, and two trees were assessed as PRF-M, having suitability for multiple bats.

3.5.3 Table 32 summarises the PRF-I and PRF-M trees, including a description of the tree and their PRFs, the tree’s location within the Order Limits, and the impact on the tree as a result of the Proposed Development. These trees are also shown on Figure 6.9: Bat Activity Transects and Static Locations (ES Volume 2) [**EN0110012/APP/LVS/06.02.06.09**].

3.5.4 Appendix 16.2: Arboriculture Impact Assessment (ES Volume 3) [**EN0110012/APP/LVS/06.03.16.02**] has been completed as a worst-case scenario and as such in reality, tree loss may be less than currently anticipated. However, when assessing this worst-case scenario, the Proposed Development would result in the removal of two PRF-M trees and six PRF-I trees, and the pruning of three PRF-I trees.

3.5.5 The tree reference numbers included in the tables below are taken from Appendix 16.2: Arboriculture Impact Assessment (ES Volume 3) [**EN0110012/APP/LVS/06.03.16.02**] for consistency.

3.5.6 Trees with no suitability for roosting bats 'None' following GLTA are:

| | | | | | | |
|---|---|---|---|---|---|---|
| 2534 | 1345 | 1639 | 1804 | 1974 | 2190 | 2501 |
| 2593 | 1546 | 1677 | 1826 | 2005 | 2227 | 2502 |
| 149 | 1547 | 1678 | 1880 | 2006 | 2247 | 2503 |
| 353 | 1548 | 1679 | 1901 | 2019 | 2248 | 2504 |
| 781 | 1549 | 1690 | 1913 | 2023 | 2260 | 2529 |
| 837 | 1550 | 1691 | 1925 | 2140 | 2293 | 2531 |
| 1097 | 1554 | 1696 | 1960 | 2146 | 2455 | |
| 1186 | 1555 | 1698 | 1964 | 2177 | 2460 | |
| 1187 | 1559 | 1701 | 1965 | 2178 | 2489 | |
| 1188 | 1638 | 1702 | 1968 | 2189 | 2491 | |

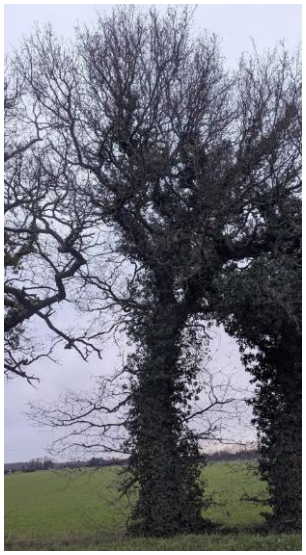
**Table 3-25 Description of PRF-M and PRF-I tress following GLTA**

| Tree Number | Location | Tree and PRF Description | Bat Roosting Potential | Impact to Tree | Photo |
|---|---|---|---|---|---|
| 1961 | Where CRC 1-4 crosses Hillam Road | Mature common oak *Quercus robur* hedgerow tree with significant old and also more recent storm damage, 8 m tall.<br><br>Four RPFs:<br>PRF 1: 5 m high, south orientation, knot hole on main stem<br><br>PRF 2: 5 m high, south orientation, knot hole on main limb, angled upwards but may extend in<br><br>PRF 3:3 m high, south orientation, wounds/rot on main trunk and rot around broken limb may offer suitable PRF.<br><br>PRF 4: 5 m high, west-west orientation, knot hole on main stem | PRF-M | Complete Removal |  |

| Tree Number | Location | Tree and PRF Description | Bat Roosting Potential | Impact to Tree | Photo |
|---|---|---|---|---|---|
| 505 | Where CRC 1-4 meets the southern boundary of Solar Development Site 1 | Mature common oak in hedgerow with existing partial crown removal, 9 m tall.<br><br>Eight PRFs:<br>PRF 1: 3 m high, south orientation, double knot hole on main stem at junction between trunk and small side branch<br><br>PRF 2: 4 m high, south orientation, knot hole on main stem when branch has been removed/lost<br><br>PRF 3: 5 m high, south-east orientation, wound and adjacent cleaved bark on main stem<br><br>PRF 4: 2.5 m high, south-east orientation, wound on main stem<br><br>PRF 5: 6 m high, south-west orientation, large knot hole on trunk, just above main limb. Has rot around edge and cleaved bark<br><br>PRF 6: 7 m high, west orientation, knot hole at terminal end of main limb, and adjacent cleaved bark | PRF-M | Complete removal |  |

| Tree Number | Location | Tree and PRF Description | Bat Roosting Potential | Impact to Tree | Photo |
|---|---|---|---|---|---|
| | | PRF 7: 8 m high, damage/rot/cleaver bark around top of trunk (on all sides) where crown has been removed<br><br>PRF 8: 5 m high, north-east orientation, knot hole on main stem | | | |
| 1558 | CRC 1-4 neighbouring Black Fen Lane | Isolated common alder *Alnus glutinosa* along a former hedge line, 12 m tall.<br><br>Two PRFs:<br>PRF 1: 4 m high, south orientation, healed pruning cut/knot hole<br><br>PRF 2: 5 m high, south orientation, branch tear-out wound/knot hole | PRF-I | Complete Removal |  |

| Tree Number | Location | Tree and PRF Description | Bat Roosting Potential | Impact to Tree | Photo |
|---|---|---|---|---|---|
| 2365 | Highways Improvements Areas on Dam Lane | Recently storm damaged crack willow *Salix fragilis* which had collapsed/fallen from approximately 3-4 m up the main stem creating splits/cavity in the main trunk area. There is also significant cavity damage higher up in the main trunk, which was not possible to inspect from ground level, 11 m tall.<br><br>One PRF:<br>PRF 1:4 m high, recent storm damage and major collapse of trunk resulting in crack/tears in main trunk area around damage | PRF-I | Complete Removal |  |
| 2375a | Highways Improvements Areas on Field Lane | Mature oak (1st of 3) along a ditch bank that was covered in ivy, 18 m tall.<br><br>Two PRFs:<br>PRF 1: 6 m high, south orientation, ivy cover.<br><br>PRF 2: 6 m high, south orientation, small side branch has broken off which has caused a split to form along the branch. Torn/split branch is estimated to be beyond the extent of the proposed pruning limit. | PRF-I | Prune back by 2-3 m on southern aspect |  |

| Tree Number | Location | Tree and PRF Description | Bat Roosting Potential | Impact to Tree | Photo |
|---|---|---|---|---|---|
| 2375b | Highways Improvements Areas on Field Lane | Mature oak (2nd of 3) along ditch bank that was covered in ivy, 18 m tall.<br><br>One PRF:<br>PRF 1: 6 m high, ivy cover. | PRF-I | Prune back by 2-3 m on southern aspect |  |
| 2375c | Highways Improvements Areas on Field Lane | Mature oak (3rd of 3) along a ditch bank that was covered in ivy.<br><br>One PRF:<br>PRF 1: 6 m high, ivy cover. | PRF-I | Prune back by 2-3 m on southern aspect |  |

| Tree Number | Location | Tree and PRF Description | Bat Roosting Potential | Impact to Tree | Photo |
|---|---|---|---|---|---|
| 1963 | Where CRC 1-4 crossed Hillam Road | Small roadside hawthorn *Crataegus monogyna* that is isolated from the rest of a defunct hedge, 6 m tall.<br><br>One PRF:<br>PRF 1: Significant damage/rot is present along the main trunk. | PRF-I | Complete Removal |  |
| 2037 | CRC 4-POC on A162 | Semi-mature ivy-covered common ash *Fraxinus excelsior* within defunct roadside hedge/scrub, 10 m tall.<br><br>One PRF:<br>PRF 1: 6 m high, ivy cover covering entire main stem | PRF-I | Complete Removal |  |

| Tree Number | Location | Tree and PRF Description | Bat Roosting Potential | Impact to Tree | Photo |
|---|---|---|---|---|---|
| 2038 | CRC 4-POC on A162 | Semi-mature ivy-covered common ash within defunct roadside hedge/scrub, 11 m tall.<br><br>Three PRFs:<br>PRF 1: 6 m high, ivy covering entire main stem<br><br>PRF 2: 3 m high, east orientation, knot hole in damaged side branch<br><br>PRF 3: 3 m high, east orientation, lifted bark where side branch has snapped off and caused rot | PRF-I | Complete Removal |  |
| 2017 | CRC 1-4 | Mature hedgerow oak, 13 m tall.<br><br>Four PRFs:<br>PRF 1: 6 m high, south-west orientation, knot hole on side limb, angled half upwards<br><br>PRF 2: 6 m high, south orientation, knot hole/wound on underside of limb<br><br>PRF 3: 7 m high, east orientation, knot hole on south side of east facing limb | PRF-I | Complete Removal |  |

| Tree Number | Location | Tree and PRF Description | Bat Roosting Potential | Impact to Tree | Photo |
|---|---|---|---|---|---|
| | | PRF 4: 6 m high, west orientation, broken/snapped branch, possible suitable gaps in wound/knot that has developed behind | | | |

## 3.6 Emergence Surveys

3.6.1 No bats were recorded emerging from Tree 1961 or Tree 505 during the nocturnal emergence surveys. Footage captured using NVA cameras was analysed in full, with no bats seen emerging from either tree. It can therefore be concluded that bats do not currently roost within Tree 1961 or Tree 505

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3.6.2 During the emergence surveys on Tree 505, very low levels of bat commuting and foraging activity by common and widespread species was recorded. During Visit 1, the combined recordings from both surveyors totalled nine passes of common pipistrelle, three passes of myotis sp. and one noctule pass. Many of these calls were heard but not seen, however one bat was seen to commute along the adjacent hedge. Visit 2 and Visit 3 also had very low levels of activity recorded by the same species, with the addition of soprano pipistrelle.

3.6.3 During the emergence surveys on Tree 1961, there was similarly low levels of bat commuting and foraging activity recorded by common and widespread species. During Visit 1, passes of noctule and common pipistrelle were recorded, with common pipistrelle and soprano pipistrelle recorded at Visit 2, and soprano pipistrelle and noctule recorded at Visit 3. Foraging and commuting was noted mostly along the adjacent hedgerow and road.

# 4 Conclusion

4.1.1 Overall, the level of bat activity recorded during the static detector deployments was similar across all the Solar Development Sites and was typical for the type of habitat present in its locality, largely comprising common and widespread species, with no significant bat assemblage identified. The main species recorded included common pipistrelle, soprano pipistrelle, *Myotis sp.,* and noctule, with less frequent Nathusius' pipistrelle, brown long-eared, and leislers.

4.1.2 During the NBWs within the Solar Development Sites, Solar Development Site 1 had the highest level of bat activity recorded however, activity levels were still typical for the habitat type present in this locality, with no significant bat assemblage identified. Species recorded comprised common pipistrelle, *Myotis sp*., and *Nyctalus sp*. The majority of passes were of common pipistrelle, comprising 97.8%, 96% and 84% of the passes recorded in the spring, summer and autumn surveys respectively. In comparison, Solar Development Site 8 had the lowest level of bat activity recorded during the NBWs, with only eight bat passes recorded on all NBWs combined. Species recorded comprised common pipistrelle and *Myotis sp.*.

4.1.3 For Solar Development Site 1, during the NBWs, bat passes were recorded on two of the three surveys along the treeline on the western boundary of Field 1.18, along the treelined track leading to Mount Pleasant Farm from the west, and along Ditch 1.7 in the south. In addition, during the static surveys within Solar Development Site 1, Location 5 had the highest number of passes per night.

4.1.4 For Solar Development Site 2, during the NBWs, bat passes were recorded on all surveys in the south-west adjacent to the woodland belt outside of the Order Limits, and for Solar Development Site 3, bat passes were recorded on two out of three surveys along the treeline on the western boundary.

4.1.5 For Solar Development Site 4, during the NBWs, bat passes were recorded on all surveys to the south of Field 4.10 adjacent to the woodland belt outside of the Order Limits, and during the static surveys Location 12 had the highest number of passes per night.

4.1.6 For Solar Development Site 6, during the NBWs, bat passes were recorded on two surveys each at field boundary features, such as D6.1, D6.3, TL6.1 and TL6.2. The static surveys within Solar Development Site 6 recorded the highest average number of passes per night at Location 17.

4.1.7 For Solar Development Site 7, during the NBWs, bat passes were recorded on two surveys along the railway lines, and associated vegetation, on the northern and western boundaries.

4.1.8 Finally, for Solar Development Site 8, during the NBWs, bat passes were recorded on every survey along D8.1 forming the western boundary. The static surveys within Solar Development Site 8 recorded the highest number of passes per night at Location 22.

4.1.9 No buildings are located within the Order Limits that could support roosting bats, and the Design Principles have aimed to retain and buffer all trees within the Order Limits where practicable. However, as detailed in Appendix 16.2: Arboriculture Impact Assessment (ES Volume 3) [**EN0110012/APP/LVS/06.03.16.02**]**,** 77 trees are proposed for removal/pruning within the Order Limits as a worst-case assessment.

4.1.10 A GLTA completed on these 77 trees found 66 were determined to have no potential suitability for roosting bats 'None', nine trees were assessed as PRF-I, having suitability for individual/low numbers of bats, and two trees were assessed as PRF-M, having suitability for multiple bats. These trees are shown on Figure 6.9: Bat Activity Transects and Static Locations (ES Volume 2) [**EN0110012/APP/LVS/06.02.06.09**]**.**

4.1.11 The required works to the PRF-I trees can be completed under the supervision of an ecologist (further discussed within Chapter 6: Biodiversity (ES Volume 1) **[EN0110012/APS/LVS/06.01.06**]). However, nocturnal emergence surveys were completed on the two trees assessed as PRF-M (Tree 505 and Tree 1961) to confirm presence/likely absence of roosting bats.

4.1.12 The nocturnal emergence surveys concluded that bats do not currently roost within Tree 1961 or Tree 505. In addition, very low levels of bat commuting and foraging activity were recorded during the emergence surveys, by common and widespread species only.

# References

Ref 1 CIEEM (2022) Code of Professional Conduct, CIEEM, Winchester

Ref 2 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.

Ref 3 Mitchell-Jones, A.J, & McLeish, A.P. (eds). (2004) 3rd Edition Bat Workers' Manual., JNCC, Peterborough, ISBN 1 86107 558 8

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

Ref 5 Time and Date, “Weather in York – October 2024,” 2024. [Online]. Available at: [redacted]

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