Intermodal Logistics Park North Ltd

INTERMODAL LOGISTICS PARK NORTH (ILPN)

Intermodal Logistics Park North (ILPN) Strategic Rail Freight Interchange (SRFI)

Project reference TR510001

Preliminary Environmental Information Report (PEIR)

Appendix 11.3: Bat Report

October 2025

Planning Act 2008

The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

This document forms a part of a Preliminary Environmental Information Report (PEIR) for the Intermodal Logistics Park North (ILPN) project.

A PEIR presents environmental information to assist consultees to form an informed view of the likely significant environmental effects of a proposed development and provide feedback.

This PEIR has been prepared by the project promoter, Intermodal Logistics Park North Ltd. The Proposed Development is described in Chapter 3 of the PEIR and is the subject of a public consultation.

Details of how to respond to the public consultation are provided at the end of Chapter 1 of the PEIR and on the project website:

https://www.tritaxbigbox.co.uk/our-spaces/intermodal-logistics-park-north/

This feedback will be taken into account by Intermodal Logistics Park North Ltd in the preparation of its application for a Development Consent Order for the project.

FPCR | environment & design




Bat Survey Report

Client

Intermodal Logistics Park North Ltd

Project

Intermodal Logistics Park North (ILPN)

Date

October 2025

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Rev	Issue Status	Prepared/Date	Approved/Date
A	Final	TC/ CDM / 23.10.25	PRA / 23.10.25

1.0 INTRODUCTION

1.1 This report has been produced by FPCR Environment and Design Ltd. (FPCR) on behalf of Intermodal Logistics Park North Ltd. to provide the results of bat surveys undertaken to support a Development Consent Order (DCO) application for the development of a Nationally Significant Infrastructure Project (NSIP), Intermodal Logistics Park North, located to the east of Newton-Le-Willows (Central OS Grid Ref: SJ 6129 9507). The entire area of the Proposed Development is herein referred to as 'the DCO Site'.

1.2 The Proposed Development covers a number of areas in the wider DCO Site including; the Main Site (the strategic rail freight terminal and logistics park); the Western Rail Chord (a railway spur to the west of the Main Site), the Northern Mitigation Area (land north of the existing railway line to be used for compensatory habitat creation); the 'Lane Head Relief Road' (located to the north-east of the Main Site); 'Remote Highway Works' including a number of options for highway improvement in the wider locality; and 'Soils Reuse Area' which includes agricultural land to the east of Winwick Lane.

The area assessed by the surveys contained within this report includes the Main Site, and the Western Rail Chord. Herein referred to as 'the Survey Area'.

1.3 Surveys completed in 2025 and presented within this document include:

- Preliminary roost assessments (buildings)
- Ground based tree assessments
- Habitat assessments
- Building emergence surveys
- Tree emergence surveys
- Aerial tree assessment surveys
- Monthly night-time bat walkovers
- Monthly static bat detector surveys using SM4BAT FS detectors

1.4 Please note that this document should be read in conjunction with Chapter 11 of the Preliminary Environmental Information Report (PEIR).

Site Context

1.5 The DCO Main Site is a roughly triangular area of approximately 198ha, bound by the Liverpool to Manchester railway line and Highfield Moss SSSI to the north, Winwick Lane (A579) to the east and south-east, the M6 motorway to the south-west, and an area of woodland and scrub and the M6 Motorway to the west. The Main Site also includes a small area of roughly triangular land north of the railway line bound by Parkside Road to the west and railway lines on all other aspects.

1.6 Of note is Highfield Moss SSSI, directly north of the Main Site. This SSSI is designated for raised mire habitats but also includes areas of scrub, woodland and lowland acid grassland, bounded by a ditch to the south which holds water except in periods of extreme dry weather.

1.7 The Main Site is predominantly occupied by land in agricultural cultivation. A small area of woodland is located in the north-east of the area, with two small, isolated stands of woodland located in the central area of the Main Site. An area of modified grassland is located in the north-central area associated with the runway and facility areas of Kenyon Hall Farm Airstrip. There are a number of ponds located across the Main Site, including recently constructed balancing ponds associated with Parkside Link Road East. There are a number of buildings within the Main Site including Highfield Farm and associated barn in the north of the Main Site, Parkside Farm and associated buildings in the central area adjacent to Parkside Road, and a scrap/storage yard in the north-east of the Main Site.

1.8 The Western Rail Chord is a thin curved area of land that connects to the Liverpool to Manchester railway line in the north (just west of the M6). The proposed Chord runs in an arc from the north-east to south-east through an area of mixed woodland, scrub and grassland on land which was formerly occupied by Parkside Colliery. At the south-eastern point of the arc the boundary of the area runs directly northwards (for a proposed access road).

1.9 The Western Rail Chord extends through areas of woodland, scrub and grassland associated with the former Parkside Colliery.

Development Proposals

1.10 The Main Site is proposed to be developed as a Strategic Rail Freight Terminal and logistics park with large commercial/industrial buildings and associated access and landscaping. It is assumed that all habitats within the Main Site will be cleared during the Proposed Development with the exception of boundary hedgerows and trees (where present).

1.11 The Western Rail Chord is proposed to be developed as a railway line spur which, in the future will serve a separate proposed development (Parkside West). It is assumed that the majority of habitats within the footprint of the railway chord will be lost to the development with the exception of a small area of woodland and grassland in the south-western area.

Report Aims and Objectives

1.12 The report has been prepared to achieve the following objectives:

- Summarise the survey and assessment methodologies employed in order to assess the importance of the Site for bats
- Provide the records of bats within a 2km radius of the Main Site and Western Rail Chord
- Provide the results of bat surveys undertaken
- Provide recommendations for avoidance, mitigation, compensation and/or enhancement to mitigate impacts of the proposals on bats

2.0 LEGISLATION

2.1 All bats and their roosts are afforded legal protection under the Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife & Countryside Act 1981 (as amended). The purpose of the legislation is to maintain and restore protected species to a situation where their populations are favourable.

2.2 Under Regulation 43 of the Conservation of Habitats and Species Regulations 2017 (as amended) it is an offence to deliberately capture, injure or kill; deliberately disturb (including intentionally or recklessly) all UK bat species. This includes disturbance which impairs their ability to: breed and rear young; migrate; and hibernate; or affects their local distribution and abundance.

2.3 Under the Wildlife and Countryside Act 1981 (as amended) it is illegal to:

- Recklessly or intentionally kill, injure or take any wild animals included in Schedule 5;
- Recklessly or intentionally damage or destroy, or obstruct access to any structure or place which any wild animal included in Schedule 5 uses for shelter or protection; and/or
- Recklessly or intentionally disturb any such animal while it is occupying a structure or place which it uses for shelter or protection.

2.4 Foraging habitat and commuting routes used by bats are not protected as such but impacts that could prevent bats from using a resource or commuting to or from a valued roosting site may be considered as an indirect impact on a roost or a significant disturbance effect and would therefore also need to be avoided or prevented.

2.5 Several bat species are listed as species of principal importance for the purpose of conserving biodiversity under the Natural Environment and Rural Communities (NERC) Act 2006. These species are Barbastelle bat, Bechstein's bat, brown long-eared bat, greater horseshoe bat, lesser horseshoe bat, noctule and soprano pipistrelle.

2.6 Bats are recognised in the National Planning Policy Framework (NPPF)[1] which advises that when determining planning applications, Local Planning Authorities should aim to conserve and enhance biodiversity by applying a set of principles including:

- *"If significant harm resulting from a development cannot be avoided……., adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- *development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity."*

2.7 The Cheshire Biodiversity Action Plan lists the following bats species as being of local importance: brown long-eared bat *Plecotus auritus*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, common pipistrelle *Pipistrellus pipistrellus*,

[1]Department for Communities and Local Government. (2019). National Planning Policy Framework. Available from: https://www.gov.uk/government/publications/national-planning-policy-framework--2

daubenton's bat *Myotis daubentonii*, Leisler's bat *Nyctalus leisleri*, natterer's bat *Myotis nattereri*, and whiskered bat *Myotis mystacinus*.

3.0 METHODOLOGY

Desktop Survey

3.1 To support the field surveys and to compile existing baseline data for the site, ecological information was sought from third parties, including records of protected or notable species and sites designated for nature conservation interest. Organisations contacted included:

- Greater Manchester Local Records Centre (GMLRC)
- Merseyside Records Centre
- Record, the Biodiversity Information System for Cheshire, Halton, Warrington and Wirral
- Granted EPS licences for bats from https://magic.defra.gov.uk/magicmap.aspx
- Statutory designated sites that include bat species as part of their designation from https://magic.defra.gov.uk/magicmap.aspx
- Publicly available aerial imagery showing connectivity across the site and to the wider landscape.

3.2 Bat records were searched for at a resolution of 2km around the Site and were limited to records from within the last 20 years.

3.3 The data was requested from GMLRC on 4th March 2025 and was received on 18th March 2025.

Roosting Bats - Buildings

Preliminary Roost Assessment (PRA)

3.4 External and internal building assessments were carried out on 16th and 29th April 2025 by licenced bat ecologists from FPCR Environment and Design Ltd (2024-12130-CL18-BAT & 2022-10185-CLS18-BAT). The assessment was completed considering the guidance provided in chapters 4 and 5 of the Bat Surveys for Professional Ecologists, Good Practice Guidelines, 2023[2].

External Building Assessment

3.5 The exterior of the buildings were visually assessed for potential access points and evidence of bat activity. Features such as small gaps under barge/soffit/fascia boards, raised or missing ridge tiles and gaps at gable ends, which have potential to be used as access points, were sought. In addition, structural features were noted that could provide suitable hibernation potential or not. Evidence that bats actively used potential access points includes staining within gaps and bat droppings or urine staining under

[2] Collins, J. (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition).* The Bat Conservation Trust, London.

gaps, a note being made wherever these were present. Where they could be safely accessed crevices were visually inspected from a distance for the presence of bats.

Internal Assessment

3.6 The interior of the buildings, including all accessible roof voids, were also visually assessed with the aid of an endoscope, mirrors and torches to identify potential or actual bat access points and roosting places and for evidence of current or past bat roosts. Definitive evidence of a bat roost(s) was determined by the presence of:

- Dead or live bat(s); and/or
- Droppings.

3.7 Other less definitive signs were also sought as indicators of potential roosting bats, these included:

- Urine staining;
- Fur-oil staining;
- Feeding remains such as moth wing fragments;
- Audible calls;
- Bat-fly (*Nycteribiid* and *Streblidae*) pupal cases; or
- Odour.

3.8 The absence of any of the above evidence was not considered to be definitive evidence that no roosts were present as bats may leave no visible sign of their presence, particularly where they occupy inaccessible or hidden spaces within a building.

3.9 Subsequently, the buildings (or where relevant, sections of) were categorised according to their suitability to support roosting bats and whether they provide classic or non-classic hibernation potential or not. These were classified according to the features present within the buildings (see Table 1).

Potential Bat Roosting Suitability

3.10 Following the internal and external assessments each building was assigned a category according to its roosting suitability which is based on Table 4.1 of the BCT guidelines (2023), this potential suitability is used to indicate the likely requirements for any further surveys to determine the presence or absence of roosting bats.

Table 1: Building bat roost habitat classifications (based on Table 4.1 BCT, 2023)

Roost Suitability	Description of Roosting Habitats	Further Survey Requirements to Provide Confidence in the Likely Absence of Roosting Bats Within a Structure
None	No habitat features on site that are likely to be used by bats at any time of the year.	No further surveys or consideration of roosting bats is required.

Roost Suitability	Description of Roosting Habitats	Further Survey Requirements to Provide Confidence in the Likely Absence of Roosting Bats Within a Structure
Negligible	No obvious habitat features are present that are likely to be used by roosting bats, but features may be present where a bat could theoretically roost, but it is considered very unlikely.	No further surveys are required, but some vigilance may be required if the feature is impacted.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or classic hibernation roost).	Up to one single dusk emergence survey undertaken between May and August. (requirement is based on professional judgment). Precautionary method statement if works are to be undertaken during the winter period (where non-classic hibernation potential exits).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Two separate dusk emergence surveys undertaken between May and September and at least one between May and August and spread at least 3 weeks apart. Precautionary method statement if works are to be undertaken during the winter period (where non classic hibernation potential exits).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support High conservation status roosts such as those used for maternity or hibernation (classic site).	Three separate dusk emergence surveys undertaken between May and September and at least two between May and August and spread at least 3 weeks apart. Where classic hibernation potential is present hibernation surveys should be undertaken during the winter period.
A classic hibernation site is considered to provide stable climatic conditions including temperature humidity, and light level such as, but not exclusively limited to underground structures which are subject to low levels of disturbance or species-specific habitual requirements such as where brown long eared bats often use the same roosts for maternity and hibernation purposes. A non-classic hibernation site is a location which does conform to the criteria above but could be used by individual hibernating bats. It usually not possible to identify non-classic hibernation sites through surveys work.		

Nocturnal Bat Emergence Surveys - Buildings

3.11 Due to the presence of suitable potential roosting features noted during the PRA surveys, a suite of nocturnal bat emergence surveys were carried out in accordance with best practice guidelines.

3.12 The buildings surveyed on each occasion are listed in Table 2 with surveyor locations shown on Figure 2.

Table 2 – Summary of Nocturnal Survey (Buildings) Dates and Conditions

Survey date	Buildings covered	No. Surveyors	Start / Finish	Sunset	Conditions
12/06/25	B17	2	21:24 to 23:39	21:39	18°C, 60% cloud cover, 2 BF, no rain.
01/07/25	B3, B4, B5, B6, B8, B9	8	21:26 to 23:11	21:41	16°C, 100% cloud cover, 2 BF, no rain.
03/07/25	B1, B2	7	21:16 to 23:41	21:41	17°C, 80% cloud cover, 1 BF, no rain.
22/07/25	B3, B4, B5, B6	8	21:06 to 22:51	21:21	16°C, 90% cloud cover, 3 BF, no rain.
24/07/25	B8	4	21:04 to 22:49	21:19	19°C, 50% cloud cover, 1 BF, no rain.
28/07/25	B1, B2	8	20:56 to 23:12	21:12	16°C, 55% cloud cover, 1 BF, no rain.
19/08/25	B8	4	20:14 to 21:59	20:29	18°C, 100% cloud cover, 2 BF, no rain.
28/08/25	B2	4	19:53 to 22:08	20:08	16°C, 100% cloud cover, 2 BF, no rain.

3.13 The emergence surveys commenced 15 minutes prior to sunset and ended between 90-120 minutes following sunset. The number and species of bats observed emerging or entering the buildings was recorded.

3.14 Any notable activity patterns including commuting and/or foraging within the vicinity of the building was recorded.

3.15 Echo Meter Touch® (Wildlife Acoustics, Inc.) bat detectors were utilised in conjunction with Echo Meter Touch® app. Where necessary to confirm species identification Bat calls were analysed using the Kaleidoscope Viewer© (Wildlife Acoustics, Inc.) software package.

3.16 All surveyors were equipped with night vision aids (NVA's) to enhance visibility of the survey area throughout the survey. NVA's were set to record for the duration of the survey, where roosting bats were observed or uncertain behaviours observed, footage was extracted, analysed and saved. A still shot of the darkest point of the survey was also extracted and saved and are included in Appendix A. NVA's used were Nightfox Whisker night vision binoculars with a Nightfox XB10 IR torch for each unit.

3.17 All of the nocturnal surveys were conducted in appropriate conditions, i.e. ambient temperature exceeding 10˚C and little wind and no rain.

Roosting Bats - Trees

Ground Based Tree Assessment

3.18 A Ground Based Tree Assessment (GBTA) was undertaken on the 23rd and 24th April 2025 by suitably experienced ecologists from FPCR. Potential Roosting Features (PRFs) (based on p.16, British Standard 8596:2015 Surveying for bats in trees and woodland, October 2015[3]) which were sought included:

- Natural holes (e.g. knot holes) arising from naturally shed branches or branches previously pruned back to a branch collar;
- Man-made holes (e.g. cavities that have developed from flush cuts or cavities created by branches tearing out from parent stems;
- Woodpecker holes;
- Cracks/splits in stems or branches (horizontal and vertical);
- Partially detached, loose or platy bark;
- Cankers (caused by localised bark death) in which cavities have developed;
- Other hollows or cavities, including butt rots;
- Compression of forks with occluded bark, forming potential cavities;
- Crossing stems or branches with suitable roosting space between;
- Ivy stems with diameters in excess of 50mm with suitable roosting space behind (or where roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk); and
- Bat or bird boxes.

3.19 Certain factors such as orientation of the feature, its height from the ground, the direct surroundings, and its location in respect to other features may enhance or reduce the potential value.

3.20 Using professional judgement, the ground-based PRA assessment classified any trees identified based upon the presence of suitable features as set out in Bat Surveys for Professional Ecologists: Good Practice Guidelines (BCT, 20234) in which the general bat roost potential groups are defined (refer Table 4.2 of the guidelines) and provided in Table 3 below.

[3] British Standards Institution, (2015) *BS 8596:2015 Surveying for bats in trees and woodland*. Milton Keynes: BSI

[4] Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn). The Bat Conservation Trust

Table 3: Suitability of trees for bats

Suitability	Description
NONE	Either no potential roost features or highly unlikely to be any.
FAR	Further Assessment Required to establish if Potential Roost Features are present.
PRF	A tree with at least one Potential Roost Feature.

Aerial Inspection Surveys

3.21 Trees classified as FAR or PRF-M during the GBTA were then subject to further assessment via aerial inspection (where climbing was safe / possible) via use of a torch and an endoscope from ground level, via ladder or pole, or by roped access as necessary.

3.22 Trees T24, T25 and T26 were omitted from further assessment as they are to be retained with the current Proposed Development.

3.23 The survey involved accessing each tree using arborists tree climbing techniques (certified to Climb Trees (J/101/2449) and Perform Aerial Rescue (A/101/2450) – Level 2 (NPTC). The climbing methodology used follows that detailed within the Arboriculture and Forestry Advisory Group (AFAG) Tree Climbing Operations Leaflet (AFAG401) and included inspecting each PRF for suitability and evidence of current or past occupation by bats using endoscopes, mirrors, torches and cameras as necessary. Each PRF was then categorised as outlined in Table 4.

Table 4: Bat Classification and Survey Requirements for Bats in Trees

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey work / Actions
Negligible/ No potential	Negligible/no habitat features likely to be used by roosting bats	None.
PRF-I	A tree with one or more Potential Roosting Features that are suitable for only individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats. Examples include (but are not limited to); loose/lifted bark, shallow splits exposed to elements or upward facing holes.	No further survey is required but appropriate compensation must be provided in advance of impacts and a precautionary working method statement must be applied. [A]

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey work / Actions
PRF-M	A tree with PRF's which could support multiple bats and may therefore be used by a maternity colony. Examples include (but are not limited to); woodpecker holes, larger cavities, hollow trunks, hazard beams, etc.	Three aerial assessments [B] of PRF's by appropriately licensed/ accredited tree climbers to determine presence or likely absence of roosting bats. Surveys were undertaken between May and September (with at least two surveys between May and August and spread at least three weeks apart). [C] If roost sites are confirmed and the roost is affected by proposals, a licence from Natural England will likely be required. After completion of survey work (and the presence of a bat roost is discounted), a precautionary pre-felling survey or working method statement may still be appropriate.

[A] In circumstances where there are lots of trees grouped together with PRF-I then further surveys may still be appropriate.

[B] Nocturnal surveys using NVA's may be appropriate if a tree or PRF cannot be sufficiently accessed or fully assessed.

[C] If the initial aerial inspection was undertaken during the optimum survey period, this can count as one of the three surveys

3.24 For the purposes of this assessment and ease of interpretation, PRF-I is classified as being of 'limited' potential and PRF-M is of 'significant' potential. This is in line with the categories shown above.

3.25 Two further inspections were subsequently carried out for those features classified as PRF-M during the initial visits, such that three surveys were carried out in total for each PRF-M feature during the correct period in accordance with Table 4.

3.26 Aerial assessments were carried out across the Site on 19th and 20th May, 14th July and 4th August 2025. They were led by licensed or accredited bat ecologists (Natural England Class Licence Registration Numbers: 2024-12130-CL18-BAT, 2022-10185-CLS18-BAT & 2016-20809-CLS-CLS.).

Nocturnal Bat Emergence Surveys - Trees

3.27 Of the 31 trees identified to have potential bat roost features during the GBTA, 7 could not be closely inspected by means of aerial assessment and an additional tree (T8) was considered unsafe for further climbing after the initial aerial survey. These trees were therefore each subject to three nocturnal emergence surveys as a precautionary approach. Details of these surveys are provided in Table 5.

3.28 The emergence surveys were carried out following the same methodology as the for the building nocturnal emergence surveys, with regards to survey timings, weather conditions

and the use of bat detectors and NVAs. Surveyors were located such that all PRFs could be observed.

Table 5 – Summary of Nocturnal Survey (Trees) Dates and Conditions

Survey date	Tree(s) covered	No. Surveyors	Start / Finish	Sunset	Conditions
12/06/25	T28, T29	2	21:24/23:39	21:39	18°C, 40% cloud cover, 1 BF, no rain.
19/06/25	T27, T13, T19	5	21:27/23:42	21:42	22°C, 10% cloud cover, 0 BF, no rain.
14/07/25	T28, T29, T27, T13, T5	6	21:17/23:32	21:32	15°C, 0% cloud cover, 1 BF, no rain.
21/07/25	T14, T19, T8	4	21:08/23:23	21:23	16°C, 20% cloud cover, 0 BF, no rain.
07/08/25	T14, T23, T13, T27	6	20:39/22:54	20:54	17°C, 100% cloud cover, 1 BF, no rain.
11/08/25	T19, T8	3	20:31/22:46	20:46	23°C, 90% cloud cover, 0 BF, no rain.
08/09/25	T14	2	19:21/21:12	19:42	15°C, 30% cloud cover, 1 BF, no rain.
22/09/25	T28, T29	2	18:53/21:08	19:08	10°C, 20% cloud cover, 1 BF, no rain.

Bat Activity Surveys

Habitat Assessment

3.29 This assessment was undertaken to identify the suitability of the Site to foraging and commuting bats or areas which may be important for exhibiting various social behaviours. This was informed by the results of the initial walkover survey, a detailed habitat assessment in April 2025, and from information gathered in the desk study to ensure that potential effects are considered in the context of the on-Site habitats within the wider area.

3.30 The Site was also categorised for its habitat suitability for bats, which would inform the necessary survey effort. The habitat suitability was assessed initially using guidance from 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' (Bat Conservation Trust, 4th Edition, 2023)[5]. Table 4.1 of the current guidelines provides an outline for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape. This should be applied using professional judgement. This groups a site into five categories based on habitat suitability for foraging and commuting bats which has been further summarised in Table 6, below:

[5] Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition). The Bat Conservation Trust, London.

Table 6: Criteria for Assessing Habitat Suitability for Commuting and Foraging Bats - Based on Table 4.1 (Collins, 2023)

Suitability	Potential Flight Paths and Foraging habitat	Proposed Further Survey Requirements
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).	No further surveys required
Negligible	No obvious habitat features on site likely to be used as flightpaths 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 flightpaths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. 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.	Automated static detector monitoring and night-time bat walkover (NBW) surveys (flight path and transect) on a seasonal* basis.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for flightpaths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.	Automated static detector monitoring on a monthly basis and NBW surveys (flight path and transect) on a seasonal* basis.
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. 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. Site is close to and connected to known roosts.	
*Seasonal surveys should be increased to monthly where Annex II species are expected / detected or if significant commuting routes are identified.		

3.31 Automated static bat detector surveys and night-time bat walkover surveys were undertaken on a monthly basis across the 2025 survey season to reflect the scale and nature of the proposed development. These surveys were undertaken to identify the

value of the Site to foraging and commuting bats or areas which may be important for exhibiting various social behaviours so that the effects said proposals can be assessed.

3.32 In order to inform an impact assessment, where possible the bat activity surveys aim to identify:

- The presence or absence of bats, abundance and species using the Site whilst away from the roost;
- The usage of the habitats on the Site by bats;
- The temporal (both seasonally and nightly) and spatial distribution of recorded bat activity on site and any associations in terms of timings or particular features;
- Any connectivity in terms of habitats within the Site and/or the surrounding area;
- The effect of any existing lighting on the existing bat population.

3.33 Surveys were led by suitably experienced ecologists.

Static Monitoring

3.34 Monthly static (passive) monitoring was undertaken using an automated logging system (Wildlife Acoustics inc. Song meter® SM4BAT+ full spectrum bat detectors with SMM-U2 microphones). During the survey period, 11 static recording devices were positioned within the site to record bat registrations for *at least* five consecutive nights per season which were programmed to activate 30 minutes before sunset and record continuously until 30 minutes following sunrise during suitable weather conditions that were typical for each month.

3.35 The number of static detectors to be used and location of deployment was determined so that a representative sample of all habitats within the site could be monitored. The locations were subjectively predetermined using professional judgment to be positioned at least 15m away from any known or likely roosts and also in consideration of likely impacts. In order to provide rigorous analysis, static detectors were placed in the same locations across the season as shown on Figure 4.

3.36 The devices were deployed for five consecutive nights during the following periods;

- 16th April to 22nd April 2025;
- 8th May to 13th May 2025;
- 4th June to 9th June 2025;
- 9th July to 14th July 2025;
- 6th August to 11th August 2025;
- 3rd September to 8th September 2025; and
- 1st October to 6th October 2025

3.37 The static detector data was analysed as soon as possible after retrieval of the static units using the Sonobat™ 30.1 (Sonobat™ Inc.) software package to assess the amount of bat activity on site by recording the number of bat registrations. The data was initially run through the auto-analysis function of the software with manual vetting taking place of every call with the exception of common pipistrelles and soprano pipistrelles. Noise

files were also manually vetted. Measurements including peak frequency, inter-pulse interval, call duration and end frequency were taken to aid in species identification. This analysis was completed by a suitably experienced ecologist.

Nighttime bat walkover (flightpath / transects surveys)

3.38 In line with current guidance (Collins, 2024) nighttime bat walkovers (NBWs) are undertaken in two parts. The first part is undertaken by stationary surveyors positioned on habitat features most likely to be utilised as commuting routes by bats. Once conditions become too dark to see or once commuting activity has been observed and has largely ended, surveyors begin a walked transect sampling all areas and habitats within the site noting any bat activity that is heard or observed along the way. Whilst this includes two elements it is one survey designed to record information to provide further context to elements that static detectors cannot always identify such as bat behaviour or abundance of bats.

3.39 The first part of the survey to observe flightpaths involved two surveyors being positioned at predetermined locations as shown on Figures 5a, 6a and 7a. The survey started just before sunset and lasted for between 30 minutes and one hour after sunset. After this the walked transect was started and continued until two to three hours after sunset. The route followed during each transect was repeated on each survey occasion. Figures 5b, 6b and 7b show the routes of the transects and the start / end points of each survey.

3.40 Surveyors were equipped with Wildlife Acoustics inc. Echo meter touch® bat detectors in conjunction with echo meter touch® app and Samsung Galaxy Tab Active 3® during the transect surveys to detect bats and aid species identification. And during the survey noted any bat activity observed during the survey.

3.41 Survey dates, timings and weather conditions are details in Tables 7 and 8 below.

Table 7: Nighttime bat walkover timings

Survey date	Sunset time	Start time (commuting)	Start transect	End transect
16/04/25	20:13	20:13	21:23	22:27
08/05/25	20:52	20:52	21:56	23:39
04/06/25	21:31	21:31	22:42	00:22
09/07/25	21:37	21:37	22:37	00:18
06/08/25	20:57	20:57	22:10	23:39
03/09/25	19:54	19:54	20:56	22:26

Table 8: Nighttime bat walkover conditions

Survey date	Start temp	Wind Beaufort scale	Rain	Cloud cover (%)
16/04/25	8°C	1	Moderate	100
08/05/25	13°C	1	Dry	20

Survey date	Start temp	Wind Beaufort scale	Rain	Cloud cover (%)
04/06/25	13°C	2	Dry	90
09/07/25	18°C	2	Dry	10
06/08/25	14°C	1	Dry	60
03/09/25	16°C	3	Dry	90

3.42 The data from the nighttime bat walkover survey was analysed as soon as possible after the survey using the Kaleidoscope Viewer© (Wildlife Acoustics, inc.) Software package to assess the amount of bat activity on site by recording the number of bat registrations. Measurements including peak frequency, inter-pulse interval, call duration and end frequency were taken to aid in species identification. This analysis was completed by a suitably experienced ecologist.

Survey Limitations

3.43 There were small fluctuations in the weather conditions during the nights the static detectors were deployed, in which suboptimal conditions were recorded for brief periods of time, but otherwise weather was considered to be optimal in line with survey guidelines.

3.44 During the April NBW survey, sub-optimal weather conditions were recorded (temperatures <10°C and heavy rain showers). All other NBW surveys were conducted in optimal weather conditions.

3.45 Where bat calls could not be identified to species level, for example due to the lower quality of those recordings or where there are similarities between species echolocation calls (particularly for *Myotis* and *Nyctalus* species) making a definite identification difficult, a likely species identification is provided. This is based on the features displayed by the calls when analysed using the Sonobat™ 30.1 data analysis software package and taking into account the geographical location of the survey area and the habitats present.

3.46 Due to software issues, recordings on static detectors made between 16th April to 22nd April 2025 were corrupted along with units B, E and F during the July deployment. However, as the deployment of static detectors was undertaken on a monthly basis there is considered sufficient activity data across the survey period to adequately characterise bat activity. This is therefore not considered a significant constraint.

4.0 RESULTS

Desktop Study

4.1 Bat species records from the previous 20 years within 2km radius of the DCO Main Site and Western Rail Chord boundary were provided by GMLRC, MRC, and Record (The Biodiversity Information System for Cheshire, Halton, Warrington and Wirral). 126 bat records were returned, across at least 7 species. None of these records were species as being roosts. Figure 1 illustrates the locations of records. The closest relevant records are summarised in Table 9 below.

Table 9: Bat Records within 2km of the DCO Main Site and Western Rail Chord boundary

Bat Species	Conservation Status[1]	Approximate Distance of Closest Record from Site Boundary
Brown long-eared bat *Plecotus auritus*	HabRegs-Sch2; NERC_s41; WCA-Sch5; CBAP	242m northwest
Common pipistrelle *Pipistrellus pipistrellus*	HabRegs-Sch2; WCA-Sch5; CBAP	5m south
Daubenton's bat *Myotis daubentonii*	HabRegs-Sch2; WCA-Sch5; CBAP	343m north
Myotis bat *Myotis* sp.	HabRegs-Sch2; WCA-Sch5; CBAP	380m north
Natterer's bat *Myotis nattereri*	HabRegs-Sch2; WCA-Sch5; CBAP	790m east
Noctule bat *Nyctalus noctula*	HabRegs-Sch2; NERC_s41; WCA-Sch5; CBAP	75m east
Pipistrelle bat *Pipistrellus sp.*	HabRegs-Sch2; WCA-Sch5; CBAP	Within site boundary, south
Soprano pipistrelle *Pipistrellus pygmaeus*	HabRegs-Sch2; NERC_s41; WCA-Sch5; CBAP	358m east
Unclassified bat	HabRegs-Sch2; WCA-Sch5	377m south
Whiskered/Brandt's bat *Myotis mystacinus/brandtii*	HabRegs-Sch2; WCA-Sch5; CBAP	246m west

[1]**HabRegs-Sch2** – Conservation of Habitats and Species Regulations 2017 Schedule 2
NERC_s41 – Section 41 of the Natural Environment and Rural Communities Act (2006)
WCA-Sch5 – Wildlife & Countryside Act 1981 Schedule 5
CBAP – Cheshire Biodiversity Action Plan 2007

European Protected Species Licences

4.2 The Multi-Agency Geographic information for the Countryside (MAGiC) database returned one record of a granted EPSL less than 2km from the DCO Order Limits. This pertained to the destruction of a common pipistrelle resting place (2019-43365-EPS-MIT) approximately 1.4km to the west.

Designated Sites

4.3 No statutory or non-statutory sites, for which bats are a primary designating feature, are present within 2km of the DCO Order Limits.

Preliminary Bat Roost Assessments

Buildings

4.4 A number of structures were identified across the Main Site area which were subject to a PRA as shown on Figure 2. A single building was considered to have a moderate bat roost potential (BRP) and a further seven buildings were considered to have low BRP. The remaining buildings were considered to have negligible BRP due to the absence of potential roost features (PRFs).

4.5 Full details of the PRA for each building are provided in Appendix B with photographs in Appendix C.

Ground Based Tree Assessments & Aerial Inspections

4.6 31 trees were classified as Further Assessment Required (FAR) or presented with one or more PRFs during the GBTA surveys. Of the 31 trees identified, 23 trees could be safely accessed for aerial assessment, 12 supported PRF-I features and 11 supported PRF-M features. Those trees unable to be accessed for aerial assessment were subject to further ground based nocturnal emergence survey. The locations of all assessed trees are shown in Figure 3 and full details of all PRFs surveyed are provided in Appendix D.

Nocturnal Bat Emergence Surveys

Buildings

4.7 Low to moderate levels of bat activity were recorded across the nocturnal building surveys. The most commonly observed species were common pipistrelle, followed by soprano pipistrelle, and noctule, all of which were recorded commuting and foraging in the survey area. Full details of all nocturnal surveys are available in Appendix E.

4.8 Across the 2025 nocturnal survey suite only a single emergence was recorded, which related to an individual common pipistrelle bat recorded emerging from the north-east corner of building B2 (see Photo 1) on 28th July 2025.

Photo 1 – Emergence location in yellow box (beneath eaves under corrugated metal).

Trees

4.9 No emergences from potential roost features were observed from any trees across the survey area.

4.10 The area around trees T5, T13, and T27 showed the highest levels of activity. Across all seasons continuous foraging by common pipistrelle, noctule, and soprano pipistrelle was recorded around these hotspots. T13 also showed sustained common pipistrelle, noctule, and soprano pipistrelle foraging activity on 21/07/25 and 07/08/25. Around T31, frequent commuting and foraging activity was observed on 19/06/25 and 07/08/25. The areas around T28, T29, T13, T19, and T8 showed little to no activity on several occasions, with some common pipistrelle foraging activity around T19 and T8 later in the season. Overall, common pipistrelle bats were the most frequently observed species, followed by noctule and soprano pipistrelle.

Activity Surveys

Habitat Suitability Assessment

4.11 The arable fields over much of the Main Site provided sub-optimal foraging habitat for bats, with disjointed connectivity along the gappy hedgerows and fences, also broken by Parkside Road running through the western part of the Main Site. However, some hedgerows and scattered trees provide links to the wider local area, such as patches of woodland, which are of better quality for foraging. Habitats are illustrated in the accompanying PEIR chapter.

Static Bat Detector Surveys

4.12 The data recorded by the SM4BAT static bat detector surveys is summarised within this section with the full data set provided in Appendix F. The unit locations are shown in Figure 4.

4.13 During the SM4BAT surveys the most frequently recorded species was Common Pipistrelle, with Soprano Pipistrelle, Noctule, *Myotis* species, Brown Long-eared, *Nyctalus* species, Nathusius' Pipistrelle, and Leisler's also recorded at lower frequencies (Table 10 provides a percentage breakdown).

Table 10: Species recorded during the SM4BAT Surveys

Species	Count	Percentage (%)
Common pipistrelle	40108	82.649%
Soprano pipistrelle	5388	11.103%
Noctule	2516	5.185%
Myotis species	316	0.651%
Brown Long-eared	123	0.253%
Nyctalus Species	73	0.150%
Leisler's bat	3	0.006%

Species	Count	Percentage (%)
Nathusius' pipistrelle	1	0.002%

4.14 Units A, B and C located in the area of the Western Rail Chord recorded very low activity across the entire season with only 3643 registrations total. Common pipistrelle was the most commonly recorded species (2432 registrations), with lower numbers of soprano pipistrelle (898 registrations), noctule (209 registrations), *Myotis* species (68 registrations), brown long-eared bat (27 registrations) and *Nyctalus* species (9 registrations).

4.15 Unit K located in the south of the Main Site recorded extremely low activity with only 564 registrations across the year, with recorded activity attributed to noctule (322 registrations) common pipistrelle (227 registrations) and soprano pipistrelle (15 registrations).

4.16 Units D, E and F, located in the centre and north of the Main Site also recorded low activity with only 6720 registrations across the year. Common pipistrelle was the most commonly recorded species (5169) registrations), with lower numbers of soprano pipistrelle (678 registrations), noctule (715 registrations), *Myotis* species (69 registrations), brown long-eared bat (56 registrations) and *Nyctalus* species (33 registrations).

4.17 Units G, H, I and K, located in the east of the Main Site along the boundary with Highfield Moss SSSI, the nearby on-site woodland parcel and within a nearby hedgerow junction, recorded by far the highest levels of activity with a total of 37601 registrations across the year. Common pipistrelle was the most commonly recorded species (32280) registrations), with lower numbers of soprano pipistrelle (3797 registrations), noctule (1270 registrations), *Myotis* species (179 registrations), brown long-eared bat (40 registrations) and *Nyctalus* species (31 registrations) and very low registrations for Leisler's (3 registrations) and Nathusius' pipistrelle (1 registration).

Night-time Bat Walkovers

Flightlines Surveys

4.18 Bat activity recorded during the flightline surveys comprised common pipistrelle, soprano pipistrelle, and noctule commuting and foraging. Activity was very limited in spring, with no bats recorded in April and just five common pipistrelle passes, a single *Pipistrellus* species (unidentified to specific species) pass and a single noctule pass recorded during the May survey across the Survey Area. Activity was also lower in Autumn across all positions.

4.19 In the area of the Western Rail Chord (Figure 5a) at positions FL1a and FL1b only low levels of foraging and commuting activity from common pipistrelle and soprano pipistrelle were recorded, with no discernible significant commuting routes identified. In June position FL1c in the north of the Main Site recorded several common pipistrelle passes, commuting east along the existing railway line. Position FL1d in the north-western area of the Main Site (north of Parkside Farm) recorded only two noctule passes overall.

4.20 In the southern area of the Main Site (Figure 6a) at flightline positions FL2a and Fl2b, activity was limited to early noctule foraging. Positions FL2c and FL2d (in the west/north-west of the Main Site) recorded activity from a broader range of species, comprising common pipistrelle and soprano pipistrelle as well as noctule across summer and autumn. Consistent low levels of foraging/commuting activity was recorded along the woodland edge and the hedgerow to the west of the Parkside Farm building group. However, no significant commuting routes were observed.

4.21 Greater activity was recorded in the east of the Main Site (Figure 7a), with early noctule foraging noted across all flightline positions. Activity from common pipistrelle and soprano pipistrelle was highest around Highfield Farm (FL3d) which is consistent with the results from the nocturnal emergence surveys on the Highfield Farm building group. However, no significant commuting routes were observed.

Walked Transects

4.22 Bat activity recorded during the walked transects comprised common pipistrelle, soprano pipistrelle, noctule and *Myotis* species. Similar to the flightline surveys, activity was also very limited in spring, with no bats recorded April, and only small numbers of foraging common pipistrelle and soprano pipistrelle noted in May. Activity was also significantly lower in Autumn across all routes.

4.23 Activity recorded along Route 1 (Western Rail Chord and northern Main Site Figure 5b) predominantly comprised foraging common pipistrelle, with more limited contacts from soprano pipistrelle, *Myotis* species and noctule. Activity along Route 1a was generally evenly distributed across the area, whereas along Route 1b it was more concentrated along the boundary habitats, and associated with the railway line.

4.24 Along Route 2 (Western Main Site Figure 6b) low overall activity was recorded which comprised predominantly foraging common pipistrelle with more limited soprano pipistrelle and *Myotis* species contacts. Activity was lower in the southern part of the route and greater in the northeastern section. The single *Myotis* species contact was associated with the woodland parcel edge in the northeast.

4.25 Activity recorded along Route 3 (Eastern Main Site Figure 7b) was low overall and predominantly comprised common pipistrelle foraging, with more limited contacts from soprano pipistrelle, noctule and *Myotis* species. Activity was evenly distributed across the route with a slight decrease around the area of the scrapyard in the far north-east of the Main Site.

5.0 SUMMARY

Development Proposals

5.1 The Main Site is proposed to be developed as a Strategic Rail Freight Terminal and logistics park. It is assumed that all habitats within the Main Site will be cleared during the Proposed Development.

5.2 The Western Rail Chord is proposed to be developed as a railway line spur which, in the future will serve a separate proposed development (Parkside West). It is assumed that the majority of habitats within the footprint of the railway chord will be lost.

Desk Study

5.3 No sites designated for their bat assemblage were present within 2km of the DCO Site.

5.4 The bat records identified within the data search pertained to predominantly common and widespread species which were consistent with those recorded during the bat activity and nocturnal surveys carried out.

5.5 The single EPSM licence identified within 2km pertained to the destruction of a common pipistrelle day roost, which was of low conservation status.

Roosting Bats

5.6 The suite of tree surveys comprising GBTA, aerial inspections and nocturnal emergence surveys recorded no evidence of roosting bats. T24, T25 and T26 were not subject to further survey as these are retained under current proposals.

5.7 A single common pipistrelle day roost was identified during the building emergence surveys in B2a (the barn at Highfield farm), which is a low conservation status roost and of local importance only. A Natural England Licence is required to facilitate the proposed demolition of B2. No other roosts were identified during the suite of emergence surveys and roosting bats are therefore not considered to represent a constraint to the demolition of the other surveyed buildings.

Bat Activity

5.8 The vast majority of static registrations across all seasons were of common pipistrelle, with lower numbers of soprano pipistrelle and noctule, very low numbers were recorded of *Myotis* species, brown long-eared bat, *Nyctalus* species, Leisler's bat and a single Nathusius pipistrelle registration. Common pipistrelle, soprano pipistrelle, noctule and brown long-eared bats are all common and widespread along with most of the possible *Myotis* species.

5.9 Leisler's bat and Nathusius pipistrelle are both widespread but more rarely recorded, though occasional registrations are not unusual. Records of these species were very limited and were concentrated at positions along the boundary with Highfield Moss SSSI.

5.10 Overall, activity was highest in the north and north-east of the Main Site in the areas bordering Highfield Moss SSSI, which will be protected and subject to new, suitable habitat creation within the Proposed Development. Elevated levels of activity were also

recorded at a nearby hedgerow junction leading south from the SSSI, and in the nearby isolated stand of woodland (Moss Pits). By contrast, activity at the western side of the Main Site was consistently low.

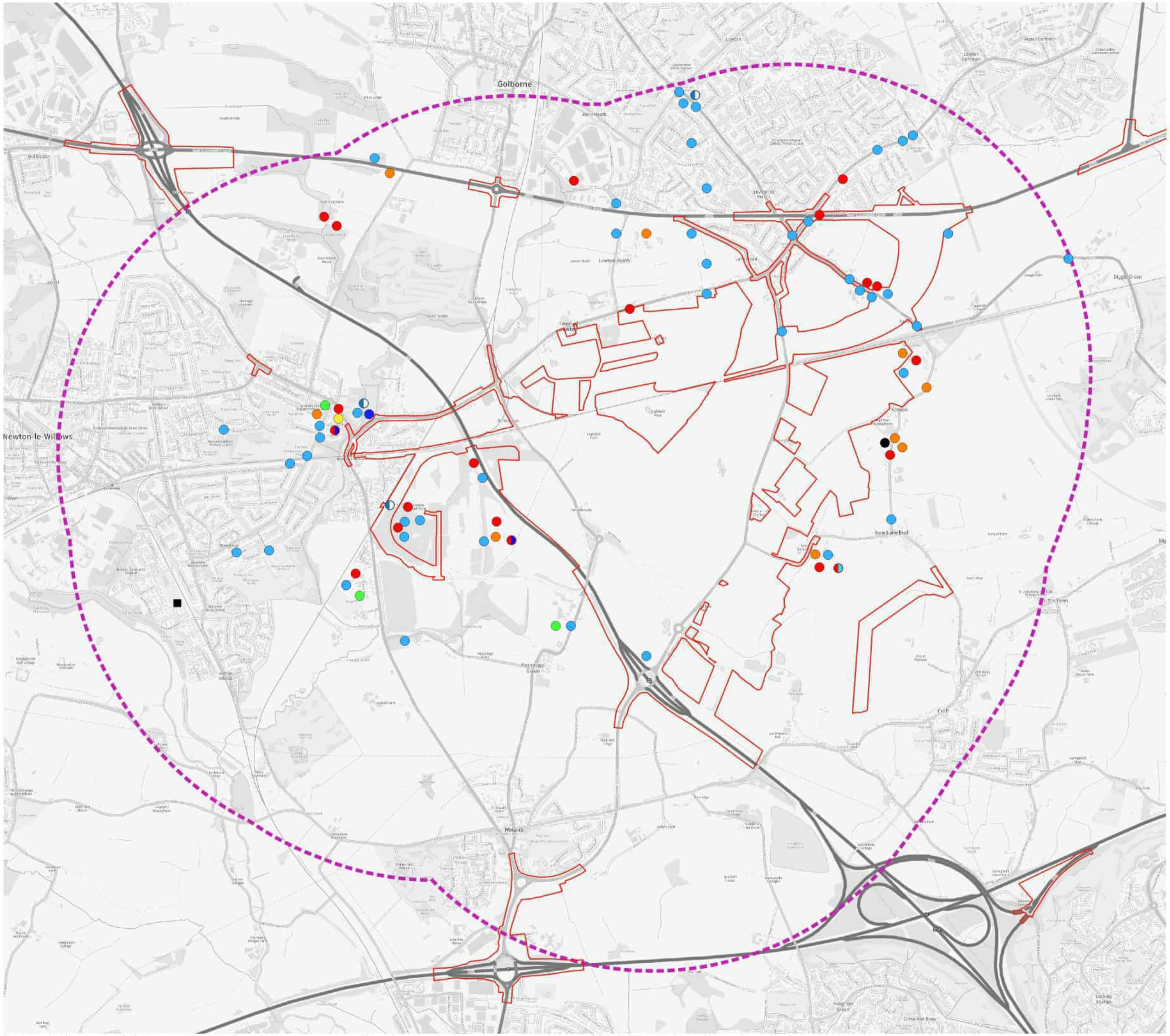
5.11 Overall activity was greatest in spring and mid-late summer, with notable decreases in June and Autumn. In the south of the Main Site the static detector recorded consistently low levels of activity across the survey period indicating limited use of this area by bats.

5.12 Despite variation in overall numbers, the assemblage of species remained consistent across the survey period at all locations.

5.13 Some indication of commuting routes can be seen from the flightline surveys; along the existing railway line in the north which was used by small numbers of common pipistrelle bats, and along the hedgerow to the west of the Parkside building group, which was used by small numbers of soprano pipistrelle and common pipistrelle bats.

5.14 Early foraging was noted in the west of the Main Site by common and soprano pipistrelles however no discernible commuting routes could be identified. Early commuting and foraging activity was also noted by noctule bats in the large arable field parcels, particularly in the east and south of the Site.

5.15 Based on the above results, the Site is considered to be of overall Local value for bats in relation to foraging and commuting.



N

0 500 1,000 m

Draft Order Limits

2km Buffer

Bats:

- Brown Long-eared Bat
- Common Pipistrelle
- Daubenton's Bat
- Myotis Bat Sp.
- Natterer's Bat
- Noctule Bat
- Pipistrelle Bat Sp.
- Soprano Pipistrelle
- Unidentified Bat Sp.
- Whiskered/Brandt's Bat
- Common Pipistrelle Roost - EPSL Granted 2019-43365-EPS-MIT

date: 24/10/25

drwn/chkd: LH / PA

client: **Intermodal Logistics Park North Limited**

project: **ILPN**

title: **Site Location and Bat Desk Study Plan**

scale: 1:25,000 @ A3

number: **FIGURE 1**

rev: -

FPCR | environment & design

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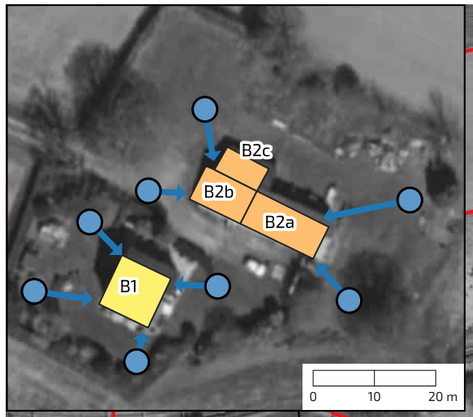
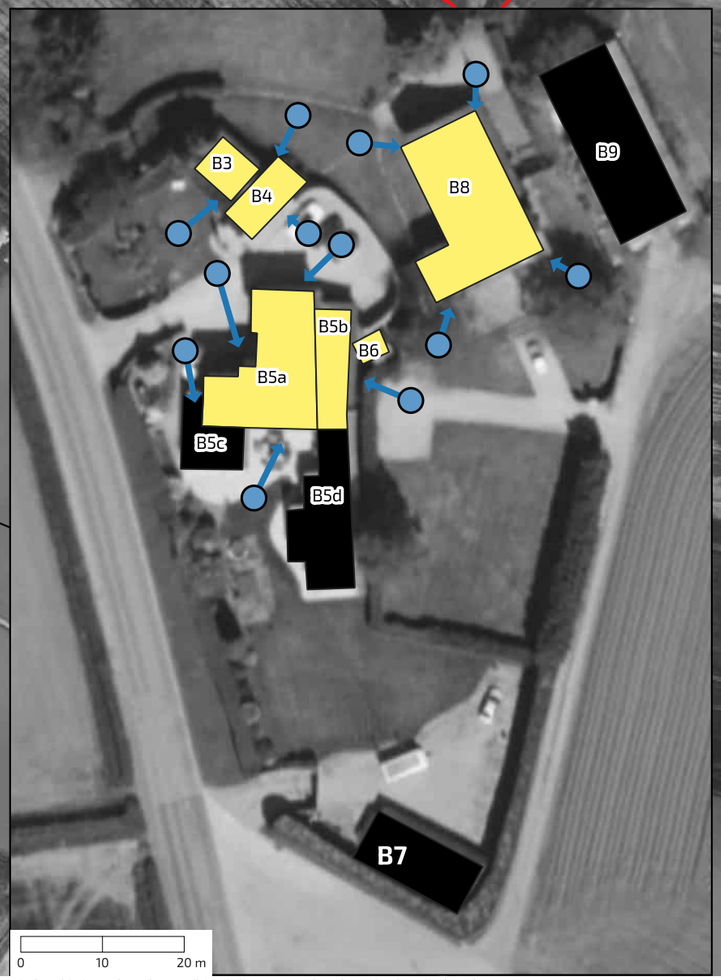
L:\13100\13196\ECO\QGIS\QGIS 2.14\Plans\consultation plans\13196-E-01 Consultation Plan\Consultation Plan.qgs





N

0 100 200 m

Draft Order Limits

Building Bat Roost Potential

Low

Moderate

Negligible

Nocturnal Surveyor Locations

Surveyor sightline

date 24/10/25

drwn/chkd CDM

client
Intermodal Logistics Park North Limited

project
ILPN

title
BUILDING BAT SURVEY PLAN

scale 1:5,000 @ A3

number
FIGURE 2

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-

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N

0 100 200 m

Draft Order Limits

Tree Bat Roost Potential Category

- FAR
- None
- PRF-I
- PRF-M

date: 24/10/25

drwn/chkd: CDM / DJF

client: **Intermodal Logistics Park North Limited**

project: **ILPN**

title: **BATS IN TREES SURVEY PLAN**

scale: 1:5,000 @ A3

number: **FIGURE 3**

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N

0 250 500 m

Draft Order Limits

Static Bat Detector Locations (with ref.)

date 24/10/25

drwn/chkd CDM

client
Intermodal Logistics Park North Limited

project
ILPN

title
STATIC BAT DETECTOR LOCATION PLAN

scale 1:10,000 @ A3

number
FIGURE 4

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date
24/10/25

drwn/chkd
LH, EOM/PA

client
Intermodal Logistics Park North Limited

project
ILPN

title
Flightline Survey Plan - Route 1

scale
1:5,500 @ A3

number
FIGURE 5a

rev
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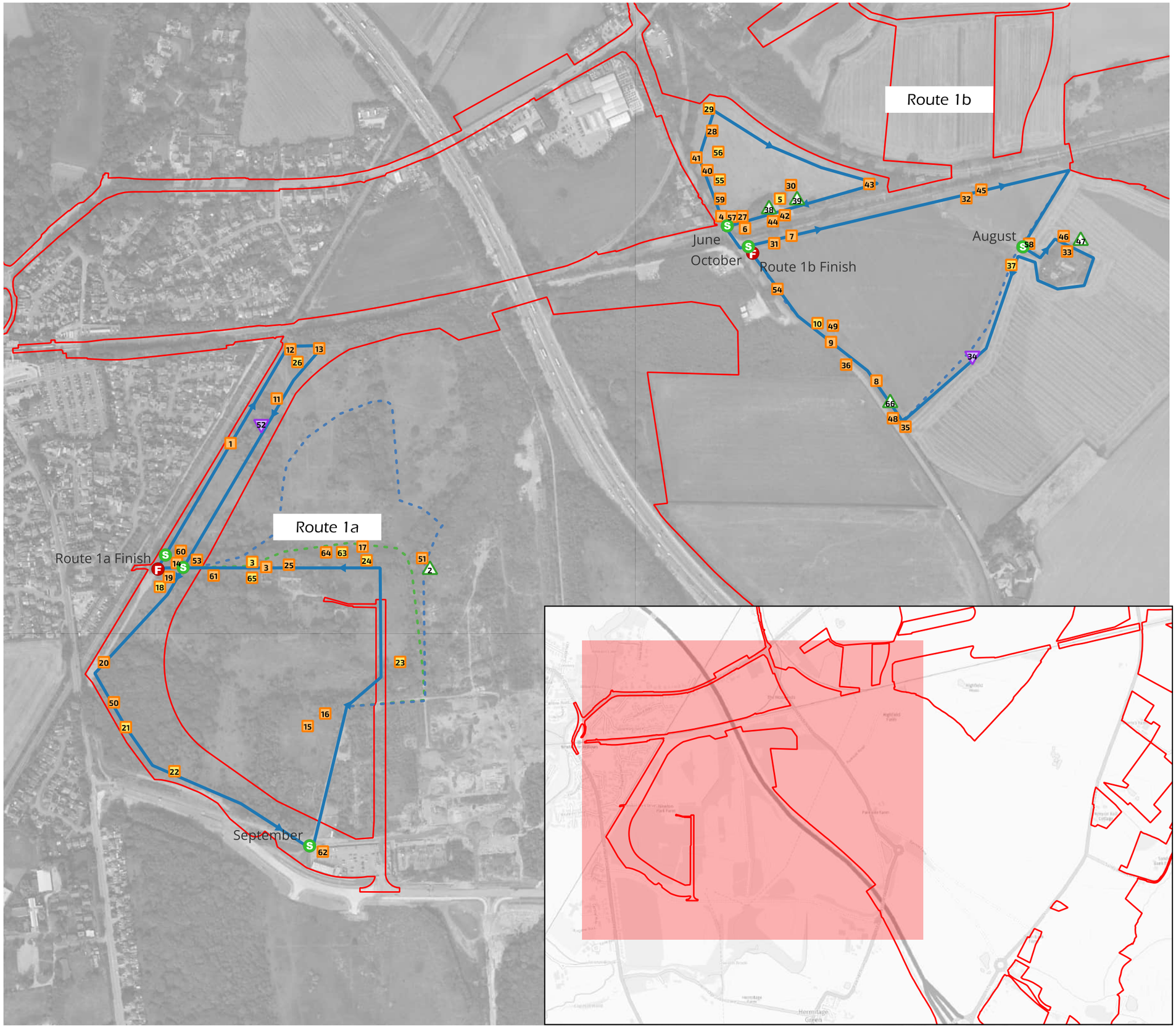

date 24/10/25

drwn/chkd TC / PA

client
Intermodal Logistics Park North Limited

project
ILPN

title
Transect Plan - Route 1

scale 1:5,700 @ A3

number
FIGURE 5b

rev

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N

0 100 200 m

Draft Order Limits

Flightline Survey

Surveyor Locations

Bat Contacts

Common Pipistrelle

Noctule

Soprano Pipistrelle

Flight Paths

date 24/10/25

drwn/chkd LH/PA

client

Intermodal Logistics Park North Limited

project

ILPN

title

Flightline Survey Plan - Route 2

scale 1:5,000 @ A3

number

FIGURE 6a

rev -

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N

0 150 300 m

- Draft Order Limits
- Start Point
- Finish Point
- Transect Route
- Flightpaths
- Common Pipistrelle
- Myotis Species
- Soprano Pipistrelle

date: 24/10/25

drwn/chkd: TC / PA

client: **Intermodal Logistics Park North Limited**

project: **ILPN**

title: **Transect Plan - Route 2**

scale: 1:4,700 @ A3

number: **FIGURE 6b**

rev: **A**

FPCR | environment & design

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N

0 100 200 m

Draft Order Limits

Surveyor Locations

Flight Paths

Bat Contacts

Common Pipistrelle

Noctule

Soprano Pipistrelle

date 24/10/25

drwn/chkd LH/PA

client
Intermodal Logistics Park North Limited

project
ILPN

title
Flightline Survey Plan - Route 3

scale 1:4,750 @ A3

number
FIGURE 7a

rev **-**

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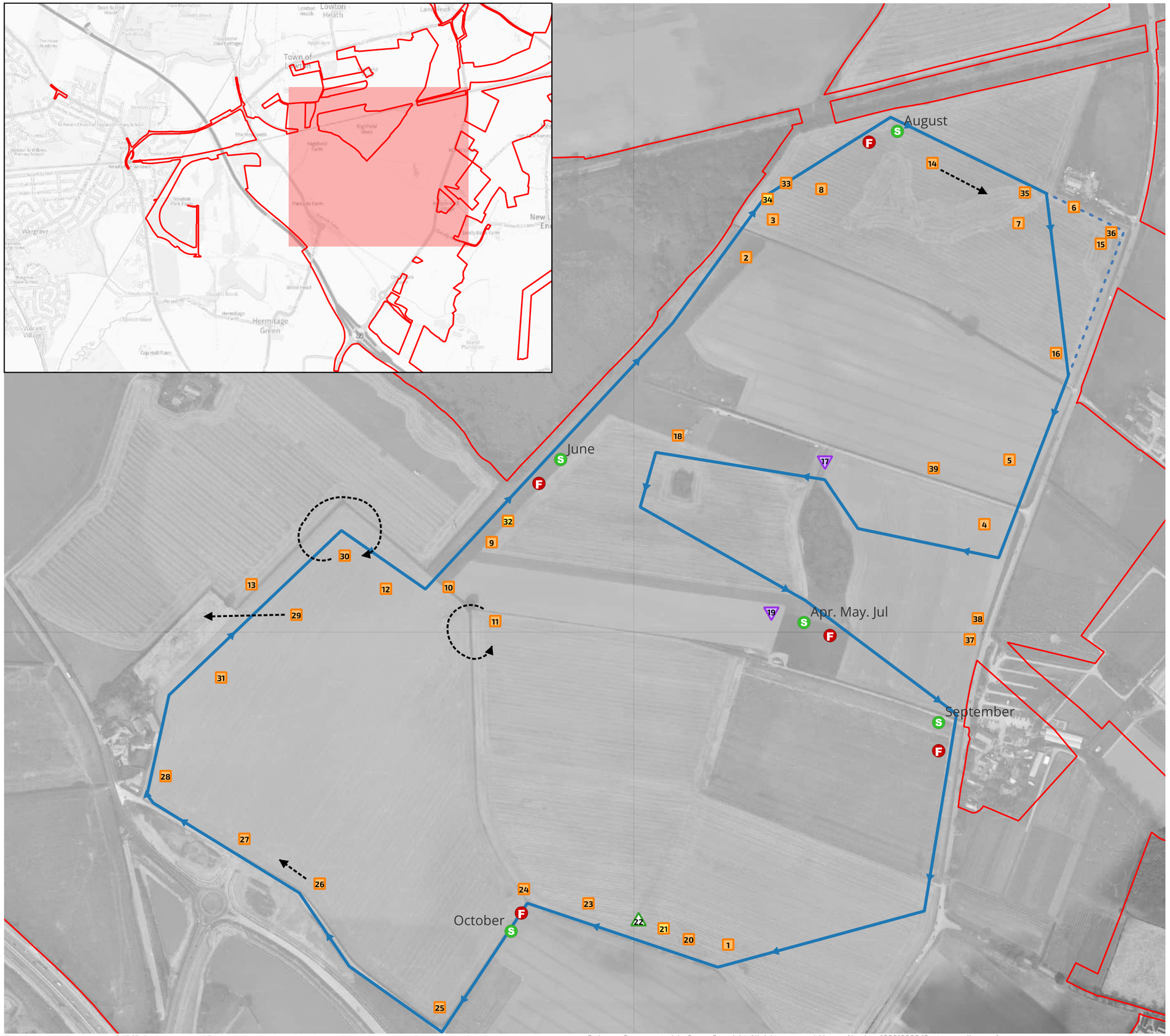


N

0 150 300 m

- Draft Order Limits

Route 3 Transect

- Start Point
- Finish Point

Bat Contacts

- Common Pipistrelle
- Myotis Species
- Noctule
- Soprano Pipistrelle
- Flightpaths
- Transect (Apr. May. Jul)
- Transect (June. Aug. Sept)

Google Satellite

t: 01509 672772 e: mail@fpcr.co.uk w: www.fpcr.co.uk

date 24/10/25 | drwn/chkd HW/PA

client
Intermodal Logistics Park North Limited

project
ILPN

title
Transect Plan - Route 3

scale
1:5,000 @ A3

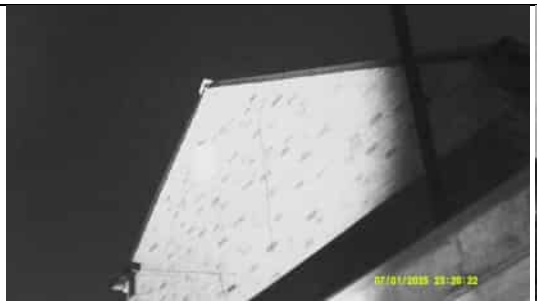
number
FIGURE 7b

rev
-

FPCR | environment & design

Appendix A: Nocturnal Survey NVA Darkest Point Photos

	12/06/25
B17	 
T28	
T29	
	19/06/25
T27	 
T19	

T5	
T13	
	01/07/25
B4	 
B5	   

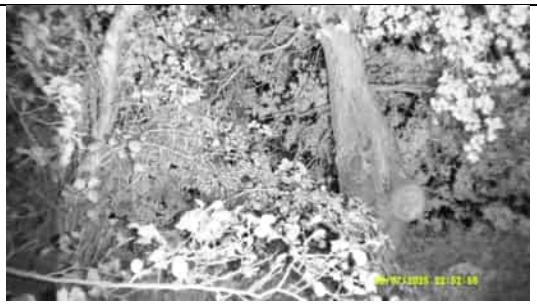
	 
	03/07/25
B1	   
B2	   

	14/07/25
T13	
T5	
T27	 
T28	
T29	

	21/07/25
T8	 
T19	
T14	
	22/07/25
B4	

B5	   
B5/6	
	24/07/25
B8	   

	28/07/25
B1	   
B2	   

	07/08/25
T13	
T5	
T27	 
T14	

	11/08/25
T8	 
T19	
	19/08/25
B8	  
	28/08/25
B2	 

	 
	22/09/25
T28	
T29	

Appendix B: Potential Roost Assessment Results Table - Buildings

Building number	Building Description	Structural Features Present						Other Structural Features of Note	Potential Bat Access Points	Internal Features	Bat Roosting Potential
		Gables	Barge Boards	Soffit Boards	Fascia Boards	Flashing	Roof Void				
B1	Two storey brick house with a pitched roof and slate tiles. Porch on north side with flashing above UPVC windows and doors. Cameras and lighting.	Y	Y	Y	Y	Y	Y	Concrete barge boards	Northeast corner- gap into soffit box. Southeast corner- gaps around flashing on chimney. North- gap where round pipe used to be. Gap next to pipe on roof in tile Northwest and southwest corner- gaps into soffit box South roof- lifted tiles, particularly around above chimney South wall - open porch, no features	No internal access	Low
B2a	Two storey brick building with pitch roof covered composite metal wooden window. North - Barn door: Rotten barn owl box East - Stonework present wooden door. South - wooden stable door. Metal door with wood board above hay loft. Door boarded 2 glass windows. West - Bricked up window. Bird boxes.	Y	Y	N	Y	N	N	Comp barge boards Wooden fascia boards	North - missing brickwork and stonework. East - gaps in brickwork. Lifted bargeboards. Missing mortar. Gaps in brickwork. Bird box entrances. Barn owl access. Hay loft boarding gaps. Gaps around window frame. Gaps around boarding above door	North- Heavy cobwebbing open to roof. East- Missing mortar. Barn owl box. Bird nest West- ground floor access	Moderate

Building number	Building Description	Structural Features Present						Other Structural Features of Note	Potential Bat Access Points	Internal Features	Bat Roosting Potential
		Gables	Barge Boards	Soffit Boards	Fascia Boards	Flashing	Roof Void				
										possible through gaps around window frame Dirty and cobwebbed and floor visible from central room- missing mortar but evidence of nesting birds and droppings	
B2b	Single storey brick building attached to West side of B2a. Single pitched roof covered in corrugated metal steeling. Wooden window to glass. Stable door. Security cameras and lights and bird boxes.	N	Y	N	Y	Y	N	Metal barge boards. Wooden fascia boards.	Missing mortar Gaps around door- heavily cobwebbed. Two gaps in brickwork to cavity.	Open to roof	Low
B2c	Single storey structure.		N	N	N	N	N		Gas in roof at wall tops. Mortar gaps.	Some gaps in mortar.	Low

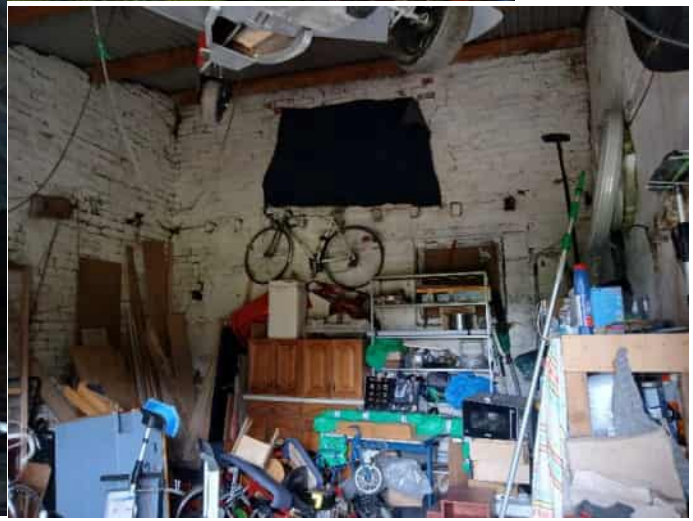
Building number	Building Description	Structural Features Present						Other Structural Features of Note	Potential Bat Access Points	Internal Features	Bat Roosting Potential
		Gables	Barge Boards	Soffit Boards	Fascia Boards	Flashing	Roof Void				
	Brick columns, wood, corrugated metal sheet attached to B2b on South side. East - brick wall Single pitched roof covered in corrugate composite material Bird boxes and stable doors									Rough beams.	
B3	Single storey brick-built garage with pitched interlocking composite tiled roof.	Y	N	Y	Y	N	N	2 garage doors on northeast. Tiles very tight.	Gap under tiles via loose mortar on northeast corner. Small gap between soffit and tiles on north corner.	No access	Low
B4	Two storey brick-built house with pitched slate tiled	Y	Y	N	N	N	N	Security light on southeast aspect West- skylight	Gaps under eaves. Damage on west corner. Ridge tile gaps and lifted tiles along verges.	No access	Low
B5a	Two storey brick built house with a pitch tiled roof.	Y	Y	Y	Y	Y	Y	Skylights	West- gable gaps under barge boards in damaged brickwork. Possible access into void. Gaps associated with the gable and ridge. Soffit gaps near front door.	No access	Moderate

Building number	Building Description	Structural Features Present						Other Structural Features of Note	Potential Bat Access Points	Internal Features	Bat Roosting Potential
		Gables	Barge Boards	Soffit Boards	Fascia Boards	Flashing	Roof Void				
B5b	Single storey brick-built annex with lean-to slate tiled roof.	N	N	Y	Y	Y	N	Skylights	Lifted flashing. Small gap under soffit where north end adjoins B5b. Small gaps under soffit in north.	No access	Low
B5c	Single storey brick-built conservatory with wood and glass walls and a glass roof.	N	N	N	N	Y	N	None.	None.	None.	Negligible
B5d	Single storey brick-built annex with pool inside. Flat metal roof with pitched glass parts.	N	N	Y	Y	N	N	Lots of windows/ glass doors. Glass roof.	None	Open and light	Negligible
B6	Single storey brick built electrical building with a pitched slate tiled roof.	Y	Y	Y	Y	N	Y	Appropriate temperature for roosting. Quite cluttered around building. Security light facing B5.	Gap above soffit on corner of gable- cobwebbed. Multiple small gaps in mortar under soffits which lead into cavity between tiles and felt.	Warm. No access into void.	Low
B7	Single storey brick-built garages with featured wood	N	N	Y	N	N		North-garage doors.	None	No access	Negligible

Building number	Building Description	Structural Features Present						Other Structural Features of Note	Potential Bat Access Points	Internal Features	Bat Roosting Potential
		Gables	Barge Boards	Soffit Boards	Fascia Boards	Flashing	Roof Void				
	panel walls and hipped slate tiled roof.							West-porch			
B9	Large barn with breeze block base and corrugated metal sheet walls and pitched roof of the same material.	Y	Y	N	N	N	N	Southeast - large open entrance. Single skinned construction.	Via the open entrance and broken wall panels.	Exposed to sunlight. Drafty.	Negligible
B10-B16	A series of single-skinned storage buildings of corrugated metal construction.										Negligible
B17	Single storey brick-built dog training building with new pitched corrugated metal sheet roof.	Y	Y	N	N	N	N	Old building with new roof. North-windows	Gaps associated with the eastern gable. Brickwork damaged under eaves in northeast corner and on northwest corner near supporting beams.	Single well-lit room, open to the ridge. Roof supported by old wooden beams. No backing behind roof panels.	Low

Appendix C: Preliminary Roost Assessment Photographs – Buildings

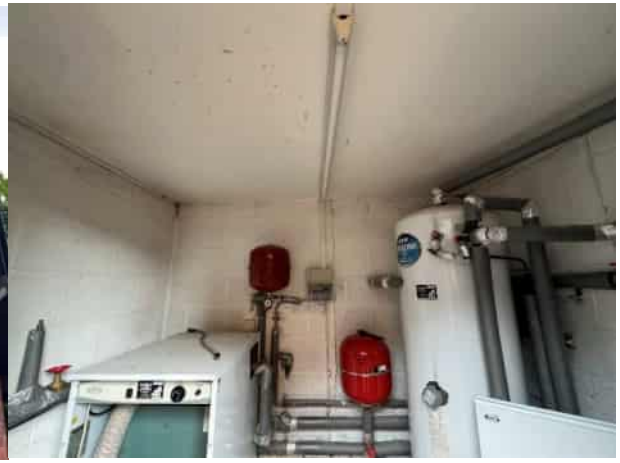
Ref.	Photographs
B1	 
B2a/b/c	 

Ref.	Photographs
	   

Ref.	Photographs
B3	 
B4	  

Ref.	Photographs
B5a	  

Ref.	Photographs
B5b	 
B5c / d	 

Ref.	Photographs
B6	 
B7	 

Ref.	Photographs
B8	   

Ref.	Photographs
B9	 
B17	  

Appendix D: Tree Potential Roost Features Table

Ref.	Species	Details of features (measurements approx.)	Surveys undertaken	Category	Further action
T1	Alder	Cavity at tree base. 3cm x 3cm entrance extending 1m. Large 10cm x 10cm cylindrical cavity in trunk. Dry, rough with some smooth parts.	Three aerial assessments	PRF-M	Pre-fell check
T2	Oak	Cavity 20cm wide extending 40cm upwards. Dry and rough.	Three aerial assessments	PRF-M	Pre-fell check
T3	Oak	Single knothole 4cm wide, superficial.	Single aerial assessment	None	None
T4	Alder	Exposed heartwood cavity, extending 0.5m up into main stem. Narrow and filled with several slugs.	Single aerial assessment	PRF-I	Pre-fell check
T5	Oak	Rot hole cavity 2m up.	Three nocturnal surveys	FAR	Pre-fell nocturnal
T6	Alder	10cm wide, 2.5 in height and 20cm upwards deep. Light coming in from the top. Dry, rough.	Single aerial assessment	PRF-I	Pre-fell check
T6	Alder	20cm deep, rough, dry.	Single aerial assessment	PRF-I	Pre-fell check
T7	Alder	5x5cm extending 1m into limb. Dry, rough.	Three aerial assessments	PRF-M	Pre-fell check
T8	Alder	Cavity 7.5cm x 7.5cm extending 15cm with small crevices. Dry, rough,	Single aerial assessment and two nocturnal surveys (tree unsafe for further climbs)	PRF-M	Pre-fell nocturnal
T8	Alder	5cm x 5cm cavity, 30cm deep. Smooth, dry,	Single aerial assessment and two nocturnal surveys (tree unsafe for further climbs)	PRF-M	Pre-fell nocturnal
T8	Alder	Cavity splits into two, extending 40cm. Smooth, dry with old nesting material in the left and dry with fewer crevices in the right.	Single aerial assessment and two nocturnal surveys (tree unsafe for further climbs)	PRF-M	Pre-fell nocturnal
T8	Alder	10x10cm entrance. 20x20cm cavity extending back 15cm and down at least 1m with crevices. Dry.	Single aerial assessment and three nocturnal surveys (tree unsafe for further climbs)	PRF-M	Pre-fell nocturnal

Ref.	Species	Details of features (measurements approx.)	Surveys undertaken	Category	Further action
T9	Alder	Shallow knot hole extends 7.5m down. Exposed to wind and water ingress. No crevices within.	Single aerial assessment	PRF-I	Pre-fell check
T10	Alder	Extends 30cm with wide entrance, 20cm x 20cm cavity dimensions.	Single aerial assessment	PRF-I	Pre-fell check
T11	Oak	Branch tear out. Cavity extends 1m up and connects to a knot hole. Dry and rough.	Three aerial assessments	PRF-M	Pre-fell check
T12	Oak	Cavity with 5cm w x 5cm entrance extending 12.5cm. Dry and smooth.	Single aerial assessment	PRF-I	Pre-fell check
T12	Oak	Upwards facing cavity leading to cavity extending 10cm upwards. Dry at the time of survey but open to water ingress.	Single aerial assessment	PRF-I	Pre-fell check
T13	Alder	Woodpecker hole 8m up	Three nocturnal surveys	FAR	Pre-fell nocturnal
T14	Dead tree	Knot holes on west and south aspects.	Three nocturnal surveys	FAR	Pre-fell nocturnal
T15	Alder	Cavity with 5x5cm entrance extending 50cm upwards. Dry and rough.	Three aerial assessments	PRF-M	Pre-fell check
T16	Oak	Knot holes on north leaning limb, on E/S aspects 6m up. Features all connected. Dry/rough. Two knot holes 5x5cm each, 50cm tube between knot holes and third gap, exposed to the elements slightly, nesting material present (this section being PRF-I). Third gap on front 5x5cm entrance and extends at those dimensions approx. 15cm into N leaning limb, nesting material present, dry, less exposed (PRF-M feature).	Three aerial assessments	PRF-M	Pre-fell check
T17	Hawthorn	Single feature doesn't lead anywhere and is cluttered and unsuitable.	Single aerial assessment	Negligible	None
T18	Oak	Single feature extends back 10cm with lots of crevices within cavity. Regrowth hides a crevice from the elements and extends 20cm with more crevices within it. Lifted bark around the edge of the feature and canker forming around the edge.	Three aerial assessments	PRF-M	Pre-fell check
T19	Crack willow	Rot hole 2m up extending upwards. Tubular feature 5x7.5cm with slugs inside seen from ground.	Three nocturnal surveys	FAR	Pre-fell nocturnal

Ref.	Species	Details of features (measurements approx.)	Surveys undertaken	Category	Further action
T20	Goat willow	10x10cm knot hole 1m up. 5x5cm cavity within leading 30cm up to another knothole. Rough and dry.	Single aerial assessment	PRF-I	Pre-fell check
T21	Oak	Knot hole. 10x5cm entrances. Cavity extends 10cm. First 5cm depth the hole extends upwards by approx. 5cm. Latter 5cm depth extends behind a rotting plate and upwards and was occupied by several slugs.	Single aerial assessment	PRF-I	Pre-fell check
T22	Alder	Single knothole feature. Superficial.	Single aerial assessment	None	None
T23	Oak	Knothole 5m up on southern aspect. Entrance 2.5x2.5cm extending up 10cm.	Single aerial assessment	PRF-I	Pre-fell check
T23	Oak	Cavity 5x5cm extending 10cm but narrows.	Single aerial assessment	PRF-I	Pre-fell check
T24	Alder	5x5cm cavity extending 30cm upwards. Tubular.	Single aerial assessment	PRF-I	Buffered
T25	Oak	5x5cm cavity extends right 30cm into branch leading to a cavity of up to 10x10cm. Old bird nesting material present. Cavity also extends to left 40cm, with narrower cavity 5x5cm.	Single aerial assessment	PRF-M	Buffered
T25	Oak	5x5cm cavity extends back 20cm. Smooth, dry.	Single aerial assessment	PRF-I	Buffered
T26	Alder	4x4cm cavity extends 7.5cm. Smooth, dry.	Single aerial assessment	PRF-I	Buffered
T27	Ash	Deep crack in main stem 3m up.	Three nocturnal surveys.	FAR	Pre-fell nocturnal
T28	Birch	Cracked main stem 7m up.	Three nocturnal surveys.	FAR	Pre-fell nocturnal
T29	Crack willow	Knot hole at base of branch split on west aspect 9m up.	Three nocturnal surveys.	FAR	Pre-fell nocturnal
T30	Oak	5cm x 5cm cavity extends 60cm leading to D-shaped cavity 12.5x10cm. Bird nest material present, And Another 5x5cm cavity extends 30cm and then 1m up to 15x15cm cavity.	Three aerial assessments	PRF-M	Pre-fell check

Ref.	Species	Details of features (measurements approx.)	Surveys undertaken	Category	Further action
T31	Oak	5x5cm cavity extending 10cm. Active blue tit nest during first survey (19th May 2025). could not fully inspect.	Three aerial assessments (after blue tit chicks had fledged)	PRF-M	Pre-fell check
T31	Oak	Ground level crevices beneath rotting heartwood plates. Open to water ingress.	Single aerial assessment	PRF-I	Pre-fell check

Appendix E: Nocturnal Emergence Detailed Results

Buildings

Survey Date	Bat Activity	Roosts (if present)
12/06/25	The area around B17 was active with numerous bat sightings. A total of 15 bats were seen by two surveyors, both commuting and foraging, with numerous other bat passes heard but not seen. Common pipistrelle, Soprano pipistrelle, and Noctule bats were all observed. Bat activity was recorded from 29 minutes after sunset until the end of the survey, 2 hours after sunset.	None.
01/07/25	The area around the buildings B3, B4, B5 and B6 was active with 24 bat sightings from eight surveyors during the survey, and numerous other bats heard but not seen. Most of the bat contacts were common pipistrelle although some noctules were also recorded. Bat activity was recorded from 23 minutes after sunset, and lasted until the end of the survey, 2 hours after sunset.	None.
03/07/25	The area around buildings B1 and B2 was active with 4 noctules and 29 common pipistrelle contacts. Both foraging and commuting activity was recorded. Activity lasted from 36 minutes after sunset to the end of the survey, 2 hours after sunset.	None.
22/07/25	The area around buildings B3, B4, B5 and B6 was active with 22 bat sightings between 8 surveyors. All of the bat contacts were Common pipistrelle, Soprano pipistrelle, and Noctule bats. The bats were recorded both commuting and foraging. Activity lasted from 38 minutes after sunset until the end of the survey, 2 hours after sunset.	None.
24/07/25	The area around building B8 was active with 21 bat sightings from 4 surveyors. Common pipistrelles, and Soprano pipistrelles were observed commuting and foraging, whilst Noctule bats were only observed commuting. Bat activity lasted from 31 minutes after sunset, to 1 hour 57 minutes after sunset.	None.
28/07/25	The area around building B2 was active with 44 bat sightings from 8 surveyors. Common pipistrelle, soprano pipistrelle, and noctule bats were all observed to be foraging and commuting in the area. Numerous other bats of the same species were heard but not seen. One common pipistrelle roost was identified emerging from the east side of B2. Bat activity lasted from 7 minutes after sunset, to 1 hour 53 minutes after sunset.	One common pipistrelle emerged on the north-east corner of B2. See photo 1.
19/08/25	The area around B8 was active with 10 bat sightings from 4 surveyors. Species sighted were limited to noctule and common pipistrelle, both of which were commuting and foraging. Bat activity was observed from 15 minutes after sunset to 1 hour after sunset.	None.

Survey Date	Bat Activity	Roosts (if present)
28/08/25	The area around B2 was active with 16 bats observed from 4 surveyors. Species sighted were limited to common pipistrelle and noctule, which were both foraging and commuting. Bat activity was recorded from 47 minutes after sunset to 1 hour 53 minutes after sunset.	None.

Trees

Survey Date	Trees surveyed	Bat Activity	Roosts (if present)
12/06/25	T28, T29	Around T29, 3 bats were recorded. 2 common pipistrelle and 1 noctule. Activity was recorded from 52 minutes after sunset to 1 hour and 5 minutes after sunset. Around T28, a single noctule bat was recorded commuting 38 minutes after sunset. No bats were observed emerging from any potential roost features.	None.
19/06/25	T27, T13, T19, T5	No activity was observed around T13. Around T27, 3 bats were observed commuting. This comprised 1 noctule 8 minutes after sunset, and two common pipistrelle 53 minutes after sunset. The second surveyor at T27 made 9 bat contacts, comprising common pipistrelle and noctule both commuting and foraging in the area. Activity lasted from 35 minutes after sunset to 2 hours after sunset. Around T19, no bats were observed. The area around T5 received the highest level of activity, with common pipistrelle, noctule, and soprano pipistrelle foraging continuously around the area from 36 minutes after sunset to 2 hours after sunset. No bats were observed emerging from any potential roost features.	None.

Survey Date	Trees surveyed	Bat Activity	Roosts (if present)
14/07/25	T27, T28, T29, T13	Around T27, no bat activity was recorded. At T13, a single commuting soprano pipistrelle was recorded commuting 1 hour 41 minutes after sunset. Around T29, 5 common pipistrelle contacts were made 46 minutes after sunset, 1 noctule 59 minutes after sunset, and 1 soprano pipistrelle 1 hour 40 minutes after sunset. All bats were recorded foraging. Around T28, 3 bat contacts were made. 2 common pipistrelle were observed commuting 45 minutes after sunset, and a single noctule was observed commuting 58 minutes after sunset. No bats were observed emerging from any potential roost features.	None.
21/07/25	T14, T19, T8	In the area around T8 no bats were recorded. Around T14, one common pipistrelle and one noctule were recorded continuously foraging from 18 minutes after sunset to 2 hours after sunset. Around T19, a noctule bats were recorded foraging 1 hour and 12 minutes after sunset. A single common pipistrelle was recorded 53 minutes after sunset but was heard and not seen. No bats were observed emerging from any potential roost features.	None.
07/08/25	T13, T5, T27	Around T13, common pipistrelle, soprano pipistrelle and noctule bats were recorded commuting and foraging from 19 minutes after sunset to 1 hour and 41 minutes after sunset. Around T5, 6 noctule bat passes were recorded, and one common pipistrelle was recorded foraging. Activity lasted from 21 minutes after sunset to 1 hour 58 minutes after sunset. Common pipistrelle was recorded foraging continuously for the duration of the survey around T27. No bats were observed emerging from any potential roost features.	None.
11/08/25	T19, T8	Around T19, common pipistrelle and noctule bats were recorded continuously foraging from 7 minutes after sunset to 1 hour and 50 minutes after sunset. Around T8 noctule and common pipistrelle were observed continuously foraging from 34 minutes after sunset to 1 hour and 58 minutes after sunset. No bats were observed emerging from any potential roost features.	None.

Survey Date	Trees surveyed	Bat Activity	Roosts (if present)
08/09/25	T14	Around T14, 4 common pipistrelle, 2 *Myotis* sp., and 1 soprano pipistrelle were recorded foraging in the area. Activity was recorded from 29 minutes after sunset to 1 hour and 24 minutes after sunset. No bats were observed emerging from potential roost features.	None.
22/09/25	T28, T29	No bat activity was recorded in the area around T29. Noctule bats were recorded foraging in the woodland surrounding T28. No bats were observed emerging from potential roost features.	None.

Appendix F: Static Bat Detector Results

Location	Avg. registrations per hour	Total registrations	Most recorded species (number of registrations)	Other species recorded (number of registrations)
May				
A	5.06	235	Common Pipistrelle (176)	Soprano Pipistrelle (34), Noctule (24), Brown Long-eared (1)
B	2.28	106	Common Pipistrelle (84)	Noctule (12), Soprano Pipistrelle (10)
C	6.81	316	Common Pipistrelle (268)	Soprano Pipistrelle (29), Myotis species (12), Noctule (6), Brown Long-eared (1)
D	6.46	300	Common Pipistrelle (268)	Noctule (16), Soprano Pipistrelle (14), Brown Long-eared (2)
E	11.59	538	Common Pipistrelle (494)	Soprano Pipistrelle (30), Noctule (11), Brown Long-eared (2), Myotis species (1)
F	14.09	654	Common Pipistrelle (447)	Soprano Pipistrelle (170), Noctule (37)
G	53.83	2498	Common Pipistrelle (2220)	Soprano Pipistrelle (191), Noctule (69), Myotis species (17), Brown Long-eared (1)
H	109.13	5064	Common Pipistrelle (4633)	Soprano Pipistrelle (402), Noctule (27), Myotis species (2)
I	26.98	1252	Common Pipistrelle (1137)	Myotis species (68), Noctule (37), Soprano Pipistrelle (9), Brown Long-eared (1)
J	70.17	3256	Common Pipistrelle (3033)	Soprano Pipistrelle (196), Noctule (18), Myotis species (8), Brown Long-eared (1)

Location	Avg. registrations per hour	Total registrations	Most recorded species (number of registrations)	Other species recorded (number of registrations)
K	0.52	24	Common Pipistrelle (15)	Noctule (7), Soprano Pipistrelle (2)
June				
A	0.84	34	Common Pipistrelle (22)	Soprano Pipistrelle (10), Noctule (1), Brown Long-eared (1)
B	0.91	37	Common Pipistrelle (33)	Soprano Pipistrelle (3), Myotis species (1)
C	7.82	318	Common Pipistrelle (289)	Soprano Pipistrelle (23), Noctule (3), Myotis species (3)
D	46.08	1874	Common Pipistrelle (1666)	Soprano Pipistrelle (204), Noctule (3), Myotis species (1)
E	1.28	52	Brown Long-eared (26)	Common Pipistrelle (18), Soprano Pipistrelle (4), Noctule (2), Myotis (2)
F	10.84	441	Common Pipistrelle (431)	Soprano Pipistrelle (8), Noctule (1), Brown Long-eared (1)
G	1.01	41	Common Pipistrelle (41)	Noctule (6), Soprano Pipistrelle (3), Brown Long-eared (2)
H	22.96	934	Common Pipistrelle (574)	Soprano Pipistrelle (354), Noctule (6)
I	3.84	156	Common Pipistrelle (143)	Soprano Pipistrelle (6), Noctule (5), Brown Long-eared (1), Myotis species (1)
J	0.96	39	Common Pipistrelle (28)	Noctule (6), Soprano Pipistrelle (4), Brown Long-eared (1)
K	0.07	3	Common Pipistrelle (1)	Soprano Pipistrelle (1), Noctule (1)
July				

Location	Avg. registrations per hour	Total registrations	Most recorded species (number of registrations)	Other species recorded (number of registrations)
A	10.43	438	Common Pipistrelle (285)	Soprano Pipistrelle (105), Noctule (41), Nyctalus species (3), Myotis species (3)
C	6.95	292	Common Pipistrelle (221)	Soprano Pipistrelle (50), Noctule (14), Nyctalus species (3), Myotis species (3), Brown Long-eared (1)
D	21.04	528	Common Pipistrelle (428)	Noctule (420), Soprano Pipistrelle (40), Myotis species (13)
E	20.52	862	Common Pipistrelle (354)	Noctule (75), Soprano Pipistrelle (18), Myotis species (7)
G	76.57	3217	Common Pipistrelle (2767)	Soprano Pipistrelle (289), Noctule (147), Nyctalus species (8), *Myotis* species (4), Leisler's (2)
H	133.00	5588	Common Pipistrelle (3879)	Soprano Pipistrelle (1550), Noctule (152), Nyctalus species (5), Myotis (1), Leisler's (1)
I	49.41	2076	Common Pipistrelle (1774)	Noctule (166), Soprano Pipistrelle (127), Nyctalus species (9), Myotis species (2), Brown long-eared (1),
J	53.27	2238	Common Pipistrelle (1928)	Noctule (203), Soprano Pipistrelle (58), Nyctalus species (10), Myotis species (3)
K	6.52	274	Noctule (233)	Common Pipistrelle (37), Soprano Pipistrelle (4)
August				
A	11.17	550	Common Pipistrelle (278)	Soprano Pipistrelle (226), Noctule (30), Myotis species (12), Brown Long-eared (4)

Location	Avg. registrations per hour	Total registrations	Most recorded species (number of registrations)	Other species recorded (number of registrations)
B	9.72	479	Common Pipistrelle (255)	Soprano Pipistrelle (203), Noctule (12), Myotis species (7), Nyctalus species (1), Brown Long-eared (1)
C	6.05	298	Common Pipistrelle (207)	Soprano Pipistrelle (64), Noctule (18), Myotis Species (5), Brown Long-eared (4)
D	6.11	301	Common Pipistrelle (223)	Noctule (34), Soprano Pipistrelle (33), Myotis Species (9), Brown Long-eared (2)
E	5.68	280	Common Pipistrelle (188)	Soprano Pipistrelle (48), Noctule (33), Myotis species (2), Brown Long-eared (2)
F	11.49	566	Common Pipistrelle (470)	Noctule (52), Soprano Pipistrelle (36), Myotis species (7), Brown Long-eared (1)
G	38.29	1886	Common Pipistrelle (1750)	Soprano Pipistrelle (66), Noctule (67), Brown Long-eared (2), Myotis species (1)
H	87.18	4294	Common Pipistrelle (4108)	Noctule (100), Soprano Pipistrelle (77), Nyctalus species (3), Brown Long-eared (3), *Myotis* species (3)
I	25.80	1271	Common Pipistrelle (1037)	Noctule (123), Soprano Pipistrelle (59), Myotis species (48), Brown Long-eared (3), Nyctalus (1)
J	9.97	491	Common Pipistrelle (334)	Noctule (115), Soprano Pipistrelle (32), *Myotis* species (6), Brown Long-eared (3), Nyctalus species (1)
K	4.97	245	Common Pipistrelle (167)	Noctule (71), Soprano Pipistrelle (7)

Location	Avg. registrations per hour	Total registrations	Most recorded species (number of registrations)	Other species recorded (number of registrations)
September				
A	1.72	101	Soprano Pipistrelle (50)	Common Pipistrelle (32), Noctule (12), Brown Long-eared (3), Myotis species (3), Nyctalus (1)
B	4.27	250	Common Pipistrelle (187)	Soprano Pipistrelle (45), Myotis species (9), Noctule (6), Brown Long-eared (2), Nyctalus species (1)
C	1.36	96	Common Pipistrelle (56)	Noctule (21), Soprano Pipistrelle (9), Myotis species (6), Brown Long-eared (4)
D	0.50	29	Common Pipistrelle (10)	Noctule (8), Soprano Pipistrelle (4), Myotis species (4), Brown Long-eared (3)
E	1.25	73	Common Pipistrelle (36)	Soprano Pipistrelle (13), Noctule (11), Brown Long-eared (9), Myotis species (3), Nyctalus species (1)
F	1.98	116	Common Pipistrelle (86)	Soprano Pipistrelle (13), Myotis species (10), Noctule (7)
G	6.39	374	Common Pipistrelle (349)	Soprano Pipistrelle (9), Myotis species (7), Noctule (6), Brown Long-eared (3)
H	31.44	1841	Common Pipistrelle (1574)	Soprano Pipistrelle (257), Noctule (4), Myotis species (3), Brown Long-eared (2), Nathusius' pipistrelle (1)
I	1.66	97	Common Pipistrelle (80)	Soprano Pipistrelle (12), Noctule (3), Myotis species (2)
J	6.54	383	Common Pipistrelle (337)	Soprano Pipistrelle (30), Noctule (7), Brown Long-eared (6), Myotis species (3)

Location	Avg. registrations per hour	Total registrations	Most recorded species (number of registrations)	Other species recorded (number of registrations)
K	0.24	14	Noctule (7)	Common Pipistrelle (6), Soprano Pipistrelle (1)
October				
A	1.45	40	Soprano Pipistrelle (33)	Common Pipistrelle (1), Noctule (2), Myotis species (2), Brown Long-eared (2)
B	0.53	36	Common Pipistrelle (23)	Soprano Pipistrelle (2), Noctule (7), Myotis species (1), Brown Long-eared (3)
C	0.25	17	Common Pipistrelle (14)	Soprano Pipistrelle (2), Myotis species (1)
D	0.15	10	Common Pipistrelle (6)	Soprano Pipistrelle (3), Noctule (1)
E	0.29	20	Common Pipistrelle (8)	Soprano Pipistrelle (3), Noctule (2), Myotis species (2), Brown Long-eared (5)
F	1.11	76	Soprano Pipistrelle (37)	Common Pipistrelle (36), Noctule (2), Myotis species (1)
G	0.20	14	Common Pipistrelle (8)	Soprano Pipistrelle (4), Brown Long-eared (2)
H	7.16	489	Common Pipistrelle (442)	Soprano Pipistrelle (46), Brown Long-eared (1)
I	1.26	86	Common Pipistrelle (72)	Soprano Pipistrelle (11), Noctule (2), Brown Long-eared (1)
J	0.23	16	Brown Long-eared (6)	Soprano Pipistrelle (5), Common Pipistrelle (3), Noctule (1), Nyctalus species (1)

Location	Avg. registrations per hour	Total registrations	Most recorded species (number of registrations)	Other species recorded (number of registrations)
K	0.06	4	Noctule (3)	Common Pipistrelle (1)

Appendix G: Nighttime Bat Walkover Result

Route 1 – Flightline Survey (Figure 5a)

C = Commuting, F = Foraging, NV = Non-visual

Ref	Time	Species	No. of bats	Comments	Behaviour	Date
May						
FL1c	21:38	Common Pipistrelle	2	NV	C	08.05.25
1	21:38	Common Pipistrelle	1		C	
June						
2	22:05	Common Pipistrelle	1		C	04.06.25
3	22:08	Common Pipistrelle	1		C	
4	22:11	Noctule	1		C	
5	22:11	Common Pipistrelle	3		C	
FL1c	22:20	Common Pipistrelle	1	NV	C	
6	22:21	Common Pipistrelle	5		C	
7	22:24	Common Pipistrelle	3		C	
8	22:24	Noctule	1		C	
9	22:27	Common Pipistrelle	2		C	
July						
FL1a	22:06	Soprano Pipistrelle	1	NV	C	09.07.25
FL1a	22:13	Soprano Pipistrelle	1	NV	C	

Ref	Time	Species	No. of bats	Comments	Behaviour	Date
FL1a	22:15	Soprano Pipistrelle	1	NV	C	
FL1a	22:15	Common Pipistrelle	1	NV	C	
10	22:17	Common Pipistrelle	1	Flew from trees and back into top of trees	C	
FL1a	22:19	Common Pipistrelle	3	NV	C	
11	22:20	Common Pipistrelle	3	3 bats with same flight path	C	
12	22:22	Soprano Pipistrelle	1		C	
13	22:28	Common Pipistrelle	1	Flew over railway into trees	C	
FL1a	22:28	Common Pipistrelle	2	NV	C	
August						
FL1b	21:14	Noctule	1	NV	C	06.08.25
FL1a	21:15	Common Pipistrelle	1	NV	C	
FL1b	21:18	Common Pipistrelle	1	NV	C	
14	21:19	Common Pipistrelle	1		F	
15	21:23	Soprano Pipistrelle	1		F	
16	21:26	Soprano Pipistrelle	1		F	
17	21:27	Common Pipistrelle	1		C	

Ref	Time	Species	No. of bats	Comments	Behaviour	Date
FL1a	21:31	Common Pipistrelle	1	NV	C	
18	21:32	Common Pipistrelle	1		F	
19	21:33	Common Pipistrelle	1		F	
FL1a	21:36	Soprano Pipistrelle	1	NV	C	
FL1b	21:42	Noctule	1	NV	C	
20	21:47	Common Pipistrelle	1		C	
FL1a	21:54	Common Pipistrelle	1	NV	C	
September						
FL1a/ FL1b	20:03	Noctule	1	NV	C	03.09.25
FL1a	20:18	Common Pipistrelle	1	NV	C	
21	20:26	Common Pipistrelle	1		C	
FL1b	20:34	Common Pipistrelle	1	NV	C	
October						
FL1c	18:53	Noctule	1	NV	C	01.10.25
22	19:02	Noctule	1		C	
FL1c	19:05	Soprano Pipistrelle	1	NV	C	
23	19:11	Common Pipistrelle	1		C	
FL1c	19:33	Common Pipistrelle	1	NV	C	

Route 1 – Walked Transect (Figure 5b)

Ref	Time	Species	No. of bats	Comments	Behaviour
May					
1	22:00	Common Pipistrelle	1	NV	C
2	22:35	Myotis Species	1	NV	C
3	23:02	Soprano Pipistrelle	2	Multiple bats, also foraging	F
3	23:03	Common Pipistrelle	2	Multiple bats, also foraging	F
June					
4	22:24	Common Pipistrelle	1	NV	F
5	22:56	Soprano Pipistrelle	1	NV	F
6	23:01	Common Pipistrelle	1	NV	F
7	23:01	Common Pipistrelle	1	NV	F
8	23:18	Common Pipistrelle	1	NV	F
9	23:01	Common Pipistrelle	1	NV	F
10	23:21	Soprano Pipistrelle	1	NV	F
11	23:40	Common Pipistrelle	1	NV	F
12	23:44	Common Pipistrelle	1	NV	F
13	23:46	Common Pipistrelle	1	NV	F

Ref	Time	Species	No. of bats	Comments	Behaviour
14	23:52	Common Pipistrelle	1	NV	F
15	00:10	Common Pipistrelle	1	NV	F
16	00:10	Common Pipistrelle	1	NV	F
17	00:18	Common Pipistrelle	1	NV	F
July					
18	22:49	Soprano Pipistrelle	1	NV	F
19	22:49	Common Pipistrelle	1	NV	F
20	22:53	Common Pipistrelle	1	NV	F
21	22:56	Soprano Pipistrelle	1	NV	F
22	22:56	Soprano Pipistrelle	1	NV	F
23	23:06	Soprano Pipistrelle	1	NV	F
24	23:12	Soprano Pipistrelle	1	NV	F
25	23:16	Common Pipistrelle	1	NV	F
26	23:23	Soprano Pipistrelle	1	NV	F
27	23:38	Common Pipistrelle	1	NV	F
28	23:40	Common Pipistrelle	2	NV	F

Ref	Time	Species	No. of bats	Comments	Behaviour
29	23:48	Soprano Pipistrelle	1	NV	F
30	23:48	Common Pipistrelle	1	NV	F
31	23:51	Common Pipistrelle	1	NV	F
32	23:55	Common Pipistrelle	1	NV	F
33	00:00	Common Pipistrelle	1	NV	F
34	00:05	Noctule	1	NV	F
35	00:08	Common Pipistrelle	1	NV	F
36	00:19	Common Pipistrelle	1	NV	F
49	00:11	Common Pipistrelle	1	NV	F
August					
37	22:11	Soprano Pipistrelle	1	NV	F
38	22:12	Myotis Species	1	NV	F
39	22:29	Myotis Species	1	NV	F
40	23:00	Common Pipistrelle	1	NV	F
41	23:01	Common Pipistrelle	1	NV	F
42	23:08	Common Pipistrelle	1	NV	F
43	23:11	Common Pipistrelle	1	NV	F

Ref	Time	Species	No. of bats	Comments	Behaviour
44	23:15	Common Pipistrelle	1	NV	F
45	23:19	Common Pipistrelle	1	NV	F
46	23:24	Common Pipistrelle	1	NV	F
47	23:25	Myotis Species	1	NV	F
48	23:33	Common Pipistrelle	1	NV	F
66	23:33	Myotis Species	1	NV	F
September					
50	21:04	Common Pipistrelle	1	NV	F
51	21:29	Common Pipistrelle	1	NV	F
52	21:39	Noctule	1	NV	F
53	21:47	Common Pipistrelle	1	NV	F
54	22:29	Common Pipistrelle	1	NV	F
55	22:31	Soprano Pipistrelle	1	Continuous	F
56	22:33	Soprano Pipistrelle	1	NV	F
October					
57	19:54	Common Pipistrelle	1		F
58	20:05	Common Pipistrelle	1		F

Ref	Time	Species	No. of bats	Comments	Behaviour
59	20:18	Common Pipistrelle	1		F
60	20:35	Common Pipistrelle	1		F
61	20:48	Common Pipistrelle	1		F
62	21:00	Common Pipistrelle	1		F
63	21:21	Soprano Pipistrelle	1		F
64	21:28	Common Pipistrelle	1		F
65	21:33	Soprano Pipistrelle	1		F

Route 2 – Flightline Survey (6a)

Ref	Time	Species	No. of bats	Comments	Behaviour
May					
FL2a	21:44	Pipistrelle Species	1	NV	N/A
June					
1	22:03	Soprano Pipistrelle	1	Foraging along hedgerow	F
FL2d	22:12	Common Pipistrelle	1	NV	F
2	22:13	Common Pipistrelle	1	Continuous hedgerow foraging	F
FL2d	22:15	Soprano Pipistrelle	1	NV	F

Ref	Time	Species	No. of bats	Comments	Behaviour
3	22:18	Soprano Pipistrelle	1	Continuous foraging	F
4	22:20	Common Pipistrelle	1	Continuous foraging	F
FL2d	22:25	Soprano Pipistrelle	1	NV	F
5	22:28	Common Pipistrelle	2	Continuous foraging	F
6	22:29	Soprano Pipistrelle	1		C
July					
7	22:09	Noctule	1	Caught something across field	F
FL2a	22:10	Noctule	1	NV	C
FL2a	22:18	Noctule	1	NV	C
8	22:19	Noctule	1		F
FL2b	22:21	Noctule	1	NV	F
9	22:22	Noctule	1		F
10	22:24	Noctule	Multiple	Constant activity until 22:37	F
11	22:28	Noctule	1		F
August					
12	21:26	Common Pipistrelle	1		F
13	21:26	Noctule	1		F
FL2c	21:37	Noctule	1	NV	F
FL2d	21:38	Noctule	1	NV	F
FL2c	21:39	Noctule	1	NV	F

Ref	Time	Species	No. of bats	Comments	Behaviour
FL2c	21:41	Common Pipistrelle	1	NV	F
FL2d	21:46	Common Pipistrelle	1	NV	C
FL2c	21:48	Soprano Pipistrelle	1	NV	F
FL2d	21:50	Soprano Pipistrelle	1	NV	C
FL2c	21:50	Soprano Pipistrelle	2	NV	F
FL2c	21:51	Common Pipistrelle	1	NV	F
FL2c	21:53	Noctule	1	NV	F
FL2c	21:54	Common Pipistrelle	2	NV	F
October					
FL2c	19:03	Noctule	1		C
FL2d	19:10	Soprano Pipistrelle	1	NV, brief pass likely commuting	C
FL2c	19:12	Common Pipistrelle	1	V. faint call	C
FL2d	19:14	Soprano Pipistrelle	1	Faint, NV	F
FL2c	19:16	Common Pipistrelle	1	V. faint	C
FL2c	19:23	Soprano Pipistrelle	1	V. faint	C
14	19:23	Common Pipistrelle	1	Alongside hedgerow - 2m high and site side	F
15	19:31	Soprano Pipistrelle	1	Along Hedgerow	F

Ref	Time	Species	No. of bats	Comments	Behaviour
FL2d	19:33	Common Pipistrelle	1		F

Route 2 – Walked Transect (6b)

Ref	Time	Species	No. of bats	Behaviour	Comments
May					
1	22:08	Common Pipistrelle	1	C	
2	22:09	Common Pipistrelle	1	C	
June					
3	22:45	Myotis Species	1	F	
July					
4	21:16	Soprano Pipistrelle	1	F	
5	23:20	Common Pipistrelle	1	F	
6	23:20	Soprano Pipistrelle	1	F	
7	23:26	Common Pipistrelle	2	F	
8	23:28	Soprano Pipistrelle	1	F	
9	23:30	Common Pipistrelle	1	F	
10	23:33	Common Pipistrelle	1	F	
11	23:38	Common Pipistrelle	1	F	
12	23:38	Common Pipistrelle	1	F	

Ref	Time	Species	No. of bats	Behaviour	Comments
13	23:41	Soprano Pipistrelle	1	F	
14	23:41	Common Pipistrelle	1	F	
15	23:46	Common Pipistrelle	1	F	
16	23:49	Common Pipistrelle	1	F	
August					
17	22:08	Common Pipistrelle	1	F	
18	22:12	Common Pipistrelle	1	C	
19	22:18	Common Pipistrelle	1	F	
20	22:30	Common Pipistrelle	1	F	
21	22:36	Common Pipistrelle	1	F	
22	22:42	Soprano Pipistrelle	1	F	
23	22:58	Common Pipistrelle	1	C	
24	23:06	Common Pipistrelle	1	F	
25	23:11	Common Pipistrelle	1	F	
26	23:17	Common Pipistrelle	1	F	
27	23:22	Common Pipistrelle	1	C	
28	23:24	Common Pipistrelle	1	C	
September					

Ref	Time	Species	No. of bats	Behaviour	Comments
29	21:38	Common Pipistrelle	1	F	
30	21:47	Common Pipistrelle	1	F	
October					
31	20:31	Common Pipistrelle	1	F	
32	20:35	Common Pipistrelle	1	F	
33	20:55	Common Pipistrelle	1	F	
34	20:55	Soprano Pipistrelle	1	F	

Route 3 – Flightlines Survey (Figure 7a)

Ref	Time	Species	No. of bats	Comments	Behaviour
May					
1	21:23	Noctule	1		C
FL3a	21:40	Common Pipistrelle	1	NV	C
FL3a	21:53	Common Pipistrelle	1	NV	C
June					
2	22:10	Common Pipistrelle	1		C
FL3d	22:12	Common Pipistrelle	1	NV	C
3	22:14	Common Pipistrelle	2	Multiple passes from 2 bats	F
4	22:18	Common Pipistrelle	1		C

Ref	Time	Species	No. of bats	Comments	Behaviour
FL3d	22:21	Common Pipistrelle	1		C
FL3c	22:27	Common Pipistrelle	1	NV	F
July					
5	21:59	Noctule	Multiple passes	Continuous foraging across field	F
6	22:02	Noctule	Multiple passes	Continuous circles over field	F
7	22:04	Noctule	Multiple passes	Foraging across field	F
8	22:05	Noctule	Multiple passes	Foraging across field	F
FL3b	22:06	Noctule	1	NV	C
9	22:07	Noctule	Multiple passes	Flying across field	F
10	22:07	Noctule	1		F
FL3b	22:10	Noctule	1	NV	C
11	22:11	Noctule	Multiple passes	Flying across field	F
12	22:13	Noctule	Multiple passes	Flying across field	F
13	22:17	Noctule	1		C
14	22:18	Noctule	Multiple passes	Flying across field	F
15	22:22	Noctule	1		C
16	22:26	Noctule	1		F
FL3b	22:26	Noctule	1	NV	C
FL3b	22:29	Noctule	2	NV	C

Ref	Time	Species	No. of bats	Comments	Behaviour
August					
17	21:18	Noctule	1		F
FL3d	21:21	Noctule	1	Continuous for 30+ seconds	F
18	21:23	Noctule	2		F
19	21:25	Noctule	1	Passed overhead N-S	C
20	21:25	Noctule	4	Continuous activity until 21:38	F
21	21:28	Noctule	1		C
22	21:30	Noctule	1	Continuous circling of crop field	F
23	21:31	Soprano Pipistrelle	1		C
24	21:33	Noctule	2	2 noctules circling field continuously	F
25	21:38	Soprano Pipistrelle	1		C
26	21:39	Noctule	1		C
27	21:41	Noctule	1		F
28	21:42	Common Pipistrelle	1	Foraging until 21:56	F
29	21:43	Common Pipistrelle	1		C
30	21:44	Noctule	1		F
31	21:47	Noctule	1		F
32	21:48	Noctule	1	Flew into barn next to flightline	F
FL3d	21:50	Common Pipistrelle	2		C

Ref	Time	Species	No. of bats	Comments	Behaviour
33	21:51	Common Pipistrelle	1		F
FL3c	21:52	Noctule	1	NV	F
FL3c	21:53	Soprano Pipistrelle	1	NV	F
FL3d	21:55	Common Pipistrelle	1	NV	C
September					
34	20:37	Common Pipistrelle	1	Continuous foraging and social calls	F
35	20:41	Common Pipistrelle	2	2 pips foraging along hedgerow	F
October					
36	19:11	Soprano Pipistrelle	1		C
FL3d	19:18	Common Pipistrelle	1	NV	C
37	19:21	Common Pipistrelle	1	Continuous activity from 19:21-19:26	C
38	19:21	Common Pipistrelle	1	Continuously around building from 19:21-19:26	C
39	19:27	Common Pipistrelle	Multi	Social calling. From 19:27-19:35	F
40	19:27	Common Pipistrelle	1		C
FL3c	19:33	Common Pipistrelle	1		C
FL3c	19:38	Common Pipistrelle	1		C
FL3d	19:39	Common Pipistrelle	Unknown		F

Ref	Time	Species	No. of bats	Comments	Behaviour
FL3c	19:44	Common Pipistrelle	1		C

Route 3 – Walked Transect (Figure 7b)

Ref	Time	Species	No. of bats	Behaviour
May				
1	23:06	Common Pipistrelle	1	F
June				
2	22:47	Common Pipistrelle	1	F
3	22:49	Common Pipistrelle	1	F
July				
4	22:56	Common Pipistrelle	1	C
5	22:58	Common Pipistrelle	1	C
6	23:04	Common Pipistrelle	1	F
7	23:06	Common Pipistrelle	1	C
8	23:14	Common Pipistrelle	3	F
9	23:21	Common Pipistrelle	1	F
10	23:25	Common Pipistrelle	1	F
11	23:28	Common Pipistrelle	1	F
12	23:32	Common Pipistrelle	1	F

Ref	Time	Species	No. of bats	Behaviour
13	23:35	Common Pipistrelle	1	F
August				
14	22:21	Common Pipistrelle	1	F
15	22:25	Common Pipistrelle	1	F
16	22:27	Common Pipistrelle	1	F
17	22:40	Noctule	1	F
18	22:43	Common Pipistrelle	1	F
19	22:49	Noctule	1	F
20	23:04	Common Pipistrelle	1	F
21	23:04	Soprano Pipistrelle	1	F
22	23:04	Myotis Species	1	F
23	23:07	Common Pipistrelle	1	F
24	23:09	Common Pipistrelle	1	F
25	23:12	Common Pipistrelle	1	F
26	23:15	Common Pipistrelle	1	F
27	23:18	Common Pipistrelle	1	F
28	23:20	Common Pipistrelle	1	F
29	23:25	Common Pipistrelle	1	F
30	23:27	Common Pipistrelle	1	F

Ref	Time	Species	No. of bats	Behaviour
September				
31	21:34	Common Pipistrelle	1	F
October				
32	20:12	Soprano Pipistrelle	1	C
33	20:31	Common Pipistrelle	1	F
34	20:31	Soprano Pipistrelle	1	F
35	20:42	Common Pipistrelle	1	C
36	20:43	Common Pipistrelle	1	C
37	20:49	Common Pipistrelle	1	C
38	20:57	Common Pipistrelle	1	F
39	21:01	Common Pipistrelle	1	F
40	21:29	Soprano Pipistrelle	1	F

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