

Land off Tattenhall Road, Tattenhall

Bat Roost Survey Technical Report

Prepared For: Gladman Developments

Document Reference: 11425.006

October 2026

Version 2.0

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Document Title	Bat Roost Survey Technical Report
Document Ref	11425.006
Version	1.0
Prepared For	Gladman Developments

Author	SV
First Issue Date	September 2026
Checked	ACP
Approved	ACP

Amendment History				
Version	Date	Modified	Checked/ Approved	Purpose of Issue
1.0	30/09/26	SV	AP/EJS	For Client Approval
2.0	1/10/26	RR	EJS	Minor formatting corrections

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1.0 Introduction

1.1 The Environment Partnership (TEP) was commissioned by Gladman Developments in April 2026 to undertake an Ecological Impact Assessment (EcIA) to support an outline planning application for the construction of up to 110 residential dwellings with associated infrastructure and soft landscaping on the settlement edge of Tattenhall, Cheshire (hereafter referred to as 'the site').

1.2 A suite of bat surveys was completed to inform the EcIA. This technical report is produced to provide detail of the bat roost surveys completed in support of the EcIA. It is not intended to be stand alone, it should be read in conjunction with:

- Ecological Desk Study (TEP Ref 10797.03.0010)
- Bat Activity Survey technical report (TEP Ref 11425.004)
- Ecological Impact Assessment (TEP Ref 11425.005).

Purpose of this Document

1.3 This technical report has the following objectives:

- Detail the methods of the bat roost surveys conducted;
- Detail the results of the bat roost surveys and to present these results to aid interpretation and assessment in the EcIA.

Site Description

1.4 The site is located in Tattenhall, Cheshire. The location of the site is depicted by the red line shown in Figure 1. The approximate central grid reference of the site is SJ 48887 59319.

1.5 The site comprises an area of modified grassland which is in use as a grazing paddock for horses. The site is bounded by hedgerows and trees with Keys Brook directly to the south of the site.

1.6 The wider area is predominantly rural comprising arable and grazing fields to the north, east and west with the outskirts of the village of Tattenhall south of Key Brook. The city of Chester is situated approximately 11km northwest.



Figure 1: Site location in the context of the wider landscape

2.0 Methods

2.1 The following bat surveys were undertaken in accordance with the Bat Conservation Trust (BCT) Good Practice Guidelines (Collins, 2023)[1]. Detailed data collation, field survey and data analysis methods are provided at Appendix A.

Ecological Desk Study

2.2 Information regarding historic bat species records, protected habitats and protected sites was collated as part of an Ecological Desk Study (TEP Ref: 10797.03.001) completed by TEP in November 2026. Desk Study data provided by Biodiversity Information Centre for Cheshire, Halton, Warrington and Wigan (RECORD) included species records of the past decade within a 2km minimum radius of the site. Designated sites within 2km to 10km were also reviewed to inform this technical report.

Data Constraints

2.3 An absence of records does not indicate the absence of protected species from the search area. Furthermore, the species investigated are mobile and will move into and out of areas over time. For these reasons a precautionary approach has been taken in the review of desk study data.

2.4 Where there is any doubt, except where specifically noted, species are assumed to be present, and the impact assessment assumes a precautionary higher level of significance (within the spectrum of possible significance).

Roost Surveys

Preliminary Roost Assessment - Structures

2.5 A daytime Preliminary Roost Assessment (PRA) of structures within the site, including external and internal survey, was carried out on two structures, stable buildings B1 and B2 on 26th March 2026 by a qualified TEP ecologist and health and safety assistant.

2.6 Following the PRA, structures were categorised with reference to their bat roost habitat suitability (high, moderate, low, negligible or none) as determined by their location, characteristics and potential roost features (PRFs).

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

Survey Constraints

2.7 The PRA was undertaken during suitable weather conditions and therefore there was no significant constraint to the external and internal inspections. Poor light conditions can cause PRFs to be missed, wind can blow away external signs e.g., droppings and rain can wash away droppings and make staining around roost entrances difficult to distinguish.

2.8 Evidence of potential bat roost presence such as urine splashes, fur-oil staining, scratch marks, odour, bat-fly Nycteribiid species pupal cases and feeding remains cannot be relied upon in isolation for confirmation of bat roosting. Bats can also leave no visible sign of their presence, particularly where there are hidden voids or crevices. Overall suitability of PRFs and surrounding habitats was therefore assessed during the PRA, rather than relying on signs of roosting to ensure proportional further surveys were undertaken to confirm presence/ likely absence of bat roosts within structures.

Presence/ Likely Absence Surveys - Structures

2.9 Structures B1 and B2 were identified during the PRA as having suitability for bat roosting. These structures were therefore subject to nocturnal presence/ likely absence emergence surveys in accordance with their categorisation (high, moderate or low bat roost habitat suitability).

2.10 Surveys were led by qualified TEP ecologists, supported by TEP bat survey trained assistant ecologists and night vision aids (NVAs). A summary of structures surveyed, number of surveyors/ vantage points, number of survey visits and dates of survey are provided in Table 1, in addition to survey times and weather conditions. Surveyor vantage points and NVA locations used to gain coverage of the structure's aspects/ elevations and PRFs identified during the PRA are shown on the TEP Drawing G11425.003.

Table 1: Summary of structures surveyed, number of surveyors/ vantage points, number of survey visits and survey dates.

Structure Ref.	Vantage Points / Surveyors	Survey Visit No.	Survey Dates	Sunset Time	Timings	Weather Conditions at Start/End				Moon Phase[2]
						Temp. (°C)	Rain	Cloud[3]	Wind[4]	
B1	1/1	1	30/07/26	21:08	Start: 20:53	18	0	1	0	Waning Gibbous

[2] Moon Phase: New Moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Third Quarter, Waning Crescent.
[3] Cloud cover is reported in oktas or eighths (i.e., 0 oktas represent the complete absence of cloud, 1 okta cloud cover of 1 eighth or less, and so on to 8 oktas which represents full cloud cover), with the additional convention that 9 oktas represent sky obscured by fog or mist.
[4] Wind strength is reported using the Beaufort Scale of Wind Force, this scale runs from 0 to 12, information on the conditions denoted by scores are as follows: 0 – Calm (vertical smoke); 1 - Light Air (slight smoke drift); 2 -

Structure Ref.	Vantage Points / Surveyors	Survey Visit No.	Survey Dates	Sunset Time	Timings	Weather Conditions at Start/End				Moon Phase[2]
						Temp. (°C)	Rain	Cloud[3]	Wind[4]	
					Finish: 22:38	13	0	1	0	Waning Gibbous
B2	2/2	1	30/07/26	21:08	Start: 20:53	18	0	1	0	Waning Gibbous
					Finish: 22:38	13	0	1	0	Waning Gibbous

Survey Constraints

2.11 There were no constraints affecting the nocturnal presence/ likely absence emergence surveys.

Preliminary Roost Assessment - Trees

2.12 A Ground Level Tree Assessment (GLTA) of trees within and immediately adjacent to the site was carried out on 26th March 2026 by a qualified TEP ecologist.

2.13 Following the GLTA, trees were categorised with reference to their bat roost habitat suitability (PRF-M, PRF-I or None) as determined by their characteristics and potential roost features (PRFs).

Survey Constraints

2.14 The GLTA was undertaken during suitable weather conditions and therefore there was no significant constraint to the survey. Poor light conditions can cause PRFs to be missed, wind can blow away external signs e.g., droppings and rain can wash away droppings and make staining around roost entrances difficult to distinguish.

2.15 Optimal conditions for identifying tree PRFs are when trees are not in leaf. The recommended survey window for GLTA is between December and March (inclusive).

2.16 There were no constraints affecting the GLTA surveys.

Presence/ Likely Absence Surveys - Trees

2.17 Of six trees identified as having PRF-M status in the GLTA, three trees were identified as potentially requiring removal (T2, T18 and T21) and therefore required further survey. These trees were not suitable to be surveyed via PRF inspection surveys and therefore were subject to nocturnal presence/ likely absence emergence surveys.

Light Breeze (leaves gently rustle); 3 - Gentle Breeze (small twigs constantly move); 4 - Moderate Breeze (small branches begin to move) and 5 - Fresh breeze (small trees in leaf begin to sway).

2.18 Surveys were led by qualified TEP ecologists, supported by TEP bat survey trained assistant ecologists and night vision aids (NVAs). A summary of trees surveyed, number of surveyors/ vantage points, dates of survey, survey times and weather conditions are provided in Table 3. Surveyor vantage points and NVA locations used to gain coverage of the tree aspects and PRFs identified during the GLTA are shown on the TEP Drawing G11425.006.

Table 2: Summary of trees surveyed, number of surveyors/ vantage points and survey dates.

Tree Ref.	No. of Surveyors/ Vantage Points	Survey Visit No.	Survey Dates	Sunset Time	Timings	Weather Conditions at Start/End				Moon Phase[5]
						Temp. (°C)	Rain	Cloud[6]	Wind[7]	
T2	2/2	1	29/07/26	21:10	Start: 20:55	21	0	5	2	Full Moon
					Finish: 22:40	20	0	7	3	Full Moon
T18	1/1	1	29/07/26	21:10	Start: 20:55	21	0	5	2	Full Moon
					Finish: 22:40	20	0	7	3	Full Moon
T21	1/1	1	29/07/26	21:10	Start: 20:55	21	0	5	2	Full Moon
					Finish: 22:40	20	0	7	3	Full Moon
T2	2/2	2	20/08/26	20:27	Start: 20:12	16	0	8	0	Waxing Gibbous
					Finish: 21:57	15	0	7	0	Waxing Gibbous
T18	1/1	2	20/08/26	20:27	Start: 20:12	16	0	8	0	Waxing Gibbous
					Finish: 21:57	15	0	7	0	Waxing Gibbous
T21	1/1	2	20/08/26	20:27	Start: 20:12	16	0	8	0	Waxing Gibbous
					Finish: 21:57	15	0	7	0	Waxing Gibbous
T2	2/2	3	10/09/26	19:40	Start: 19:25	18	0	5	1	New Moon

[5] Moon Phase: New Moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Third Quarter, Waning Crescent.
[6] Cloud cover is reported in oktas or eighths (i.e., 0 oktas represent the complete absence of cloud, 1 okta cloud cover of 1 eighth or less, and so on to 8 oktas which represents full cloud cover), with the additional convention that 9 oktas represent sky obscured by fog or mist.
[7] Wind strength is reported using the Beaufort Scale of Wind Force, this scale runs from 0 to 12, information on the conditions denoted by scores are as follows: 0 – Calm (vertical smoke); 1 - Light Air (slight smoke drift); 2 - Light Breeze (leaves gently rustle); 3 - Gentle Breeze (small twigs constantly move); 4 - Moderate Breeze (small branches begin to move) and 5 - Fresh breeze (small trees in leaf begin to sway).

Tree Ref.	No. of Surveyors/ Vantage Points	Survey Visit No.	Survey Dates	Sunset Time	Timings	Weather Conditions at Start/End				Moon Phase[5]
						Temp. (°C)	Rain	Cloud[6]	Wind[7]	
					Finish: 21:10	16	0	6	1	New Moon
T18	1/1	3	10/09/26	19:40	Start: 19:25	18	0	5	1	New Moon
					Finish: 21:10	16	0	6	1	New Moon
T21	1/1	3	10/09/26	19:40	Start: 19:25	18	0	5	1	New Moon
					Finish: 21:10	16	0	6	1	New Moon

Survey Constraints

2.19 There were no constraints affecting the nocturnal presence/ likely absence emergence surveys.

Data Analysis and Species Identification

2.20 Sonogram analysis of raw data files from detectors was undertaken using the most current version of Kaleidoscope software (currently V5.3) by qualified TEP ecologists.

2.21 NVA data was reviewed by qualified TEP ecologists, supported by TEP bat survey trained assistant ecologists.

Data Constraints

2.22 Where insufficient call characteristics are available, bat contacts are recorded as an unidentified bat. The proportion of unidentified bat contacts are tallied for each data set and should unidentified bat contacts comprise more than 1% of the data set, a second quality assurance review of the data is undertaken.

2.23 Some genus groups (such as *Myotis* species) can be difficult to determine the specific species due to similar styles of calls. In addition, it can be difficult to determine species or even genus in some circumstances due to partial calls or other noises such as passing cars or rain or wind distorting the data. In these cases when it not possible to identify a bat call even to genus, it is labelled as an unknown bat. If the genus can be identified but not the species, the call is labelled only by the genus group.

2.24 *Myotis* species have overlapping call characteristics, and it is therefore not possible to identify these bats to species level with good confidence (at least 80%). *Myotis* species data represent a small proportion of the activity recorded and therefore for

the purposes of meaningful data interrogation, *Myotis* species have generally been grouped. Where possible, individual *Myotis* species are identified.

2.25 Detectability of some bat species e.g. *Plecotus* and *Barbastella* is lower than others, e.g., *Nyctalus* and *Pipistrellus*, as a consequence of their less detectable echolocation calls and hunting strategies that take them into less open habitats. Careful interpretation is therefore applied if comparison across species or species groups is required.

3.0 Results

Ecological Desk Study

3.1 The Ecological Desk Study identified records of the following bat species within 2 km of the site:

- Common pipistrelle *Pipistrellus pipistrellus*
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Pipistrelle species *Pipistrellus sp.*
- Brown long-eared *Plecotus auritus*
- Myotis species *Myotis sp.*
- Noctule *Nyctalus noctula.*

3.2 The Multi-Agency Geographic Information for the Countryside (MAGIC) data identified eleven locations where Natural England EPS Mitigation Licences for bat roosts have been in place within 5km of the site. These are summarised in Table 3.

Table 3: Natural England mitigation licences within 5 km of the site

Species on Licence	Licence Reference	Dates Valid	Licensable Activities
Brown Long-eared Bat Natterers	EPSM2012-5099	24/04/2013 to 30/09/2014	Affects a breeding place Destruction of a breeding place
Brown Long-eared Bat Common pipistrelle Soprano pipistrelle	2015-7153-EPS-MIT	13/03/2015 to 30/09/2020	Destruction of a resting place
Common pipistrelle	2015-15230-EPS-BDX	15/09/2015 to 31/10/2015	Affects a breeding place Damages a breeding place Damages a resting place Destruction of a breeding place Destruction of a resting place
Brown Long-eared Bat Common Pipistrelle Soprano Pipistrelle	2016-21792-EPS-MIT	16/03/2016 – 31/03/2021	Destruction of a resting place
Common pipistrelle	2017-28222-EPS-MIT-1	01/06/2017 to 30/09/2017	Damages a resting place
Common pipistrelle Soprano pipistrelle	2018-35123-EPS-MIT	04/06/2018 to 31/12/2018	Destruction of a resting place
Common pipistrelle	2018-36904-EPS-MIT	16/11/2018 to 01/05/2019	Destruction of a resting place
Brandt's Bat Common pipistrelle Whiskered Bat	2018-37667-EPS-MIT	01/12/2018 to 29/11/2023	Affects a breeding place Damages a breeding place Destruction of a resting place

Species on Licence	Licence Reference	Dates Valid	Licensable Activities
Brown Long-eared Bat Common pipistrelle Soprano pipistrelle Natterers	2019-39545-EPS-MIT	12/03/2019 to 11/03/2024	Affects a breeding place Damages a breeding place
Common pipistrelle Soprano pipistrelle Natterers	2020-49999-EPS-MIT	16/11/2020 to 31/12/2022	Destruction of a resting place
Common pipistrelle Soprano pipistrelle Natterers	2020-49999-EPS-MIT-1	16/11/2020 to 31/12/2022	Destruction of a resting place

3.3 There are no designated sites identified for their bat populations located within 5 km of the site.

Roost Surveys

Preliminary Roost Assessment - Structures

3.4 A summary of the categorisations of structures within the site based on their location, characteristics and PRFs is provided below. TEP Drawing G11425.003 illustrates the locations and survey findings/ potential bat roost habitat suitability categorisation for each structure.

Structure B1

3.5 Building B1 is a single storey stable building composed of wood. The building has a pitched wood and bitumen roof. Internally the building is open to the roof and unlined. There are no gaps at the eaves of the building. Open doors and windows on the southern side provide access into the building.

3.6 B1 had Low Suitability.



Figure 2: Building B1 Exterior



Figure 3: Building B1 Exterior

Structure B2

3.7 Building B2 is a single storey stable structure constructed from wood. The building has a pitched corrugated metal roof; at the eaves there are drainpipes which are supported by wooden facias. Internally the building is open to the roof and unlined. There are some gaps at the eaves of the building.

3.8 Building B2 had Low Suitability.



Figure 4: Building B2 Exterior



Figure 5: Building B2 Exterior



Figure 6: Building B2 Exterior



Figure 7: Building B2 Interior

Potential Bat Roost Habitat Suitability

Table 4: Summary of the categorisations of structures within the site based on their location, characteristics and PRFs.

Structure Reference	Categorisation of Potential Bat Roost Habitat Suitability
B1	Low
B2	Low

Presence/ Likely Absence Surveys - Structures

3.9 Nocturnal presence/ likely absence emergence surveys supported the findings of the PRA. Photos of the NVA footage at the darkest point during each survey visit at each vantage point are provided at Appendix B. Surveyor vantage points and NVA locations used to gain coverage of the structure's aspects/ elevations and PRFs in addition to bat activity observations are shown on the TEP Drawing G11425.003.

3.10 No structures were recorded to support roost activity during the surveys.

3.11 During the surveys several bat species were recorded foraging and commuting around the site including species noted within desk study records for the site and locality:

- Common pipistrelle;
- Soprano pipistrelle;
- Noctule; and
- Brown long-eared.

3.12 Surveyors noted frequent foraging activity along the hedgerow and mature tree boundary features in the north and east of the site (see Table 5). In general, foraging and commuting activity was recorded along linear features such as the hedgerow and mature treelines and above and around tree canopies.

Table 5: Summary of surveyor observations during nocturnal presence/ likely absence emergence survey visits.

Structure Ref.	Survey Visit No.	Survey Date	Sunset Time	First Contact/ Species	Bat Species Recorded	Foraging and Commuting Activity Observations
B1	1	30/07/26	21:08	21:35	Soprano pipistrelle	Foraging up and down hedgerow to the east and across the courtyard
B1	1	30/07/26	21:08	21:38	Common pipistrelle	Foraging up and down hedgerow to the east and across the courtyard
B1	1	30/07/26	21:08	21:59	Noctule	Did not observe
B2	1	30/07/26	21:08	21:35	Soprano pipistrelle	Foraging along the hedgerow to the east and heading north. Foraging through stables and in the courtyard
B2	1	30/07/26	21:08	21:38	Common pipistrelle	Foraging along the hedgerow to the east and heading north. Foraging through stables and in the courtyard
B2	1	30/07/26	21:08	21:49	Noctule	Did not observe
B2	1	30/07/26	21:08	21:37	Soprano pipistrelle	Foraging along the hedgerow to the east of the site and flying north
B2	1	30/07/26	21:08	21:38	Common pipistrelle	Foraging along the hedgerow to the east of the site and flying north
B2	1	30/07/26	21:08	21:49	Noctule	Did not observe
B2	1	30/07/26	21:08	22:16	Brown long-eared bat	Did not observe

Preliminary Roost Assessment - Trees

3.13 A summary of the categorisations of trees within the site based on their location, characteristics and PRFs is provided in Table 6 and detailed information is provided in Table 7. TEP Drawing G11425.006 illustrates the locations and potential bat roost habitat suitability categorisation of trees.

- Trees T2, T4, T5, T17, T18 and T21 were assessed to have PRF-M bat roost habitat suitability;
- Trees T1, T6, T7, T9, T10, T14, T19, T20 and T22 were assessed to have PRF-I bat roost habitat suitability; and
- Trees T3, T8, T15 and T16 were assessed as having no bat roost habitat suitability or 'none'.

3.14 Four trees, T11, T12, T13 and T23 lie outside the redline boundary and therefore are excluded from discussion in this report.

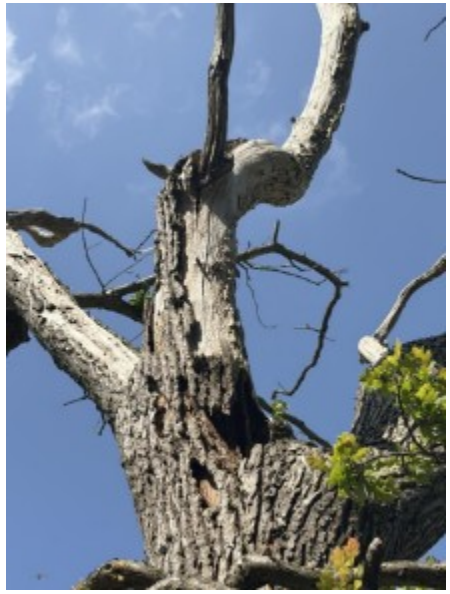
3.15 There is the potential that trees T2, T18 and T21 will be lost under the current proposals (access creation, re-routing overhead lines or arboricultural recommendations). All other trees with bat potential are to be retained under the current proposals.

Table 6: Summary of the categorisations of trees within and immediately adjacent to the site based on their location, characteristics and PRFs.

Tree Reference	Categorisation of Potential Bat Roost Habitat Suitability
T2, T4, T5, T17, T18 and T21	PRF-M
T1, T6, T7, T9, T10, T14, T19, T20 and T22	PRF-I
T3, T8, T15 and T16	None

Table 7: GLTA findings, photographic record and potential roost habitat suitability categorisation of trees based on their location, characteristics and PRFs.

T1	Tree Description:	Tree T1 was assessed as having PRF-I suitability for roosting bats. This tree is a sessile oak with a DBH of 60cm which is located to the northeast of the site on the boundary with a neighbouring property. The tree had some minor deadwood and some ivy cover.
	Photos:	
Categorisation of Potential Bat Roost Habitat Suitability		PRF-I

<table>
<tr><td rowspan="2">T2</td><td>Tree Description:</td><td colspan="3">Tree T2 was assessed as having PRF-M suitability for roosting bats. This tree is located to the northeast of the site and was a semi-mature dead oak tree with a hollowing trunk and several natural cavities. Sections of decayed wood and loose bark are present, providing potential roosting opportunities for bats. This tree could not be climbed due to its condition and was subject to nocturnal presence/likely absence surveys.</td></tr>
<tr><td>Photos:</td><td></td><td></td><td></td></tr>
<tr><td colspan="3">Categorisation of Potential Bat Roost Habitat Suitability</td><td>PRF-M</td></tr>
</table>

T3	Tree Description:	Tree T3 is a large sessile oak with a 1.1m DBH, situated on the northern boundary of the site. This tree was in good condition and had no bat features visible.
	Photos:	
Categorisation of Potential Bat Roost Habitat Suitability		Negligible

T4	Tree Description:	Tree T4 is a pedunculate oak with a 100cm DBH, situated on the northwestern boundary of the site. A woodpecker hole with clear flight lines is present facing southeast. The tree has dead wood, lifting bark and fissures throughout.	
	Photos:		
Categorisation of Potential Bat Roost Habitat Suitability			PRF-M

T5	Tree Description:	Tree T5 is a pedunculate oak with a DBH of 65cm, situated on the western boundary of the site. There is a woodpecker hole at 4.5m facing east into the site. The tree also has a large, snapped limb at 5m and lifting bark.	
	Photos:		
Categorisation of Potential Bat Roost Habitat Suitability			PRF-M

T6	Tree Description:	Tree T6 is a pedunculate oak with a DBH of 64cm, situated on the western boundary of the site. There is a west facing branch knot hole present which is shallow and occluded.	
	Photos:		
Categorisation of Potential Bat Roost Habitat Suitability			PRF-I

T7	Tree Description:	Tree T7 is a large sessile oak with a 1m DBH, situated on the southwestern boundary of the site. There is some deterioration to minor branches due to dieback.
	Photos:	
Categorisation of Potential Bat Roost Habitat Suitability		PRF-I

T8	Tree Description:	Tree T8 is a mature alder with a 60cm DBH, situated on the southern boundary of the site. The tree is in good condition with no bat features present.
	Photos:	
Categorisation of Potential Bat Roost Habitat Suitability		Negligible

T9	Tree Description:	Tree T9 is a mature alder with a DBH of approx. 58cm, situated on the southern boundary of the site. This tree is in good condition with a dense covering of ivy.
	Photos:	
Categorisation of Potential Bat Roost Habitat Suitability		PRF-I

T10	Tree Description:	Tree T10 is a common alder with a DBH of approx. 55cm, situated on the southern boundary of the site. This tree had some minor areas of lifted bark.
	Photos:	
Categorisation of Potential Bat Roost Habitat Suitability		PRF-I

T14	Tree Description:	Tree T14 is a tall beech situated within a group of four to the southeast of the site with an approx. DBH of 55cm. This tree has a knot hole present facing north.	
	Photos:		
Categorisation of Potential Bat Roost Habitat Suitability			PRF-I

T15	Tree Description:	Tree T15 is a tall beech tree situated within a group of four to the southeast of the site. This tree had an approx. DBH of 70cm. This tree was in good condition with no features present.	
	Photos:		
Categorisation of Potential Bat Roost Habitat Suitability			NONE

T16	Tree Description:	Tree T16 is a tall beech tree with a group of four to the southeast of the site with an approx. DBH of 60cm. This tree was in good condition with no features present.		
	Photos:			
Categorisation of Potential Bat Roost Habitat Suitability				Negligible

T17	Tree Description:	Tree T17 was a tall beech tree situated within group of four to the southeast of the site. This tree had a DBH of approx. 50cm. This tree had a significant tear out to the stem at approx. 10m high, north facing.		
	Photos:			
Categorisation of Potential Bat Roost Habitat Suitability				PRF-M

<table>
<tr><td rowspan="2">T18</td><td>Tree Description:</td><td colspan="3">Tree T18 is a large pedunculate oak with a DBH of 1.1m which is located to the southeast of the site within the roadside hedgerow H1. The tree had a large knot hole with cavity and a broken and split limb, providing potential roosting opportunities for bats. Both features were on the field side and faced west. This tree could not be climbed due to overhead electricity lines and was subject to nocturnal presence likely absence surveys.</td></tr>
<tr><td>Photos:</td><td></td><td></td><td></td></tr>
<tr><td colspan="3">Categorisation of Potential Bat Roost Habitat Suitability</td><td>PRF-M</td></tr>
</table>

T19	Tree Description:	Tree T19 was a small pedunculate oak with a DBH of 40cm situated in hedgerow H1 to the eastern boundary of the site. This tree did not have any split limbs. It had ivy growth covering the stem.
	Photos:	
Categorisation of Potential Bat Roost Habitat Suitability		PRF-I

T20	Tree Description:	Tree T20 is a pedunculate oak with a DBH of 40cm which is situated within hedgerow H1 to the eastern boundary of the site. This tree was fairly small, with all its limbs intact but had a cover of ivy growth.
	Photos:	
Categorisation of Potential Bat Roost Habitat Suitability		PRF-I

T21	Tree Description:	Tree T21 is an ash tree with a DBH of 40cm. This tree is located to the east with hedgerow H1 and had snapped and broken limbs which were large enough to provide potential roosting opportunities for bats. This tree could not be climbed due to the presence of overhead electricity lines and was subject to nocturnal presence/likely absence surveys.		
	Photos:			
Categorisation of Potential Bat Roost Habitat Suitability				PRF-M

T22	Tree Description:	Tree T22 was a pedunculate oak situated within hedgerow H1 to the east of the site with an approx. DBH of 30cm. This tree was in good condition and showed signs of historical pruning. The tree had a dense cover of ivy.
	Photos:	
Categorisation of Potential Bat Roost Habitat Suitability		PRF-I

T23	Tree Description:	Tree T23 was a dead oak tree with a DBH of approx. 50cm situated to the eastern boundary of the site. Pruning evident to the branches and the tree had some ivy cover.
	Photos:	
Categorisation of Potential Bat Roost Habitat Suitability		PRF-I

Presence/ Likely Absence Surveys - Trees

3.16 Nocturnal presence/ likely absence emergence surveys were undertaken for trees T2, T18 and T21. Photos of the NVA footage at the darkest point during each survey visit at each vantage point are provided at Appendix B. Surveyor vantage points and NVA locations used to gain coverage of the tree aspects/ elevations and PRFs in addition to bat activity observations are shown on TEP Drawing G11425.006.

3.17 No trees were recorded to support roost activity during the surveys.

3.18 During the surveys several bat species were recorded foraging and commuting around the site including species noted within desk study records for the site and locality:

- Common pipistrelle;
- Soprano pipistrelle;
- Noctule;
- Brown long-eared; and
- Myotis species.

3.19 Surveyors noted frequent foraging activity around trees and along hedgerow and mature tree boundary features in the east of the site. In general, foraging and commuting activity was recorded along linear features such as hedgerow and mature treelines and above and round tree canopies (see Table 8).

Table 8: Summary of surveyor observations during nocturnal presence/ likely absence emergence survey visits.

Tree Ref.	Survey Visit No.	Survey Date	Sunset Time	First Contact/ Species	Bat Species Recorded	Foraging and Commuting Activity Observations
T2	1	29/07/26	21:10	21:33	Soprano pipistrelle	Commuting into field and around neighbouring garden
T2	1	29/07/26	21:10	21:44	Noctule	Did not observe
T2	1	29/07/26	21:10	21:49	Common pipistrelle	Commuting into field and around neighbouring garden
T2	1	29/07/26	21:10	21:23	Noctule	Did not observe
T2	1	29/07/26	21:10	21:34	Soprano pipistrelle	Commuting into field and around neighbouring garden
T2	1	29/07/26	21:10	21:42	Soprano pipistrelle	Commuting into field and around neighbouring garden
T18	1	29/07/26	21:10	21:25	Soprano pipistrelle	North along the hedgerow. Multiple passes
T18	1	29/07/26	21:10	21:34	Common pipistrelle	North along the hedgerow. Multiple passes
T18	1	29/07/26	21:10	21:37	Noctule	Did not observe
T18	1	29/07/26	21:10	22:04	Myotis Sp.	Did not observe
T21	1	29/07/26	21:10	21:26	Soprano pipistrelle	North along hedgerow
T21	1	29/07/26	21:10	21:37	Noctule	Did not observe
T21	1	29/07/26	21:10	21:38	Common pipistrelle	North along hedgerow
T2	2	20/08/26	20:27	20:35	Noctule	Flying north
T2	2	20/08/26	20:27	20:37	Common pipistrelle	Commuting into field and around neighbouring garden
T2	2	20/08/26	20:27	20:43	Soprano pipistrelle	Commuting into field and around neighbouring garden
T2	2	20/08/26	20:27	20:35	Noctule	Flying north

Tree Ref.	Survey Visit No.	Survey Date	Sunset Time	First Contact/ Species	Bat Species Recorded	Foraging and Commuting Activity Observations
T2	2	20/08/26	20:27	20:37	Common pipistrelle	Commuting into neighbouring fields to the north
T2	2	20/08/26	20:27	20:43	Soprano pipistrelle	Commuting into neighbouring fields to the north
T2	2	20/08/26	20:27	21:43	Myotis Sp.	Did not observe
T18	2	20/08/26	20:27	20:33	Noctule	Flying west
T18	2	20/08/26	20:27	20:37	Soprano pipistrelle	Commuting north and south along hedgerow
T18	2	20/08/26	20:27	20:38	Common pipistrelle	Commuting north and south along hedgerow
T21	2	20/08/26	20:27	20:36	Noctule	Flying northwest
T21	2	20/08/26	20:27	20:37	Soprano pipistrelle	Commuting north along hedgerow
T21	2	20/08/26	20:27	20:38	Common pipistrelle	Commuting north along hedgerow
T2	3	10/09/26	19:38	19:56	Soprano pipistrelle	Commuting into neighbouring fields to the north
T2	3	10/09/26	19:38	19:58	Common pipistrelle	Commuting into neighbouring fields to the north
T2	3	10/09/26	19:38	20:03	Myotis sp.	Did not observe
T2	3	10/09/26	19:38	20:48	Noctule	Did not observe
T2	3	10/09/26	19:38	20:57	Brown long-eared bat	Did not observe
T2	3	10/09/26	19:38	20:23	Myotis sp.	Did not observe
T2	3	10/09/26	19:38	20:46	Noctule	Did not observe
T2	3	10/09/26	19:38	20:50	Common pipistrelle	Commuting into neighbouring fields to the north
T2	3	10/09/26	19:38	20:55	Brown long-eared bat	Did not observe

Tree Ref.	Survey Visit No.	Survey Date	Sunset Time	First Contact/ Species	Bat Species Recorded	Foraging and Commuting Activity Observations
T18	3	10/09/26	19:38	19:53	Common pipistrelle	Foraging along hedgerow
T18	3	10/09/26	19:38	20:14	Noctule	Commuting east
T21	3	10/09/26	19:38	19:54	Common pipistrelle	Foraging along hedgerow to the south
T21	3	10/09/26	19:38	20:14	Noctule	Commuting east

4.0 Conclusions

4.1 No bat roosts were identified during the surveys undertaken at the site. However, suitable bat roosting habitat will remain present within the trees and buildings identified as having suitable roosting features on site. The roost habitats present within the site could provide a variety of roost types of value at a site or local level including; feeding perches, night-roosts, occasional/ transitional roosts, non-breeding day roosts or mating sites (excluding larger swarming sites).

4.2 There are more mature trees and abundant residential buildings within the wider locality that may provide roost habitat for bats. Bats are also more transitionary in their use of tree roost habitat and can often roost opportunistically when seeking shelter or refuge. Trees within the site with potential roost habitat suitability may therefore be used by bats within the wider landscape as part of their wider roost habitat resource.

4.3 Ecological Desk Study data confirmed the presence of common pipistrelle, soprano pipistrelle, and brown long-eared roosts within the wider landscape in addition to the presence of Myotis sp. and noctule within the locality. Species recorded during site surveys also included common and soprano pipistrelle, brown long-eared, noctule and Myotis species (i.e., Brandt's, Daubenton's, whiskered and Natterer's). The site may fall within the Core Sustenance Zone (CSZ) for roosts associated with recorded species. The majority of activity recorded was from common and soprano pipistrelle and some noctule, which may reflect the presence of more roosts associated with these species within the locality, though is also illustrative of the flexible habitat requirements of common and soprano pipistrelles and the fact that noctules often range further from their roost sites whilst foraging.

4.4 The wildlife corridors around the site provided by hedgerows along the site's boundaries, offer connectivity to habitats within the wider landscape. These features also provide connectivity to arable land within the wider landscape to the north, east and west and areas of the river corridor to the south.

Drawings

Drawing 1: G11425.003 Bat Building Roost Assessment

Drawing 2: G11425.006 Ground Level Tree Assessment for Bats



KEY

- Site boundary
- Surveyor location
- Building with low bat roost potential

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Site Map



Rev	Description	Drawn	Approved	Date

TEP | THE ENVIRONMENT PARTNERSHIP

401 Faraday Street, Birchwood Park, Warrington, WA3 6GA
Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Land to the West of Tattenhall Road

Title
Bat Building Roost Assessment and Static Detector Locations

Drawing Number
G11425.003

Drawn	Checked	Approved	Scale	Date
HP	BJ	SV	1:300 @ A3	30/09/2026



KEY

- Site boundary
- Surveyor location

Tree Assessment for Bat Roost Potential

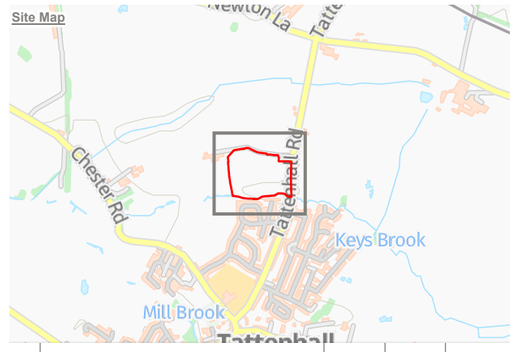
- Tree with no potential for roosting bats
- PRF-I: Tree with potential roost feature suitable for individual/very small numbers of bats
- PRF-M: Tree with potential roost feature suitable for multiple bats

Note:
The locations of habitats and habitat features are indicative.

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Site Map



Rev	Description	Drawn	Approved	Date

TEP THE ENVIRONMENT PARTNERSHIP

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Tel 01925 844004 e-mail tep@tep.uk.com www.tep.uk.com

Project
Tattenhall Road, Tattenhall

Title
Ground Level Tree Assessment for Roosting Bats

Drawing Number
G11425.006

Drawn	Checked	Approved	Scale	Date
MG	OH	SV	1:1,500 @ A3	30/09/2026

Appendix A: Methods

1. All bat surveys were undertaken in accordance with the Bat Conservation Trust (BCT) Good Practice Guidelines (Collins, 2023)[8]. Survey design is determined by scope of proposals, ecological features present and landscape context. Detailed data collation, field survey and data analysis methods are provided below.

Ecological Desk Study

2. Information regarding historic bat species records, protected habitats and protected sites is collated as part of a desk study. Desk Study data is provided by the RECORD including species records of the past decade, within a 2 km minimum radius of a site/survey area. Designated sites within 2 to 10 km are also reviewed. The preliminary Zones Of Influence (pZOI) within which ecological features are searched for as part of a desk study are varied according to the geo-spatial and/or legal significance of the ecological features identified. The scope and the pZOIs applied during a desk study, are searched from the site or survey area boundary/central grid reference. A review of previous surveys and reports relating to the site/survey area is also undertaken where required/relevant.

Roost Surveys

Preliminary Roost Assessment - Structures

3. Daytime Preliminary Roost Assessment (PRA) of structures, including external and internal survey, is carried out by TEP licensed bat consultants, aided by a health and safety assistant where required. PRAs include a detailed and systematic daytime inspection of the exterior and interior of structures to search for evidence of use by roosting bats, to assess the suitability of features within structures to support roosting bats and to determine potential entry/ exit points that may be used by roosting bats. Evidence of bat roost presence may include:

- Live or dead specimens;
- Droppings;
- Scratch marks;
- Staining; or
- Feeding remains.

4. Close focusing binoculars, a high-powered torch, an Explorer Premium digital endoscope camera and extendable ladders up to maximum ladder height of 3.8 m are used, where appropriate, to search for any field signs of bats or features providing potential bat roost habitat. Examples of structural features often providing suitable roost habitat or internal access for bats include:

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

- Slipped roof tiles;
- Splits in soffit boxes;
- Lintels above doors and windows;
- Gaps under fascia boards and cladding;
- Loose or lifting lead flashing; and
- Missing mortar and cavities in brickwork.

5. Additional factors assessed during a PRA include the composition, age and condition of structures and the surrounding landscape value. Following a PRA, structures are categorised with reference to Table 4.1 of the BCT 2023 Guidelines.

Table A1: Guidelines for assessing the potential roost habitat suitability of structures for bats in accordance with Table 4.1 of the BCT 2023 Guidelines.

Potential Roost Habitat Suitability	Description
None	No habitat features within the structure likely to be used by any roosting bats at any time of the year (i.e., a complete absence of crevices/ suitable shelter at all ground/underground levels).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions (e.g., temperature, humidity, height above ground level, light levels etc.) 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 roosts and not a classic, cool/ stable hibernation site, but could be used by hibernating individuals).
Moderate	A structure with one or more potential sites that could be used by bats due to their size, shelter, protection, conditions (e.g., temperature, humidity, height above ground level, light levels etc.) and surrounding habitat, but which are unlikely to support a roost of high conservation status (maternity or hibernation). Categorisation is irrespective of species conservation status.
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 (e.g., temperature, humidity, height above ground level, light levels etc.) and surrounding habitat. These structures have the potential to support high conservation status roosts e.g., maternity or classic, cool/ stable hibernation sites.

Presence/ Likely Absence Surveys - Structures and Trees

6. Structures and trees are subject to nocturnal presence/ likely absence emergence surveys in accordance with their categorisation (high, moderate, PRF-M or low bat roost habitat suitability) to establish presence or likely absence of bat roosts.

7. Trees should only be surveyed using presence/likely absence emergence surveys supported by NVAs, where access is not possible for Potential Roost Feature (PRF)

inspection surveys due to; health and safety constraints, PRFs being too extensive to survey thoroughly or where large roosts/maternity roosts are identified, and an alternative survey method is required to minimise disturbance.

8. Repeat visits are spread across the survey season (generally May to August) with at least three weeks separation for multiple surveys of the same structures or trees in accordance with Table 7.1 and Table 7.2 of the BCT 2023 Guidelines. Where roosts are identified, additional survey visits are undertaken to inform roost characterisation.

Table A2: Recommended timings and number of presence/ likely absence survey visits required (dependent on the potential roost habitat suitability of structures and trees) to give confidence in likely roost absence in accordance with Table 7.1 and Table 7.2 of the BCT 2023 Guidelines.

Potential Roost Habitat Suitability	Survey Timings to Give Confidence in Likely Roost Absence	Minimum Number of Survey Visits to Give Confidence in Likely Roost Absence
None	No further surveys required.	
Negligible	No further surveys required.	
Low/ PRF-I	May to August (structures). No further surveys required though Precautionary Working Measures (PWMs) must be implemented to avoid impacts and works scheduled in consideration of proposal deadlines (trees).	For structures one dusk emergence survey (more surveys may be required depending on complexity of the site and the number of structures present).
Moderate	Structures must be surveyed from May to September (dependent on weather and location), with at least one of the surveys undertaken between May and August (multiple survey visits should be spread out to sample as much of the recommended survey period as possible) and with surveys spaced at least three weeks apart.	Structures must have two dusk emergence surveys (spaced at least three weeks apart, preferably more to sample more of the recommended survey period).
High/ PRF-M	Structures and trees must be surveyed from May to September (dependent on weather and location), with at least two of the surveys undertaken between May and August (multiple survey visits should be spread out to sample as much of the recommended survey period as possible) and with surveys spaced at least three weeks apart. Surveys should maximise the possibility of detecting maternity roosts.	Structures and trees must have three dusk emergence surveys (spaced at least three weeks apart, preferably more to sample more of the recommended survey period).

9. Surveys are led by qualified TEP ecologists, supported by TEP bat survey trained assistant ecologists and night vision aids (NVAs). Surveyors and NVAs are used to gain coverage of the aspects/ elevations and PRFs associated with structures/trees that are identified during Preliminary Roost Assessment (PRA) and Ground Level Tree Assessment (GLTA) as requiring further survey. All potential access points for bats are covered by strategic placements of equipment, with each surveyor and NVA deployed with a full spectrum bat detector.

10. All surveys are conducted as dusk emergence surveys. Dusk emergence surveys commence at least 15 minutes before sunset and finish at least 1.5 hours after sunset.

11. During each survey all equipment is closely monitored by surveyors to ensure efficacy and weather conditions are recorded at the start and end of surveys in addition to any significant change in condition during the survey to ensure conditions remain optimal.

12. Following each survey, video footage and sonogram analysis is undertaken to inform observations such as bat species, the number of bats entering or leaving structures, the location of entry and exit points, behaviours such as close interest in a structure or its features and commuting or passing bats.

Use of Night Vision Aids

13. Infrared camera night vision aids (NVAs) are deployed by surveyors during presence/likely absence surveys as a complementary method to increase precision and to reduce visibility bias. Bats often emerge after it is too dark for surveyors to accurately observe them or survey conditions limit precise observations e.g., very dark conditions between buildings or under tree canopies or fluttering foliage camouflaging activity. Late emerging or quieter species can also easily be missed by surveyors limited visibility.

14. The number and positioning of NVAs required on a survey is informed by the potential roost features (PRFs) and/or aspects of structures/ trees requiring survey as determined by the Preliminary Roost Assessment (PRA) or Ground Level Tree Assessment (GLTA). Full coverage of structures/trees is ensured in case of unexpected PRFs being present.

15. Infrared cameras are used in combination with bat detectors to enable species identification and are operated by trained and experienced surveyors.

16. TEP NVAs include a single infrared recording video camera (Canon XA11 or Sony AX53) with a battery pack and an external infrared illuminator lighting kit (including a range of light specifications for spotlight and wide-angle focus), positioned on tripods.

17. The NVAs are directed towards PRFs and/or angled to encompass the full aspect of structures/ trees requiring survey as determined by the PRA or GLTA. Positioning of NVAs is designed to allow surveyors to determine when bats have flown out of PRFs or over/through structures/trees.

18. Larger or more structurally diverse aspects requiring coverage during surveys may require additional NVAs/lighting to ensure full and clear coverage by cameras. The

requirement for additional NVAs/lighting is identified firstly during the PRA or GLTA, and secondly after the initial survey visit or subsequent survey visits, dependent on surveyor feedback and site conditions.

19. For structures, deployment of NVAs internally may be considered depending on habitat and potential roosts and species present.

20. NVAs are set up in locations to ensure the view and lighting of PRFs and/or aspects of structures/trees requiring survey are free from limitations i.e., PRFs not being visible due to shadow, over-lighting, foliage obstructing views etc.

21. NVAs are set up prior to the survey start, with recording initiated at or before the survey start and continued until after the survey end. Recording start times of NVAs are recorded by surveyors for reference when reviewing data.

22. NVAs are checked for any adjustment or recording issues throughout surveys, particularly where unaccompanied NVAs are deployed to achieve coverage of structures/trees. This ensures that the lighting, angle, light levels and zoom view can be adjusted during the survey to ensure PRFs/survey aspects are illuminated appropriately and that full, clear coverage is maintained.

23. The location of NVAs in the context of the structures/trees being surveyed and the surveyor, is annotated on the surveyor vantage point sketch plan and/or site map.

24. Once visibility in the field declines to the point where surveyors can no longer see the PRFs/survey aspects fully, surveyors focus on the infrared camera digital view finder, peripheral activity and accompanying bat detectors to ensure observations remain accurate despite the dark conditions.

Preliminary Roost Assessment - Trees

25. Ground Level Tree Assessments (GLTA) are used to assess the available roosting resource and the need for further survey and/or mitigation. GLTA includes a detailed daytime inspection of the exterior of trees from the ground to look for potential roost features (PRFs) suitable for bats to use and any evidence of bat roosting. The only conclusive sign of a bat roost is actual bats or their droppings. Where droppings are found and it is possible to collect them, these are sent for laboratory analysis. The absence of droppings does not mean that bats are absent from a PRF.

26. GLTAs are carried out systematically, with surveyors viewing around all parts of the tree (from all angles and from both close to the trunk and further away), aided by use of close focusing binoculars and a high-powered torch where required. Observations are recorded in a standard format including details of:

- Tree species, height and diameter at breast height.

- Tree age and health.
- PRF type.
- PRF location on the tree, height and orientation.
- Bat roost habitat suitability of the PRF.

27. Additional factors assessed during a GLTA include the availability of tree roost habitat and habitats within the surrounding landscape value. Following a GLTA, trees are categorised with reference to Table 6.2 of the BCT 2023 Guidelines as determined by their characteristics and associated PRFs. PRFs are not inspected in any detail during GLTA and therefore categorisation is only an estimate of their potential for supporting roosting bats.

Table A3: Guidelines for assessing the potential roost habitat suitability of trees for bats in accordance with Table 6.1 of the BCT 2023 Guidelines.

Potential Roost Habitat Suitability	Description
None	No PRFs likely to be used by roosting bats or highly unlikely to be any.
PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats. Potential for use by individual bats opportunistically at any time of the year. These PRFs do not provide enough space, shelter, protection, appropriate conditions (e.g., temperature, humidity, height above ground level, light levels etc.) 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 roosts). Categorisation is irrespective of species conservation status.
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony. Tree may also include numerous PRFs that could be used by larger numbers of bats due to their size, shelter, protection, conditions (e.g., temperature, humidity, height above ground level, light levels etc.) and surrounding habitat. Categorisation is irrespective of species conservation status.

28. Where there are fewer or larger numbers of trees with features categorised as PRF-I present, there may be requirement for further surveys due to the increased likelihood of a roost being present.

29. All trees surveyed during a GLTA are numbered, marked on a map or plan and geo-referenced.

30. GLTA are best undertaken in clear, dry weather with good light conditions to prevent PRFs being missed. Bright sunshine can make it difficult to see PRFs in a tree due to glare, poor light conditions can cause PRFs to be missed, wind can blow away external signs e.g., droppings and rain can wash away droppings and make staining around roost entrances difficult to distinguish.

31. Optimal conditions for identifying tree PRFs are when trees are not in leaf. The recommended survey window for GLTA is between December and March (inclusive).

Appendix B: NVA Stills



Plate 1: Building B1 Lightest Point

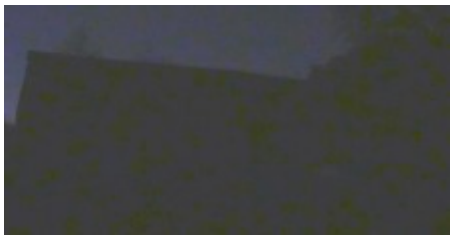


Plate 2: Building B1 Darkest Point



Plate 3: Building B2 VP1 Lightest Point



Plate 4: Building B2 VP1 Darkest Point



Plate 5: Building B2 VP2 Lightest Point



Plate 6: Building B2 VP2 Darkest Point



Plate 7: Tree T2 VP1 Lightest Point



Plate 8: Tree T2 VP1 Darkest Point



Plate 9: Tree T2 VP2 Lightest Point



Plate 10: Tree T2 VP2 Darkest Point

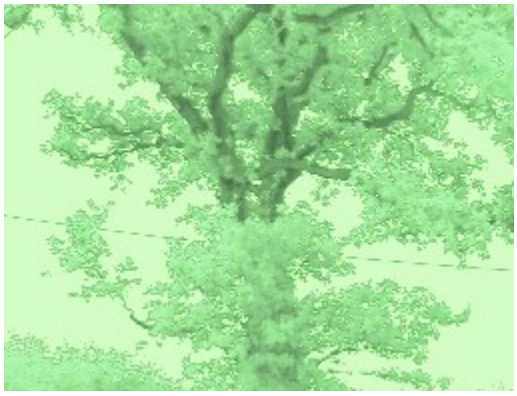


Plate 11: Tree T18 Lightest Point



Plate 12: Tree T18 Darkest Point



Plate 13: Tree T21 Lightest Point



Plate 14: Tree T21 Darkest Point

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