



Full Bat Roost Assessment

St John's Lodge, Lindfield

Report for Mr and Mrs Broad

Reference: SE25-3201

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CONTENTS

1	INTRODUCTION	6
	Background to the Project.....	6
	Purpose of the Assessment	7
2	METHODOLOGY	10
	Full Bat Roost Assessment.....	10
	Surveyor Information	22
	Limitations	23
3	RESULTS.....	24
	Desk Study	24
	Bat Building Inspection.....	30
	Dusk Bat Emergence Survey Results	38
4	ASSESSMENT AND EVALUATION	44
	Discussion of Findings	44
	Potential Impacts of the Proposed Development.....	47
	Legal Implications.....	50
	Planning Policy Considerations	51
5	RECOMENDATIONS	56
	Non-licenced Bat Working Method Statement.....	56
	Design precautions	58
	Survey Validity	59
	Appendix 1: Bats Recorded within the Application Site.....	60
	Appendix 2: Thermal Imaging Device Specification	63
	Appendix 3: Thermal Imaging Device Fields of View	66

List of Tables

Table 1. Data Search Areas	11
Table 2. Dusk Bat Emergence Survey Details	14
Table 3. Criteria for Assessing Potential Bat Roost Suitability.....	18
Table 4. Typical Bat Impact Vectors.....	19
Table 5. Bat Roost Classifications	21
Table 6. Surveyor Information	22
Table 7. Bat Records Returned by the Data Search.....	24
Table 8. Bat Habitats in the Data Search Areas	27
Table 9. Daytime Bat Walkover Results.....	31
Table 10. Dusk Bat Emergence Survey Results: 12 May 2025	38
Table 11. Dusk Bat Emergence Survey Results: 02 June 2024	40
Table 12. Dusk Bat Emergence Survey Results: 23 June 2024	42
Table 13. Potential Impacts of the Proposed Development	48
Table 14. Relevant Sections of the NPPF (2025).....	51
Table 15. Thermal Imaging Device Fields of View	67

List of Figures

Figure 1. Site Boundary.....	8
Figure 2. Site Location and Context.....	9
Figure 3. Bat Habitats Nearby and in the Wider Landscape.....	29
Figure 4. Building Inspection Plan.....	37
Figure 5. Dusk Emergence Survey - Bat Emergence Plan (12 May 2025).....	39
Figure 6. Dusk Emergence Survey - Bat Emergence Plan (02 June 2024)	41
Figure 7. Dusk Emergence Survey - Bat Emergence Plan (23 June 2025)	43
Figure 8. Examples of Bats and Evidence of Bats	57
Figure 9. Bat Species Sonogram Stills	61
Figure 10. Thermal Imaging Device Specification - Pulsar Helion 2 XP50 Pro	64
Figure 11. Thermal Imaging Device Specification – Guide TrackIR-19 Pro.....	65

Control Sheet

Project Information	
Project No.	SE25-3201
Client	Mr and Mrs Broad
Site	St John's Lodge, Lindfield
Survey Type	Full Bat Roost Assessment
Survey Dates	10 April 2025: Daytime Bat Walkover 12 May 2025: Dusk Bat Emergence Survey 02 June 2025: Dusk Bat Emergence Survey 23 June 2025: Dusk Bat Emergence Survey
Document History	
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Non-Technical Summary	
Purpose of Report	To determine the presence or likely absence of roosting bats, and to characterise the type and extent of any bat roosts present within the Zone of Ecological Impact of the Proposed Development; to identify any constraints caused by impacts to bats or their roosts; and, to advise of any mitigation measures that would be required to ensure the Proposed Development proceeds lawfully.
Methods used in Assessment	A Daytime Bat walkover was carried out at St John's Lodge, Lindfield on 10 April 2025. Dusk bat emergence surveys were carried out on 12 May 2025, 02 June 2025, and 23 June 2025, respectively. The findings of the surveys were supported by a desk study which included a data search commissioned from the local bat records centre and a review of relevant online resources.
Ecological Features	The Preliminary Bat Roost Assessment identified multiple potential bat roosting features on the external of St John's Lodge (B1). At the preliminary stage of the surveys, St John's Lodge (B1) was confirmed as supporting brown long-eared bat and a common pipistrelle bat roost and was assessed as having high suitability to support roosting bats. Following completion of dusk bat emergence surveys, St John's Lodge (B1) was confirmed to support four common pipistrelle day roosts each used by one bat, and one brown long-eared bat day roost, used by at least one bat. Bat activity recorded during the surveys indicates that the habitats found within the Application Site have conservation significance at the Local Level.
Potential Impacts of Proposals	In the absence of mitigation, the proposed development has negligible potential to result in the killing, injury or disturbance of any bats that are present at the time of the works. No direct impacts to the Day Roosts located St John's Lodge (B1) are anticipated therefore no bat licence will be required. However, a non-licensed bat working method statement should be applied to all works and details of this can be found in Section 5. If proposed, the installation of external artificial lighting could result in low levels of post-development impacts to any commuting and foraging bats in the vicinity of the Application Site. If proposed, use of breathable roofing membranes within the conversion has potential to cause the entanglement of any bats that could find and use the new storage building to roost in the future.
Mitigation and Compensation Measures	A Non-Licensed Bat Working Method Statement will be implemented to avoid unlawful impacts to bats, comprising timing restrictions, an exclusion zone and destructive search by soft strip of small areas of roof covering removal, supervised by a licensed bat ecologist. Mitigation measures to avoid adverse impacts to bats from non-bitumous roofing membranes and artificial lighting are also provided.

1 INTRODUCTION

Background to the Project

Instruction

- 1.1 Simlaw Ecology was commissioned by Mr and Mrs Broad in April 2025 to undertake a Full Bat Roost Assessment at St John's Lodge, 151 High Street, Lindfield, RH16 2HT.

Survey Area

- 1.2 The survey area consisted of St John's Lodge development area (hereafter referred to as 'the Application Site'). Buildings within the Application Site included: St John's Lodge (B1), the Bothy (B2), the Garage (B3), and a Shed (A1).
- 1.3 The Application Site was bound by residential dwellings and their private gardens to the east, south and west; and by an agricultural field to the north. Pedestrian and vehicular access was provided by a gravel driveway from High Street to the east of the Application Site.
- 1.4 The Application Site covered an area of ~1,030 square metres (sqm) and was approximately centred on Ordnance Survey (OS) National Grid Reference TQ 34836 25939 (see Appendix A for location and survey area).

Development Proposals

- 1.5 It is understood based on conversations with and drawings provided by Gould Baxter^{1,2} that the development proposals have changed since production of our Preliminary Ecological Appraisal Report, and are now understood to comprise:
- Single storey extension to the north and west elevation of St John's Lodge (B1);
 - Construction of a new chimney abutting the west elevation of St John's Lodge (B1);
 - Demolition of existing Garage (B3) and Shed (A1);
 - Construction of new garage building in the northeast corner of the Application Site; and,

¹ Alison Essex (2025-07-18) Pers. Comm.

² Gould Baxter (2025-07-03) Option B Elevations As Proposed. Drw No. D.PL.24

- Landscaping to create new gravel driveway and access point on east boundary to the north of the Bothy (B2) and new paved boundary path around extensions to St John's Lodge (B1).

1.6 It is understood that the Proposed Development will not result in the removal of any trees from the Application Site. Therefore, the trees within the Application Site have not been assessed for their suitability to support roosting bats, and the potential presence or likely absence of bat roosts within trees is not referenced further in this report.

Purpose of the Assessment

Full Bat Roost Assessment

- 1.7 The purpose of the Full Bat Roost Assessment was to:
- (a) Assess the potential of the Application Site to support roosting bats;
 - (b) Determine the presence or likely absence of bat roosts within the Application Site;
 - (c) Characterise the type and extent of any bat roosts present;
 - (d) Determine any constraints to the development caused by potential impacts to bats, or their roosts;
 - (e) Advise of any avoidance and/or mitigation measures that would be required to ensure the Proposed Development proceeds lawfully; and,
 - (f) If required, to provide a Bat Mitigation Strategy demonstrating how the Proposed Development can be achieved without adversely impacting the favourable conservation status of any bat species present, within their natural ranges.

Figure 1. Site Boundary



Figure 2. Site Location and Context



2 METHODOLOGY

Full Bat Roost Assessment

Desk Study

2.1 The desk study comprised:

- A review of historical data relating to the ecology of the Application Site;
- A review of relevant records from the local biological records centre; and,
- A comprehensive review of available online resources.

Historical Data

2.2 The Mid Sussex District Council's Planning Application Search tool³ was used to access previous planning applications on, or adjacent to, the Application Site and to look for relevant ecological information including previous ecology reports and consultation responses from statutory consultees and the Local Planning Authority.

Data Search

2.3 The Sussex biodiversity Record Centre (SxBRC)⁴ was commissioned to provide records of bats from within a two-kilometre (km) radius of the Application Site.

2.4 The data was received in April 2025 and all records from the past 20 years are provided within this report.

Online Resources

2.5 Online resources were used to identify any statutory designated nature conservation sites with bats as a primary reason for their designation within a 10 km radius of the Application Site.

2.6 Online resources were also used to identify the presence of habitats in the surrounding area that would be suitable to support roosting, foraging and commuting bats and this information was used to assess the likelihood of bats finding and utilising suitable roosting features within the Application Site.

³ <https://pa.midsussex.gov.uk/online-applications/>

⁴ <https://sxbrc.org.uk/home/>

2.7 The following resources were consulted:

- Multi-Agency Geographic Information for the Countryside (MAGIC)⁵ to identify statutory designated sites;
- The Woodlands Trust's Ancient Tree Inventory⁶ to identify Ancient and/or Veteran Trees;
- Google Earth Pro⁷ and online Ordnance Survey Mapping⁸ to identify features in the surrounding landscape that may encourage bats into, and or through, the Application Site (such as lines of mature trees, hedgerows, or nearby water bodies).

2.8 The geographical area for obtaining bat desk study data was determined using Good Practice Guidelines^{9,10}, and was informed by professional judgement. The study areas used for data collection varied depending on the potential impacts of the development on ecological features within and the Application Site and within the Zone of Ecological Influence of the Proposed Development; including reference to any known bat Core Sustenance Zones (CSZ)¹¹ within which the Application Site was located.

2.9 The data search areas are detailed in the table below.

Table 1. Data Search Areas

Data Type	Search area – distance from the Application Site boundary
Statutory Sites of Nature Conservation designated for Bats	10 km
Bat Commuting and Foraging Habitats (including Priority Habitats and Ancient Woodland)	1 km
Bat Roost Sites and flight records	2 km
Natural England Mitigation Licences	2 km

⁵ <http://www.magic.defra.gov.uk>

⁶ <https://ati.woodlandtrust.org.uk>

⁷ All aerial imagery used within this report courtesy of Google Inc.

⁸ <https://osmaps.ordnancesurvey.co.uk/osmaps>

⁹ Institute of Ecology and Environmental Management (2017) *Guidelines for Preliminary Ecological Appraisal*. 2nd Edition.

¹⁰ Collins, J. (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th Edn).

¹¹ The area surrounding a maternity roost within which habitat availability and quality exerts a significant influence on the ecological functionality and, therefore, conservation status of the colony using the roost.

Defining the Zone of Ecological Influence

- 2.10 The distance from the Proposed Development at which bats could be subject to significant effects has been evaluated within this assessment, and this area is referred to as the Zone of Ecological Influence (ZoEI) of the Proposed Development. The ZoEI varies depending on the type and extent of bat activity within the Application Site and the nature of the Proposed Development and, therefore, can be wider than Application Site boundary.
- 2.11 Based on the details of the Proposed Development provided by the client, it is understood that the proposed works will now only affect St John's Lodge (B1), and none of the other three buildings within the Application Site.
- 2.12 The potential impact vectors for bats will therefore include, and are likely limited to:
- Disturbance from noise, dust, and increased human activity to any bats roosting within St John's Lodge (B1), during the construction phase of the Proposed Development;
 - Direct impacts to bats and their roosts caused by physical alteration of St John's Lodge (B1);
 - Damage to any roosts located within St John's Lodge (B1) caused by spatial avoidance or reduced foraging times caused by the installation of additional artificial external lighting (if proposed); and,
 - Damage to retained habitats within and immediately adjacent to the Application Site caused by the installation of additional artificial external lighting (if proposed).
- 2.13 The ZoEI for the Proposed Development was therefore considered to be no further than the Application Site boundary and the immediately adjacent habitats.

Daytime Bat Walkover

External and Internal Building Inspection

- 2.14 All four buildings within the Application Site were inspected for bats or evidence indicating the presence of a bat roost, such as: droppings, feeding remains or fur oil staining around access/egress points to a potential bat roosting feature in accordance with good practice survey guidelines¹⁰.
- 2.15 Features that would be suitable to support roosting bats (e.g., hanging tiles, gaps into soffit boxes and slipped or broken roof tiles, etc.) were searched for on the exterior of the buildings.
- 2.16 All internal areas that would be suitable to support bats (e.g., roof voids) were inspected, with particular attention being paid to the floors, walls, roofing timbers, ledges, and stored items, where bat droppings might have accumulated.

- 2.17 Where required, a ladder¹², high-powered hand torch¹³, head torch with red light function¹⁴, and video endoscope¹⁵ were used to inspect areas of the buildings that would otherwise have been inaccessible.
- 2.18 Consideration was given to the species of bat, and type of roost (summer, transitory, maternity, feeding perch, hibernation), that might be associated with any features or habitats identified.

¹² Little Giant Revolution 4.3 m bifold ladder
¹³ LED Lenser X21R
¹⁴ Nitecore NU21 360 Lumen Ultra Lightweight Outdoor Headlamp Dual Beam
¹⁵ Bosch GIC-120C 12V Rechargeable

Bat Roost Characterisation

Dusk Bat Emergence Surveys

2.19 The Bat Roost Characterisation was informed by the findings of dusk bat emergence surveys carried out on 12 May 2025, 02 June 2025, and 23 June 2025.

Table 2. Dusk Bat Emergence Survey Details

Date of survey	Survey Timing	Structure reference/ location	Equipment used (bat detector and logging equipment)	Weather
2025-05-12	Sunset: 20:40 Start: 20:25 End: 22:10	St John’s Lodge (B1)	Bat Detectors: Echo Meter Touch 2 Pro Titley Scientific Chorus Interface: Apple iPad Mini A17 Pro Echo Meter Application (Version 3.0.2) Sound Analysis: Kaleidoscope Viewer (Version 5.7.0) Thermal Imaging: Pulsar Helion 2 XP50 Pro (1x) Guide TrackIR Pro 19 (1x)	Temp: 12-15 °C Cloud: 5% Wind: Beaufort 1 Rain: None
2025-06-02	Sunset: 21:06 Start: 20:51 End: 22:36	St John’s Lodge (B1)	Bat Detectors: Echo Meter Touch 2 Pro Titley Scientific Chorus Interface: Apple iPad Mini A17 Pro Echo Meter Application (Version 3.0.2) Sound Analysis: Kaleidoscope Viewer (Version 5.7.0) Thermal Imaging: Pulsar Helion 2 XP50 Pro (2x) Guide TrackIR Pro 19 (1x)	Temp: 12-14 °C Cloud: 2% Wind: Beaufort 1 Rain: None

Date of survey	Survey Timing	Structure reference/ location	Equipment used (bat detector and logging equipment)	Weather
2025-06-23	Sunset: 21:19 Start: 21:04 End: 22:49	St John's Lodge (B1)	Bat Detectors: Echo Meter Touch 2 Pro Titley Scientific Chorus Interface: Apple iPad Mini A17 Pro Echo Meter Application (Version 3.0.2) Sound Analysis: Kaleidoscope Viewer (Version 5.7.0) Thermal Imaging: Pulsar Helion 2 XP50 Pro (2x)	Temp: 15-18 °C Cloud: 10% Wind: Beaufort 2 Rain: None

- 2.20 The dusk bat emergence surveys involved visual observation of St John's Lodge (B1) for bats emerging from potential bat roosting features identified during the external and internal building inspection.
- 2.21 Four survey vantage points were used during each of the three dusk bat emergence surveys of St John's Lodge (B1).
- 2.22 The surveyors and survey equipment were arranged so that all sides of each building could be observed during each of the surveys.
- 2.23 Where recorded, bat activity was categorised as 'Emergence', 'Commuting', 'Foraging' and 'Song-flight'¹⁶.
- 2.24 Screenshots of the echolocation of each bat species recorded within the Application Site are provided in Appendix 1.

¹⁶ During which male bats emit high volumes of social calls to denote territory and attract females.

Thermal Imaging Methodology

- 2.25 Thermal Night Vision Aids (NVA) (Pulsar Helion 2 XP50 Pro and/or Guide Track IR Pro 19) were deployed as survey methods, in the place of ecologists, during the dusk bat emergence surveys. The full specifications of the NVAs are provided in Appendix 2.
- 2.26 The NVAs were positioned so that the field of view matched, at least, what would otherwise have been visible to an ecologist. The field of view of each NVA used in each survey is provided in Appendix 3.
- 2.27 Thermal imaging video was recorded on the internal hard drive of the NVAs and was later analysed using VLC Media Player. Only bat emergences or re-entries to the buildings were noted during post survey analysis.
- 2.28 The NVAs were deployed together with Titley Scientific Chorus detectors or Echo Meter Touch 2 Pro detectors on 12 May 2025, 02 June 2025 and 23 June 2025, which enabled identification of any bats observed by the NVAs, to species level, from their echolocation calls. All bat sound analysis was carried out using Kaleidoscope Viewer (Version 5.7.0).

Survey Timing and Methodology

- 2.29 All three dusk bat emergence surveys were carried out during the optimal survey period for detecting bat maternity roosts (May – August, inclusive). All dusk bat emergence surveys were carried out in suitable temperature and weather conditions. The surveys began 15 minutes before sunset and continued until at least 1.5 hours after sunset.

Guidelines and Informatives

- 2.30 All survey methods were in accordance with the following guidelines and informatives:
- **Survey Methodology:** All bat surveys were designed and implemented in accordance with the Bat Survey Good Practice Guidelines¹⁰.
 - **Bat Sound Analysis:** Analysis and identification of bat species from acoustic data was guided by the latest information^{17, 18}.

¹⁷ Russ, J. (2012) *British Bat Calls: A Guide to Species Identification*. Pelagic Publishing, Exeter

¹⁸ Middleton, N. Froud, A. and French, K. (2016) *Social Calls of the Bats of Britain and Ireland*. Pelagic Publishing, Exeter.

- **Thermal Imaging Bat Surveys:** Thermal video observation was carried out in accordance with the Thermal Imaging Bat Survey Guidelines¹⁹, and corresponding sections of the Bat Survey Good Practice Guidelines¹⁰.
- **Valuation:** The valuation of bat roosts, commuting routes, and foraging areas was carried out in accordance with the Bat Mitigation Guidelines²⁰.
- **Bat Mitigation and Compensation:** Any required bat mitigation and compensation measures were designed in accordance with the Bat Mitigation Guidelines²⁰, and the guidance on bats and artificial lighting at night²¹.

Bat Sound Analysis and Interpretation

Identification and Interpretation of Bat Sound

- 2.31 Identification of bats to species level from acoustic recordings was carried out using Kaleidoscope Viewer for Mac (Version 5.7.0). Raw data files were batch analysed to create a results document, and this document was opened within Kaleidoscope to navigate through the sound files, and to manually identify the bat calls within them, based on the latest guidance and information.
- 2.32 ‘Tidy Data’ management and filing protocols were followed in accordance with the Bat Survey Good Practice Guidelines¹⁰.
- 2.33 Identification of *Myotis* genus bats was not carried out to species level unless a roost of this genus was present.

Defining a ‘Bat Pass’

- 2.34 Bat activity within this report is referenced in terms of number of ‘bat passes’ recorded during each sampling period. The Echo Meter Touch and Titley Chorus bat detectors trigger each time bat echolocation is detected by the microphone and once triggered, the detector will record the echolocation for a minimum of three seconds to a maximum of 15 seconds, before creating a new file. Each triggered recording file is then regarded as one ‘bat pass’ within this report.

¹⁹ Fawcett Williams (2019) *Thermal Imaging: Bat Survey Guidelines*

²⁰ Reason, P.F. and Wray, S. (2023). *UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats*. Chartered Institute of Ecology and Environmental Management, Ampfield.

²¹ Institute of Lighting Professionals and the Bat Conservation Trust (2023) *Bats and Artificial Lighting at Night*. Guidance Note GN08/23. Institute of Lighting Professionals, Rugby.

- 2.35 Each file may contain one or several bats; therefore, the number of 'bat passes' does not equate to the number of bats within audible range of the detector. It does, however, provide data on the duration of bat activity within audible range of the detector, during the survey.

Analysis of Results

Bat Suitability Evaluation Criteria

- 2.36 The suitability of the Application Site to support bats was evaluated using the criteria set out in the table below, together with the professional judgement of the lead surveyor.

Table 3. Criteria for Assessing Potential Bat Roost Suitability

	Roosting Habitat	Commuting and Foraging Habitats
Negligible suitability	Buildings, structures and trees with negligible suitability for bats, such as: tightly sealed buildings with no architectural features with potential to support roosting bats; structures containing no accessible crevices or voids; and trees with no suitable potential bat roosting features.	Habitats with negligible potential to support commuting or foraging bats, such as: urban habitats comprising over 60% built structures and hard standing that are lit by artificial lighting and isolated from any living features in the landscape by surrounding unfavourable habitats.
Low suitability	A building or structure with one or more potential roost sites that could be used by individual bats, opportunistically. No habitats with sufficient space, shelter, or protection; or, with little suitable surrounding habitat, to support larger numbers of bats regularly (i.e. unsuitable for maternity or hibernation roosts). A tree of sufficient size and age to contain Potential bat roosting features, but with none seen from the ground, or features seen with only very limited potential to support bats.	Habitats that could be used by small numbers of commuting bats such as intermittent hedgerows or a stream with limited marginal vegetation, but isolated, i.e. poorly connected to suitable habitats in the wider landscape by barriers to the dispersal of bats. Suitable but isolated habitat that could be used by low numbers of foraging bats, such as a lone tree (not in a parkland situation) or an area of scrub or grassland within an otherwise urban environment.
Moderate suitability	A structure or tree 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, not species conservation value).	Continuous habitat, that is strongly connected with other suitable habitats in the wider landscape, that could be used by bats for commuting, such as: hedgerows, lines of mature trees or adjacent residential gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland, or water.
High suitability	A structure or tree with one or more potential roost sites that are obviously suitable for use by large numbers of bats on	Continuous, high-quality habitats that is homogenous with other suitable habitats in the wider landscape; and which is likely to be

	Roosting Habitat	Commuting and Foraging Habitats
	a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat (i.e. habitats that would be suitable to support maternity or hibernation roost sites).	used regularly by commuting bats, such as: well-vegetated watercourses which link to tracts of woodland or large bodies of water, mature hedgerows with trees, tree belts between woodlands and woodland edge habitat. Habitats as described above, which are likely to be used regularly by large numbers of foraging bats, such as: broadleaved woodland, tree-lined watercourses and wood pasture and parkland. The habitat/Site could be close to, and is strongly connected to, known roosts.

Impact Vectors

- 2.37 Potential impacts that are likely to arise because of the Proposed Development are identified within this report. Examples of typical impact vectors associated with development activities, together with their impacts on bats and their habitats, are provided in the table below.

Table 4. Typical Bat Impact Vectors

	Bats	Roosting Habitats	Commuting Habitats	Foraging Habitats
Direct	Physical impacts caused by contact with bats by hand, hand tools or while the bat is roosting within materials that are moved or demolished.	Physical destruction, damage or modification of a roost including, for example, alteration of the dimensions or structure of the roost or access point.	Fragmentation of commuting habitat by removal of trees or hedgerows creating a gap over which bats cannot or are unwilling to commute.	Felling or pruning of, for example, trees, meadows or scrubland, or filling ponds, such that they no longer generate invertebrate prey for bats
Indirect	Dust or other airborne pollutants, noise, and vibration.	Changing of temperature, humidity, or ventilation within a roost.	Light spill from artificial external lighting or noise caused by, for example, a new road.	Light spill from artificial external lighting or noise caused by, for example, a new road.
Potential Effects	Disturbance, Injury, or mortality of bats.	Roost loss, or depreciation of its capacity/ability to support bats	Roost loss, or separation of bats from foraging resources / other bat roosts.	Roost loss, lower birth rates, higher bat pup mortality, spatial avoidance by rarer bat species.

Impact Assessment Parameters

2.38 In accordance with the guidelines for ecological impact assessment²², and those provided within the bat survey good practice guidelines, the following parameters have been considered when assessing the different impacts of the project on bats and their habitats:

- **Effect:** Whether the impact is positive or negative;
- **Significance:** The significance of the impact on a geographical scale (see Geographical Context, below);
- **Duration:** Whether the impact is short term (<1-5years), medium term (5-20 years) or long-term/permanent (>20 years);
- **Timing:** The timing of the impact (before, during or after the development)

2.39 The importance of any bat roost or habitat within the Application Site was evaluated within a geographical context based on the population and conservation status of the bat species²³ and published guidance on evaluating bat roosts in ecological impact assessment²⁰. The following geographical frames of reference were used, and/or adapted to suit the circumstances of the Application Site:

- Within the Application Site
- Local
- Regional
- National
- International

Bat Roost Classifications

2.40 The type and extent of any bat roosts present within the Application Site was determined based on the findings of the surveys and was categorised as per the classifications in Table 5, below.

¹² CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal – 3rd Edition*. Chartered Institute of Ecology and Environmental Management, Winchester

²³ Mathews, F., Kubasiewicz, L. M., Gurnell, M., Harrower, C. A., McDonald, R. A., Shore, R. F. (2018) *A Review of the Population and Conservation Status of British Mammals*. A Report by the Mammal Society under contract to Natural England, Natural Resources Wales, and Scottish Natural Heritage. Natural England, Peterborough. ISBN 978-1-78354-469-1.

Table 5. Bat Roost Classifications (Natural England, 2016)

Roost Classification	Roost Description
Day Roost	A place where individual bats, or small groups of males, rest, or shelter in the day, but are rarely found by night in the summer.
Night Roost	A place where bats rest or shelter during the night but are rarely found in the day. May be used by a single individual on occasion or it could be used regularly by the whole colony.
Feeding Roost	A place where individual bats or a few individuals feed during the night but are rarely present by day.
Transitional / Occasional Roost	Used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.
Swarming Site	Where large numbers of males and females gather during late summer to autumn.
Mating Site	Where mating takes place from late summer and can continue throughout winter.
Maternity Roost	Where female bats give birth and raise their young to independence.
Hibernation Roost	Where bats may be found individually or together during winter. They have a constant, cool temperature and high humidity.
Satellite Roost	An alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

- 2.41 An assessment of the species of bat, and type of roost (summer, transitory, maternity, feeding perch, hibernation), that might be associated with any PRF identified was made using good practice guidelines and professional judgement.

Surveyor Information

Preliminary Bat Roost Assessment

- 2.42 The Daytime Bat Walkover was carried out by Daniel Simmons, Founder, Director and Principal Ecologist at Simlaw Ecology Limited. Daniel holds a Class 2 Bat Survey Licence, is a Natural England Bat Mitigation Class Licence Registered Consultant and is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Daniel has been a practicing ecological consultant for over 15 years, he has extensive experience carrying out commercial habitat and bat surveys. Daniel was assisted by Hannah Rodgers, Ecologist at Simlaw Ecology.

Bat Presence or Likely Absence Surveys

- 2.43 The nocturnal bat survey scope and methodology was designed and led by Ecologist Ella Meekins, with assistance from Principal Ecologist Daniel Simmons, Ecologist Hannah Rodgers, and Assistant Ecologist Alberto Cardillo-Zallo.
- 2.44 Details of the qualifications, experience, and professional training for each surveyor are provided below.

Table 6. Surveyor Information

Surveyor Name	Mapping Code	Training / Experience	Role
Daniel Simmons	DS	BSc (Hons) (II.I): Biodiversity Conservation and Management Full member of the Chartered Institute of Ecology and Environmental Management Level 2 Bat Survey Class Licence (2015-15026-CLS-CLS) Natural England Bat Low Impact Class Licence Registered Consultant (RC208) Over 15 years ecological consultancy experience Named Ecologist on over 30 European Protected Species Mitigation Bat Licenses covering seven bat species. Over 15 Sites Registered under BLICL	Director & Principal Ecologist Project Manager
Hannah Rodgers	HR	BSc (Hons): Zoology MSc: Species Identification and Survey Skills Associate Member of CIEEM 8+ Years ecological consultancy experience	Ecologist Survey Lead
Ella Meekins	EM	BSc: Zoology MSc: Evolutionary Behavioural Ecology Associate Member of CIEEM 3+ Years ecological consultancy experience	Ecologist Survey Lead
Alberto Cardillo-Zallo	ACZ	BSc: Biology Qualifying Member of CIEEM 1 year ecological consultancy experience	Assistant Ecologist

Limitations

Interpretation of Desk Study Data

Data Search

- 2.45 Records of bats and bat roosts returned by the data search are limited by the availability of records to the local records holder and so may not account for all species potentially present within the Application Site or locally. This limitation has been addressed through undertaking a thorough desk study, which took account of the general geographical distributions of bat species and habitats in the wider landscape, and a precautionary approach to interpreting field survey findings.

Full Bat Roost Assessment

Acoustic Identification of Mouse-eared Bats

- 2.46 Acoustic identification of mouse-eared *Myotis* spp. bats to species level can be problematic because of the similarity in their call characteristics²⁷. Where differentiation to species level has not been possible, recordings of these bats have been categorised as 'mouse-eared' bat. within this report. If unlawful impacts to mouse-eared bats or their roosts were to be anticipated, then DNA bat dropping analysis, or capture by hand or static hand net, would be deployed to positively identify the bat species affected, if the species cannot be confirmed from field recordings. The identification of mouse-eared bats to genus level in the field is, therefore, not considered to have significantly affected the assessment.

Survey Validity

Full Bat Roost Assessment

- 2.47 Owing to the highly mobile nature of bats, and the inherent unpredictability of their roosting habits, this assessment will be valid for a maximum of 12 months from the date of the final survey (i.e., until June 2026), in accordance with published guidance²⁴. Beyond this period, new bat roosts may have established within the suitable roosting features within the building.
- 2.48 **There were not considered to be any further limitations to the methodology described above.**

²⁴ CIEEM (2019) *Guidance Note on the Lifespan of Ecological Reports and Surveys*. Chartered Institute of Ecology and Environmental Management, Winchester.

3 RESULTS

Desk Study

Historical Data

Waverley Borough Council

- 3.1 The Mid Sussex District Council planning application search tool returned no records of previous planning applications at the Application site within the last 5 years.

Data Search

Surrey Biodiversity Information Centre

- 3.2 The Sussex Biodiversity Information Centre (SxBIC) provided the following records of bats from within a 2 km radius of the Application Site, within the last 20 years²⁵.

Table 7. Bat Records Returned by the Data Search (in order of abundance)

Species	No.	Date range of all Records	Location and Date of Nearest Roost	Roosting habitat of species
Daubenton's bat <i>Myotis daubentonii</i>	36	2025 - 2023	1.9 km northeast in 2023	Crevices in trees, bridges and other structures
Natterer's bat <i>M.nattereri</i>	32	2005 - 2023	1.9 km northeast in 2023	Crevices in buildings, trees, bridges, and other structures
Brown long eared bat <i>Plecotus auritus</i>	29	2005 - 2023	74 m southeast in 2009	Crevices in trees, buildings, and other structures
Common pipistrelle <i>Pipistrellus pipistrellus</i>	27	2007 - 2024	150 m southwest in 2023	Crevices in buildings, trees, bridges, and other structures
Soprano pipistrelle <i>P.pygmaeus</i>	16	2007 - 2022	1.27 southwest in 2017	Crevices in buildings, trees, bridges, and other structures

²⁵ SxBRC (28.04.2025) Bat records from 2005 onwards: Request for Bat Records in an Area Around Lindfield.

Species	No.	Date range of all Records	Location and Date of Nearest Roost	Roosting habitat of species
Whiskered bat <i>M.mystacinus</i>	15	2006 - 2023	1.9 km northwest in 2023	Crevices in buildings , trees, bridges, caves, and other structures
Chiropera order bat <i>Chiroptera</i> sp.	12	2004 - 2023	83 m southeast in 2009	Crevices in buildings , trees, bridges, caves, and other structures
Noctule <i>Nyctalus noctula</i>	9	2007 - 2023	1.32 km northeast in 2021	Crevices and voids in trees only
Mouse eared bats <i>Myotis</i> spp.	9	2005 - 2022	1.9 km northwest in 2005	Crevices in buildings , trees, bridges, caves, and other structures
Long eared bats <i>Plecotus</i> spp.	5	2013 - 2021	155 m southwest in 2021	Crevices in buildings , trees, bridges, caves, and other structures
Pipistrelle bats <i>Pipistrellus</i> spp.	5	2005 - 2014	723 m southwest in 2005	Crevices in buildings , trees, bridges, caves, and other structures
Serotine <i>Eptesicus serotinus</i>	4	2007 - 2022	2 km southeast in 2022	Crevices, mostly in buildings but occasionally in trees
Noctule bats <i>Nyctalus</i> spp.	1	2007	N/A	Crevices in buildings, trees, caves and other structures
Nathusius' pipistrelle <i>P.nathusii</i>	1	2018	N/A	Crevices in buildings, trees, bridges and other structures

3.3 The data search returned 201 records of bats within the search area between 2005 and 2025, comprised of nine species (brown long eared bat, common pipistrelle, Daubenton's bat, Nathusius' pipistrelle, Natterer's bat, noctule, serotine, soprano pipistrelle, and whiskered bat). Genus level records were also recorded for mouse-eared (*Myotis* sp.), long-eared (*Plecotus* sp.), noctule (*Nyctalus* sp.), and pipistrelle (*Pipistrellus* sp.) genera bats; and, order level records were returned for *Chiroptera* bats.

3.4 The nearest roost was of common pipistrelle, located 150 m southwest of the Application Site in 2023.

Online Resources

- 3.5 Statutory designated nature conservation sites that are designated for bats, priority habitats, Ancient Woodlands and Ancient and Veteran Trees; and, granted European protected Species Mitigation bat Licenses, and their approximate location in relation to the Application Site, are provided in the table overleaf.

Table 8. Bat Habitats in the Data Search Areas

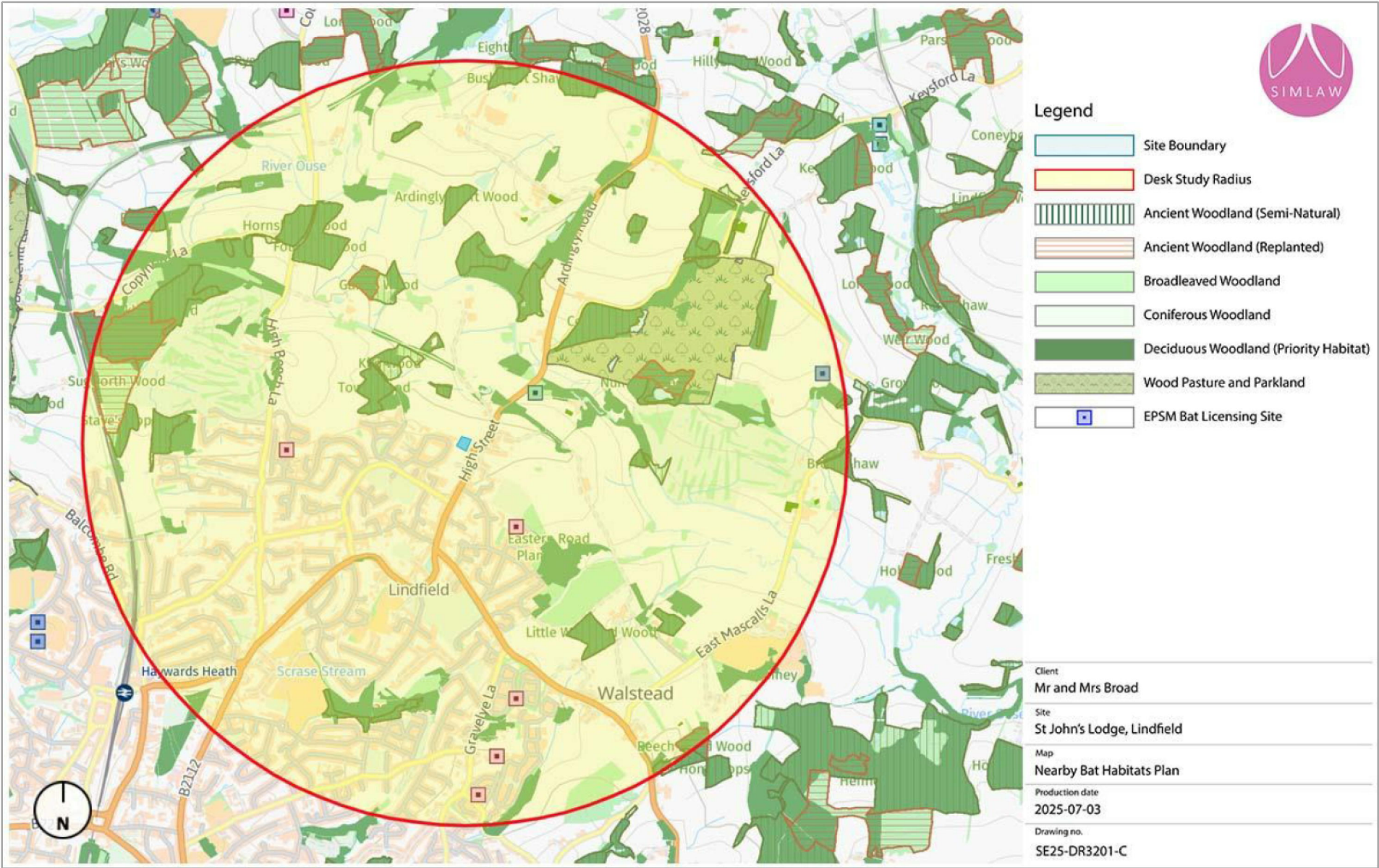
Site Name	Designation / Mitigation Licence Number	Habitats with potential to support bats / bat species present	Location in relation to Application Site ²⁶
Statutory Nature Conservation Sites Designated for Bats within 10 km of the Application Site			
N/A	N/A	N/A	N/A
Priority Habitats and Ancient Woodlands within 1 km of the Site			
10 units	Priority Habitat	Ancient and Semi-Natural Woodland	230m to 490m
15 units	Priority Habitat	Deciduous Woodland	225m to 880m
1 unit	Priority Habitat	Traditional Orchard	550m northeast
1 unit	Priority Habitat	Wood-pasture and Parkland BAP	595m northeast
Granted European Protected Species Mitigation Bat Licenses within 2 km of the Application Site			
EPSM Bat Licence Site	2020-45674-EPS-MIT	Resting place of brown long-eared, common pipistrelle and soprano pipistrelle.	1.45 km northeast

¹ **Red** = adjacent to the Application Site or connected to it by continuous/homogeneous bat habitats. **Amber** = separate from the Application Site but connected by fragmented bat habitats. **Green** = distant from the Application Site, isolated by a lack of connecting habitats or barriers to the dispersal of bats.

Bat Habitats Nearby and in the Wider Landscape

- 3.6 The grounds of St John's Lodge comprised a gravel driveway leading west to the front of St John's Lodge (B1) and the Garage (B3), associated landscaped gardens containing one shed (A1), and the Bothy (B2). Most of the habitats within the Application Site were unlit by artificial external lighting. The Application Site therefore contained habitats with high suitability to support commuting and foraging bats.
- 3.7 The Application Site was located in a rural residential setting to the north of Lindfield. The surrounding landscape was characterised by residential buildings, their associated gardens, open fields and woodland tracts.
- 3.8 The rear garden of St John's Lodge (B1) was bound by mature hedgerows and backed onto a large arable field, surrounded by tracts of deciduous woodland. The woodlands and hedgerows would provide suitable foraging habitats for bats and commuting corridors for bats to and from the Application Site. The woodland trees and residential buildings could provide suitable habitat for roosting bats.
- 3.9 The west boundary of the Application Site comprised a large, Leyland cypress hedgerow, which bats could use to forage or to commute/disperse through the local landscape. This hedgerow acts as a passage from the residential buildings and gardens to the south and west, to the open field and woodlands to the north. This hedgerow may therefore be important for the distribution of bats throughout the local landscape.
- 3.10 The abundant availability of suitable habitats to support bats in the vicinity of the Application Site was considered to greatly increase the potential for bats to find and utilise suitable roosting features present within it.

Figure 3. Bat Habitats Nearby and in the Wider Landscape



Bat Building Inspection

External and Internal Building Inspection

- 3.11 A description of all buildings at St John's Lodge (B1) together with details of any bats, evidence of bats or features with potential to support roosting bats recorded during the building inspections, are provided in the table overleaf.

Table 9. Daytime Bat Walkover Results

St John's Lodge (B1): External Inspection

General Structure

A detached, two-storey, ragstone dwelling with pitched intersecting gable roof and single-storey mono-pitched roofs on the north elevation.

Roof, eaves and gables

The roofs were pitched and covered with clay field tiles and decorative ridge tiles. The eaves were unboxed. Three gables were present on the north elevation, one gable on the west elevation and one gable on the south elevation. The gables were tile and pug sealed.

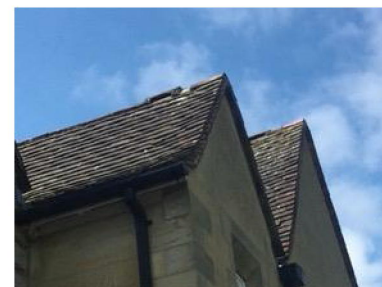
Walls, windows and doors

Walls were ragstone, and windows and doors were timber framed set in decorative stonework.

Bats, Evidence of bats and Potential Bat Roosting Features (PRF)

No bats or evidence of bats were recorded during the external inspection, however, the following features with potential to support roosting bats were recorded:

- Gaps beneath open eaves;
- Gaps beneath lifted field tiles on all aspects;
- Gaps beneath vent ridge tiles on central and west roofs;
- Low number of gaps beneath field tiles on mono-pitch roofs;
- Gaps beneath eaves of mono-pitch roofs;
- Gaps beneath southwest corner of chimney stack and roof tiles on west aspect;
- Gaps beneath first floor window frame and ragstone walls on west elevation; and,
- Low number of gaps beneath gas/electric block on west elevation.



St John's Lodge (B1): Internal Inspection

Internal Structure

St John's Lodge (B1) contained one L-shaped roof void, in the west and south roof sections, that was divided into two by a brickwork chimney stack.

The south section of the roof void measured approximately 26 sqm with an apex height of 1.25 m. The roof was formed of timber rafters and ridge beam and lined with bitumen felt. The floor was insulated with new fibreglass roll.

The west section of the roof void measured approximately 20 sqm with an apex height of 2 m. The roof was formed of timber rafters and ridge beam and lined with bitumen felt. The floor was fully boarded, and this section was used for storage.

Bats, Evidence of bats and Potential Bat Roosting Features (PRF)

No bats were recorded during the internal inspection however the following evidence of bats was recorded:

- Pile of approximately 150 brown long-eared bat droppings just east of the access hatch to the south section;
- A further ~200 brown long-eared bat droppings scattered beneath the ridge beam in the south section to the west of the access hatch; and,
- A low number of common pipistrelle droppings in the west section adhered to dividing chimney stack.



St John's Lodge (B1): Preliminary Assessment

St John's Lodge (B1) was confirmed as supporting a brown long-eared bat roost within the south roof void section and a common pipistrelle roost within the west section of the western chimney. The proposed works to St John's Lodge (B1) are localised to the north and northwest of the building nearby. No bat droppings were recorded, and further suitable bat roosting features were identified in these areas. The areas of the proposed works are considered suitable to support bat roosts with a confirmed bat roost nearby.

Assessment: *High Bat Roost Suitability with Confirmed Bat Roosts*

Bothy (B2): External Inspection

General Structure

A single-storey, ragstone outbuilding with pitched and hipped roof and central cupola.

Roof, eaves and gables

The roof was covered with clay tiles with a timber clad cupola. Eaves were unboxed and covered with mesh.

Walls, windows and doors

Walls were ragstone. Windows and doors were timber and set directly into the stonework.

Bats, Evidence of bats and Potential Bat Roosting Features (PRF)

No bats or evidence of bats were recorded during the external inspection, however, the following features with potential to support roosting bats were recorded:

- Gaps beneath lifted and slipped field tiles on all elevations;
- Gaps where mortar missing beneath hip tiles; and,
- Gaps beneath lifted cladding on cupola;



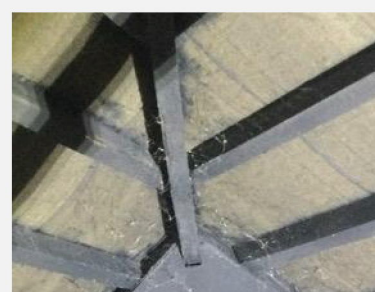
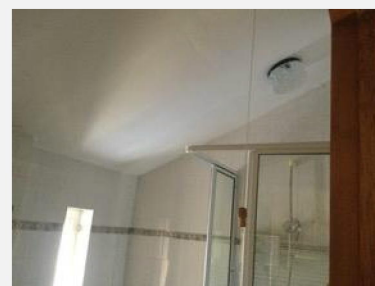
The Bothy (B2): Internal Inspection

Internal Structure

The Bothy (B2) had no internal roof void however the cupola was sealed off with timber boarding. The roof was lined with timber sarking boards.

Bats, Evidence of bats and Potential Bat Roosting Features (PRF)

No bats or evidence of bats were recorded within the building.



Bothy (B2): Preliminary Assessment

No bats or evidence of bats was recorded however bat roosting features were recorded on the exterior of The Bothy (B2) that were s

Assessment: *Moderate Bat Roost Suitability*

Garage (B3): External Inspection

General Structure

A single-storey timber structure with pitched roof.

Roof, eaves and gables

The roof was pitched and covered with bitumen felt and eaves were sealed with timber barge board.

Walls, windows and doors

Walls were formed of timber shiplap cladding. Windows and doors were timber framed and set directly into the timber structure.

Bats, Evidence of bats and Potential Bat Roosting Features (PRF)

No bats, evidence of bats or features with potential to support roosting bats were recorded during the external inspection.



Garage (B3): Preliminary Assessment

No bats, evidence of bats or features with potential to support roosting bats were recorded.

Assessment: *Negligible Bat Roost Suitability*

Ancillary Structures (A1): External Inspection

One ancillary structures were present on the Application Site

A1: A Timber Shed

Bats, Evidence of bats and Potential Bat Roosting Features (PRF)

No bats, evidence of bats, or features with potential to support roosting bats were recorded within Ancillary Structures (A1)

Preliminary Assessment

No bats, evidence of bats, or potential roosting features were recorded.

Assessment: *Negligible Bat Roost Suitability.*

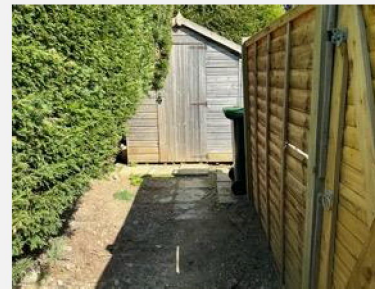


Figure 4. Building Inspection Plan



Dusk Bat Emergence Survey Results

3.12 The following tables contain the results of all dusk bat emergence surveys carried out at the Application Site.

Table 10. Dusk Bat Emergence Survey Results: 12 May 2025

Survey timing	Structure(s) surveyed	Bat species and numbers	Roost type (if present)	Roost Location
Sunset: 20:40 Start: 20:25 End: 22:10	St John’s Lodge (B1) – 1/3	Common pipistrelle (1x Bat)	Day roost	Beneath field tiles on elevation
NOTES / OBSERVATIONS One common pipistrelle was recorded emerging from St John’s Lodge (B1) at 20:59 during the survey. Five bat species were heard in flight during the survey: Brown long-eared bat, common pipistrelle, <i>Myotis</i> sp., serotine and soprano pipistrelle. Brown long-eared bats were recorded three times during the survey, at 21:52. A single brown long-eared bat was seen flying clockwise around the building. Common pipistrelles were recorded 190 times during the survey, between 20:56 and 22:12. One common pipistrelle emerged from a gap in the roof of St John’s Lodge (B1) at 20:59. Common pipistrelles were seen foraging around St John’s Lodge (B1) and commuting along the west hedge. <i>Myotis</i> sp. bats were recorded twice, both times at 21:38. <i>Myotis</i> bats were heard but not seen during the survey. Serotine bats were recorded 18 times during the survey, between 21:41 and 21:58. Serotine bats were seen foraging and socialising on the roof. Soprano pipistrelles were recorded four times during the survey, between 21:25 and 21:46. A single bat of this species was seen foraging on the roof. No further bat activity was recorded during the survey				

Figure 5. Dusk Emergence Survey - Bat Emergence Plan (12 May 2025)



Table 11. Dusk Bat Emergence Survey Results: 02 June 2024

Survey timing	Structure(s) surveyed	Bat species and numbers	Roost type (if present)	Roost Location
Sunset: 21:06 Start: 20:51 End: 22:36	St John's Lodge (B1) - 2/3	Brown long-eared bat (1x Bat)	Day roost	Southeast roof void

NOTES / OBSERVATIONS

One brown long-eared bat was recorded emerging from St John's Lodge (B1) at 22:15 during the survey.

Four bat species were recorded in flight during the survey: Common pipistrelle, *Myotis* sp., serotine and soprano pipistrelle.

Brown long-eared bat was recorded once during the survey, with one bat of this species emerging from the eaves on the southeast elevation commuting southeast, out of the Application Site.

Common pipistrelles were recorded 139 times during the survey, between 21:25 and 22:37. Common pipistrelles were seen foraging along the west hedgerow throughout the survey.

Myotis sp. bats were recorded three times between 21:39 and 22:24. A single *Myotis* bat was seen flying north along the east elevation.

Serotine bats were recorded 14 times during the survey, between 21:39 and 22:09. Serotine bats were seen foraging and commuting throughout the survey.

Soprano pipistrelles were recorded once during the survey, at 21:27. A single bat of this species was seen commuting anticlockwise around the roof void.

No further bat activity was recorded during the survey.

Figure 6. Dusk Emergence Survey - Bat Emergence Plan (02 June 2024)

The map displays an aerial view of a residential area with a central building labeled 'B1'. The building is surrounded by a red dashed line indicating the survey boundary. Various colored regions are overlaid on the map: red areas labeled 'NVA' (Not Visually Assessed) are located at the top left, top right, and bottom right. A blue area labeled 'ACZ' (Acoustic Zone) is on the left side. An orange area labeled 'EM' (Emergence Map) is on the right side. A pink starburst is located near the building 'B1'. A north arrow is in the bottom left corner.

Table 12. Dusk Bat Emergence Survey Results: 23 June 2024

Survey timing	Structure(s) surveyed	Bat species and numbers	Roost type (if present)	Roost Location
Sunset: 21:19 Start: 21:04 End: 22:49	St John’s Lodge (B1) – 3/3	Common pipistrelle (1x Bat)	Day Roost	Beneath valley tiles on elevation
		Common pipistrelle (1x Bat)	Day Roost	Beneath ridge tile of so dormer

NOTES / OBSERVATIONS

Two common pipistrelle bats were recorded emerging from St John’s Lodge (B1), one at 21:43 and one at 21:48 during the survey.

Five bat species were recorded in flight during the survey: Common pipistrelle, *Myotis* sp., noctule, serotine, and soprano pipistrelle.

Common pipistrelles were recorded 222 times during the survey, between 21:43 and 22:48. One common pipistrelle emerged from t and one common pipistrelle emerged from a valley tile on the south elevation at 21:48. Common pipistrelles were seen foraging around the west hedgerow throughout the survey.

Myotis sp. bats were recorded once at 21:59. Bats of this species were heard but not seen during the survey.

Noctule bats were recorded twice during the survey, at 22:46. Bats of this species were heard but not seen during the survey.

Serotine bats were recorded 7 times during the survey, between 21:55 and 22:01. Serotine bats were seen commuting north along the garden of B1 during the survey.

Soprano pipistrelle bats were recorded twice during the survey, at 22:39 and 22:42. Bats of this species were heard but not seen during the survey.

No further bat activity was recorded during the survey.

Figure 7. Dusk Emergence Survey - Bat Emergence Plan (23 June 2025)



4 ASSESSMENT AND EVALUATION

Discussion of Findings

Preliminary Bat Roost Assessment

- 4.1 The data search returned 201 records of bats within the search area between 2005 and 2025, comprised of nine bat species (brown long eared bat, common pipistrelle, Daubenton's bat, Nathusius' pipistrelle, Natterer's bat, noctule, serotine, soprano pipistrelle, and whiskered bat). Genera level records were also recorded for mouse-eared, long-eared, noctule, and pipistrelle genera bats; and, order level records were returned for *Chiroptera* bats. The nearest roost was of common pipistrelle, located 150m southwest of the Application Site in 2023.
- 4.2 The abundance and quality of the surrounding habitats for bats was considered to greatly increase the potential for bat species to find the Application Site and there were not considered to be any barriers to the dispersal of bats from these habitats into the Application Site.
- 4.3 Approximately 350 brown long-eared bat droppings and a low number of common pipistrelle droppings were recorded within the south and west roof voids of St Johns Lodge (B1), respectively. Features with potential to support roosting bats were recorded on the exterior of St John's Lodge (B1) and the Bothy (B2). The remaining buildings within the Application Site, the Garage (B3) and Shed (A1), did not contain any potentially suitable bat roosting features and were therefore assessed as having negligible bat roost suitability.
- 4.4 The results of the Preliminary Bat Roost Assessment therefore confirmed that St John's Lodge (B1) contained two confirmed roosts, and had high bat roost suitability, the Bothy (B2) had moderate bat roost suitability, and the Garage (B3) and Shed (A1) had negligible bat roost suitability. No impacts to the Bothy (B2) were anticipated because of the Proposed Development and it was therefore scoped out of the assessment.

Full Bat Roost Assessment

Common Pipistrelle Bat Roost Characterisation

- 4.5 Three common pipistrelle bats were recorded emerging from three locations on St John's Lodge (B1). The location of the roosts, and the number of bats that each support, is as follows:
 - **Roost 1:** Common pipistrelle Day Roost (1x bat). West roof void or beneath lead flashing around base of western chimney.

- **Roost 2:** Common pipistrelle Day Roost (1x bat). Beneath field tiles on southern side of west elevation.
- **Roost 3:** Common Pipistrelle Day Roost (1x bat). Beneath ridge tile of southern dormer.
- **Roost 4:** Common Pipistrelle Day Roost (1x bat). Beneath valley tile on southern elevation.

4.6 St John's Lodge (B1) was therefore assessed as supporting four common pipistrelle Day Roosts, each used by one bat.

4.7 The common pipistrelle is a common and widespread bat species with a stable range that extends across the UK and a stable/increasing population consisting of approximately 3,040,000 individuals²⁷.

4.8 The common pipistrelle Day Roosts supported by St John's Lodge (B1) were not used for breeding or mating and is, therefore, not significant for the maintenance of the population of this species at the local level. The Day Roost of this species supported by St John's Lodge (B1) is therefore assessed to be of Low Conservation Significance²⁰.

Brown long-eared Bat Roost Characterisation

4.9 Approximately 350 brown long-eared bat droppings were recorded in the southeast roof void during the Daytime Bat Walkover. The number and age profile of bat droppings recorded within the roof void indicates that the southern roof void of St Johns Lodge (B1) supports a brown long-eared bat roost, used by single or low numbers of bats over multiple years.

4.10 A single brown long-eared bat was recorded emerging from the southeast eaves of St John's Lodge (B1) during the dusk bat emergence survey on 02 June 2025, confirming that at least one bat uses the building to roost. No brown long-eared bats were recorded emerging from St John's Lodge (B1) during the dusk bat emergence surveys on 12 May 2025 and 23 June 2025.

4.11 One brown long-eared bat was recorded emerging from one location on St John's Lodge (B1). The roost location and known access points are as follows:

²⁷ Mathews F, Kubasiewicz LM, Gurnell J, Harrower CA, McDonald RA, Shore RF. (2018) A Review of the Population and Conservation Status of British Mammals: Technical Summary. A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage. Natural England, Peterborough.

- **Roost 5:** Brown long-eared Day Roost (1x bat). Inside southeast roof void. 1x access point beneath the eaves on the southeast elevation

4.12 St John's lodge (B1) was therefore confirmed as supporting one brown long-eared bat Day Roost, used by a minimum of one brown long-eared bat.

4.13 The brown long-eared bat is a common and widespread bat species, with a stable range that extends across the UK and a stable population consisting of approximately 934,000 individuals²⁸.

4.14 There was no evidence to suggest that the brown long-eared bat Day Roost supported by St John's Lodge (B1) was used for breeding or mating and are, therefore, it is unlikely to be significant for the maintenance of the population of this species at the local level. The Day Roost of this species is therefore valued as having conservation significance at the Site Level²⁰.

Bat Foraging and Commuting Habitats

4.15 Five bat species were recorded in flight within the grounds of the Application Site, or within audible range of the Application Site during the dusk bat emergence surveys: brown long eared bat, common pipistrelle, noctule, serotine, and soprano pipistrelle.

4.16 Single or low numbers of bats of these species, predominantly common pipistrelles, were recorded foraging within the survey area, which was located in the vicinity of the dwelling, in the north of the Application Site. No well-used (i.e., by more than one bat at a time) commuting route or foraging grounds were identified during the surveys.

4.17 The bat activity recorded during the surveys indicates that the habitats found within the Application Site are an important resource for a low number of bats, including those that roost within St John's Lodge (B1), comprising common and widespread species.

4.18 The west boundary of the Application Site was dominated by hedgerow, linking the residential buildings and gardens to the south to the wider landscape, including fields and woodland tracts to the north. Bats were observed commuting along this hedgerow during each of the surveys, demonstrating its use as a commuting corridor into adjacent bat habitats.

²⁸ Mathews, F., Kubasiewicz, L. M., Gurnell, J., Harrower, C. A., McDonald, R. A., Shore, R. F. (2018) *A Review of the Population and Conservation Status of British Mammals. A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage*. Natural England, Peterborough

- 4.19 The habitats within the Application Site therefore have conservation significance at the Local Level.

Potential Impacts of the Proposed Development

Impacts to Bat Roosts

- 4.20 Table 13, overleaf, provides a full description of the potential impacts of the Proposed Development on bats and their roosts, commuting habitats, and foraging habitats, without further mitigation or compensation measures.

Table 13. Potential Impacts of the Proposed Development (Without Mitigation or Compensation)

Proposed Activity	Ecological Receptor	Description and Implications of Impacts	Scale of impact ²⁹
Impacts to Statutory Designated Sites			
N/A	N/A	N/A	N/A
Initial Impacts³⁰			
Alterations and extensions to St John's Lodge (B1)	Roosting bats Common pipistrelle (4x bats); and Brown long-eared bat (1x bat).	Disturbance and obstruction Proposed construction works that will affect the north and west elevations of St Johns Lodge (B1) have potential to result in disturbance impacts to one common pipistrelle bat that roosts occasionally beneath field tiles on the west elevation of St John's Lodge (B1). Disturbance impacts could include noise, dust, and vibration associated with the construction of the north and west ground-floor extension. However, as only a single common and widespread bat is known to use the roost, and as it is located at roof level, it is unlikely that any such disturbance would result in sufficient impacts to adversely affect the ability of this bat to survive or reproduce. Low levels of disturbance to an individual bat of a common and widespread species would be considered to have a negligible impact at the site level.	Negligible

²⁹

Whether the impacts will affect individual bats only (Site Level), or whether they will affect the County, Regional, National or International population of the bat species concerned.

³⁰

The impact(s) of activities undertaken on site pre-development and during works (e.g., human presence, noise, vibration, dust, lighting and obstruction of access by scaffolding etc.)

Proposed Activity	Ecological Receptor	Description and Implications of Impacts
Long-term Impacts³¹		
Alterations and extensions to St John's Lodge (B1)	Roosting bats Common pipistrelle (4x bats) Brown long-eared bat (1x bat)	All Impacts No bat roosts were recorded in the areas that will be directly impacted by construction or extension; therefore, there is negligible potential for the proposed development to cause impacts to roosting bats such as roost loss or accidental killing/injury.
Installation of additional external artificial lighting (If proposed)	Commuting and Foraging bats	Spatial Avoidance Installation of additional external artificial lighting has potential to damage bat habitats used by the seven bat species recorded in flight in the vicinity of the site during nocturnal bat surveys.
Use of Breathable Roofing Membrane in the construction of new extension (If proposed)	Roosting bats	Entanglement of Bats Installation of modern and/or breathable roofing membrane that has not passed a test within the new extension has potential to cause the entanglement and death of bats that could find and utilise the building to roost at a later date.

³¹ The impact(s) of any permanent roost modification, roost loss, fragmentation or isolation, including post-development interference

Legal Implications

Protection of Bats and their Roosts

4.21 All species of bat found in Britain, and their roosts, receive protection under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) and Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). These legislative tools make it an offence for any person to:

- Deliberately capture, injure, or kill a bat;
- Deliberately disturb a bat while it is occupying a place of rest;
- Intentionally or recklessly destroy a breeding or resting place (roost) of a bat; and,
- Intentionally or recklessly obstruct access for bats to a roost or to otherwise significantly alter the structure of a roost so as to render it unsuitable to support roosting bats.

4.22 The Proposed Development therefore has potential to result in unlawful impacts to bats, and it will be necessary to:

- (a) Design appropriate mitigation measures to avoid impacts to bats during the Proposed Development;

4.23 A Non-Licensed Bat Working Method Statement detailing appropriate mitigation measures to avoid impacts to bats; and, a bat mitigation strategy detailing appropriate mitigation and proportional enhancement measures for impacts to bats are provided in the following sections.

4.24 The Non-Licensed Bat Working Method Statement provided within this report demonstrates that the Proposed Development will not result in unlawful impacts to bats.

Priority Bat Species

4.25 Section 41 of the NERC Act requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England (Priority

Species). It is legally incumbent upon the Planning Authority to have regard to the conservation of Priority Habitats and Priority Species³².

- 4.26 Priority Species of bat are: Bechstein’s bat, brown long-eared bat, greater horseshoe, lesser horseshoe, noctule, soprano pipistrelle, and western barbastelle.
- 4.27 The Application Site is known to support one Priority Species of bat: brown long-eared. The brown long-eared roost present within the Application Site is of Site Importance, and appropriate mitigation and proportional enhancement will be used to ensure that the Proposed Development does not result in adverse impacts to the favourable conservation status of this species within its natural range.

Planning Policy Considerations

National

The National Planning Policy Framework (NPPF, February 2025)

- 4.28 The NPPF sets out the Government’s planning policies for England and how these are expected to be applied. The table below contains details of sections within the NPPF which relate to planning policies and decisions.

Table 14. Relevant Sections of the NPPF (2025)

Paragraph Number	Detail
180	“Planning policies and decisions should contribute to and enhance the natural and local environment by: a) protecting and enhancing valued landscapes, sites or biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate; d) minimising impacts on and providing net gains for biodiversity, including by

³² As defined in CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2nd Edition*. Chartered Institute of Ecology and Environmental Management, Winchester.

	establishing coherent ecological networks that are more resilient to current and future pressures; e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.
181	Plans should: take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; plan for the enhancement of natural capital at a catchment or landscape scale
185	“To protect and enhance biodiversity and geodiversity, plans should: a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and, b) Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”
186	“When determining planning applications, local planning authorities should apply the following principles: a) If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; b) Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest; c) Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and d) Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to

	nature where this is appropriate.”
187	The following should be given the same protection as habitats sites: a) potential Special Protection Areas and possible Special Areas of Conservation; b) listed or proposed Ramsar sites; and c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.
188	The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.
191	“Planning policies and decisions should also ensure that new development is appropriate for its location considering the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should: c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes, and nature conservation.”

Local Planning Policy

Mid Sussex District Plan 2014 - 2031 (March 2018)

4.29 DP37: Trees, Woodland and Hedgerows

“The District Council will support the protection and enhancement of trees, woodland and hedgerows, and encourage new planting. In particular, ancient woodland and aged or veteran trees will be protected.

Development that will damage or lead to the loss of trees, woodland or hedgerows that contribute, either individually or as part of a group, to the visual amenity value or character of an area, and/ or that have landscape, historic or wildlife importance, will not normally be permitted.

Proposals for new trees, woodland and hedgerows should be of suitable species, usually native, and where required for visual, noise or light screening purposes, trees, woodland and hedgerows should be of a size and species that will achieve this purpose.

- Trees, woodland and hedgerows will be protected and enhanced by ensuring development:
- incorporates existing important trees, woodland and hedgerows into the design of new development and its landscape scheme; and

- prevents damage to root systems and takes account of expected future growth; and
- where possible, incorporates retained trees, woodland and hedgerows within public open space rather than private space to safeguard their long-term management; and
- has appropriate protection measures throughout the development process; and
- takes opportunities to plant new trees, woodland and hedgerows within the new development to enhance on-site green infrastructure and increase resilience to the effects of climate change; and
- does not sever ecological corridors created by these assets. Proposals for works to trees will be considered taking into account:
 - the condition and health of the trees; and
 - the contribution of the trees to the character and visual amenity of the local area; and
 - the amenity and nature conservation value of the trees; and
 - the extent and impact of the works; and
 - any replanting proposals.

The felling of protected trees will only be permitted if there is no appropriate alternative. Where a protected tree or group of trees is felled, a replacement tree or group of trees, on a minimum of a 1:1 basis and of an appropriate size and type, will normally be required. The replanting should take place as close to the felled tree or trees as possible having regard to the proximity of adjacent properties.

Development should be positioned as far as possible from ancient woodland with a minimum buffer of 15 metres maintained between ancient woodland and the development boundary.”

4.30 **DP38: Biodiversity**

“Biodiversity will be protected and enhanced by ensuring development:

- Contributes and takes opportunities to improve, enhance, manage and restore biodiversity and green infrastructure, so that there is a net gain in biodiversity, including through creating new designated sites and locally relevant habitats, and incorporating biodiversity features within developments; and
- Protects existing biodiversity, so that there is no net loss of biodiversity. Appropriate measures should be taken to avoid and reduce disturbance to sensitive habitats and species.

Unavoidable damage to biodiversity must be offset through ecological enhancements and mitigation measures (or compensation measures in exceptional circumstances); and

- Minimises habitat and species fragmentation and maximises opportunities to enhance and restore ecological corridors to connect natural habitats and increase coherence and resilience; and
- Promotes the restoration, management and expansion of priority habitats in the District; and
- Avoids damage to, protects and enhances the special characteristics of internationally designated Special Protection Areas, Special Areas of Conservation; nationally designated Sites of Special Scientific Interest, Areas of Outstanding Natural Beauty; and locally designated Sites of Nature Conservation Importance, Local Nature Reserves and Ancient Woodland or to other areas identified as being of nature conservation or geological interest, including wildlife corridors, aged or veteran trees, Biodiversity Opportunity Areas, and Nature Improvement Areas.

Designated sites will be given protection and appropriate weight according to their importance and the contribution they make to wider ecological networks.

Valued soils will be protected and enhanced, including the best and most versatile agricultural land, and development should not contribute to unacceptable levels of soil pollution.

Geodiversity will be protected by ensuring development prevents harm to geological conservation interests, and where possible, enhances such interests. Geological conservation interests include Regionally Important Geological and Geomorphological Sites.”

5 RECOMMENDATIONS

Non-licenced Bat Working Method Statement

Precautionary Method of Works

5.1 The proposed works are limited in extent and duration and will not result in any direct impacts to bat roosts; however, the following Non-Licensed Bat Working Method Statement would still need to be applied to the Proposed Development, to ensure it does not result in unlawful impacts to roosting bats:

- The location of bat roosts must be marked on all construction plans used by all contractors, together with instructions to avoid working within those areas unless such work has been signed off by, or is accompanied by, a licensed bat ecologist;
- Changes to the proposed development that would result in direct impacts or alterations to any known bat roost must be discussed with a licensed bat ecologist and alterations to mitigation requirements, including obtaining the relevant licences (as appropriate), must be agreed before proceeding.
- A toolbox talk must be given to all site contractors on the first day of the works commencing. All contractors will be required to sign a copy of toolbox talk and non-licensed working method statement.
- Removal of roofing materials must be carried out by destructive search by soft strip, under the supervision of a licensed bat ecologist, to account for the very low likelihood of encountering bats. A detailed destructive search by soft strip methodology is provided below.

Destructive Search by Soft Strip

5.2 The Proposed Development involves the removal of a low number of field tiles and roofing materials from the west and north of St John's Lodge (B1), and alterations to the eaves where the new chimney will be joined to the west elevation. One bat was recorded roosting near to these areas during the surveys; however, this bat was recorded only on one occasion and bats are not typically found beneath field tiles of roofs outside of the bat active period. It is therefore considered very unlikely that bats will be present in these areas of the building if the works are timed to fall outside of the bat active period and roosting niches beneath the field tiles on these aspects of the roof will be retained throughout the development.

5.3 To account for the very low likelihood of bats being encountered during the works, the removal of these tiles will be preceded by a destructive search by soft strip, comprising:

- (1) Close inspection of the works area for bats or evidence of bats using a video endoscope;
- (2) Removal of the field tiles, by hand, under the supervision of a licensed bat ecologist or accredited agent; and,
- (3) Immediate cessation of this element of the works if any bats or evidence of bats is encountered.

5.4 The destructive search will be considered complete when all required roofing material removal has been completed.

5.5 The purpose of the destructive search by soft strip is to avoid injury or mortality to any bats occurring during the works and to maintain legislative compliance in the very unlikely event that bats or evidence of roosting bats are encountered.

Unexpected Discovery of a Roost

5.6 In the event that bats or bat droppings are encountered at any stage during the works that are not supervised (See Figure 8, below), then the bat(s) must be placed back where found and/or left alone, all works must stop, and a licensed bat ecologist must immediately be called to site. If bats or evidence of bats is found during the works, then a legally protected bat roost is present, and any subsequent development activities which affect that roost, would be considered a criminal offence.

Figure 8. Examples of Bats and Evidence of Bats



Bats: Bats are small animals that can easily go unnoticed during a roof strip. If disturbed, they can fly from beneath a tile but will more often stay still in the hope of not being seen. This leaves them vulnerable to being accidentally crushed.

Evidence of Bats: Bat droppings often build up in small clusters beneath roof or hanging tiles. They look like mouse droppings but are dry, and crumble when compressed. Unlike rodent droppings, they are not toxic.

- 5.7 Avoid directly handling the bat unless absolutely necessary, i.e. to protect it from harm or to enclose it in a safe location. If handling is required, you must refer to guidance provided by the Bat Conservation Trust on how to safely handle and contain a bat before doing so³³.
- 5.8 When they arrive, the licensed bat ecologist will ensure the bat(s) are unharmed and will liaise with Natural England to agree a suitable and lawful way to proceed with the works, which may involve waiting until the relevant bat licence has been obtained.

Design precautions

Building Material Restrictions

Roofing Membranes

- 5.9 All modern roofing membranes and breathable roofing membranes are associated with entanglement and the subsequent death of bats that come into contact with them³⁴. Type 1F Bitumen roofing felt must therefore be used for any of the roofs of any proposed extensions. This measure removes the risk of entanglement to any bats that could find and utilise the building to roost at a later date.
- 5.10 Some non-bitumous, breathable roofing membranes have now passed a 'snagging propensity test', which means they can be certified as "safe" for use in environments where bats are/could be present³⁵. If non-bitumous, breathable roofing membranes are proposed for use, then a 'bat safe' product should be chosen.

³³ <https://www.bats.org.uk/advice/help-ive-found-a-bat>

³⁴ Waring, S. D., Essah, E. A., Gunnell, K., Bonser, R. C. H. (2013) *Double Jeopardy: The Potential for Problems when Bats Interact with Breathable Roofing Membranes in the United Kingdom*. *Architecture and Environment* 1(1): 1-13.

³⁵ <https://www.bats.org.uk/our-work/buildings-planning-and-development/non-bitumen-coated-roofing-membranes>

- 5.11 **N.B.** This is a mandatory requirement of obtaining a bat licence. Please discuss the requirement with your appointed architects and/or building contractor, as it may require amendments to be made to the specification of the roof.

External Lighting Restrictions

Artificial Lighting Mitigation Strategy

- 5.12 No proposals for additional external lighting were submitted as part of the planning proposals for the project. However, artificial external lighting can significantly damage bat habitats; directly through spatial avoidance and indirectly by fragmenting the landscape with uncrossable barriers to dispersal and severing commuting routes between roosts and foraging habitats.
- 5.13 The Application Site is currently predominantly unlit, contains suitable bat foraging habitat and, multiple records of light-sensitive bat species were returned by the data search. To maintain the suitability of the Application Site to support foraging bats, and to avoid any potentially adverse impacts of bat activity in the vicinity, it should therefore remain unlit by artificial external lights.

Survey Validity

Lifespan of this Report

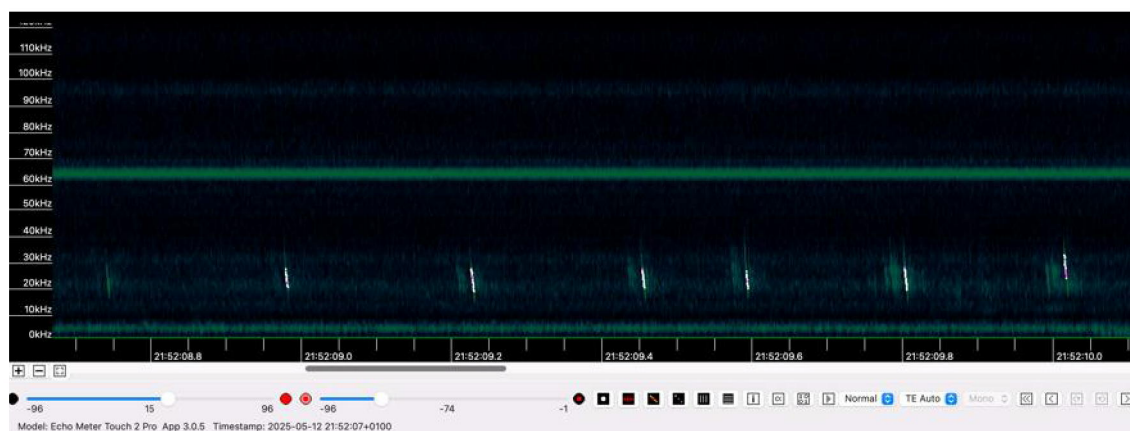
- 5.14 Owing to the highly mobile nature of bats, and the inherent unpredictability of their roosting habits, this assessment will be valid for a maximum of 12 months from the date of the final survey (i.e., until June 2026), in accordance with published guidance³⁶. Beyond this period, new bat roosts may have established within the suitable roosting features within the buildings and/or trees within the Application Site.

³⁶ CIEEM (2019) *Guidance Note on the Lifespan of Ecological Reports and Surveys*. Chartered Institute of Ecology and Environmental Management, Winchester.

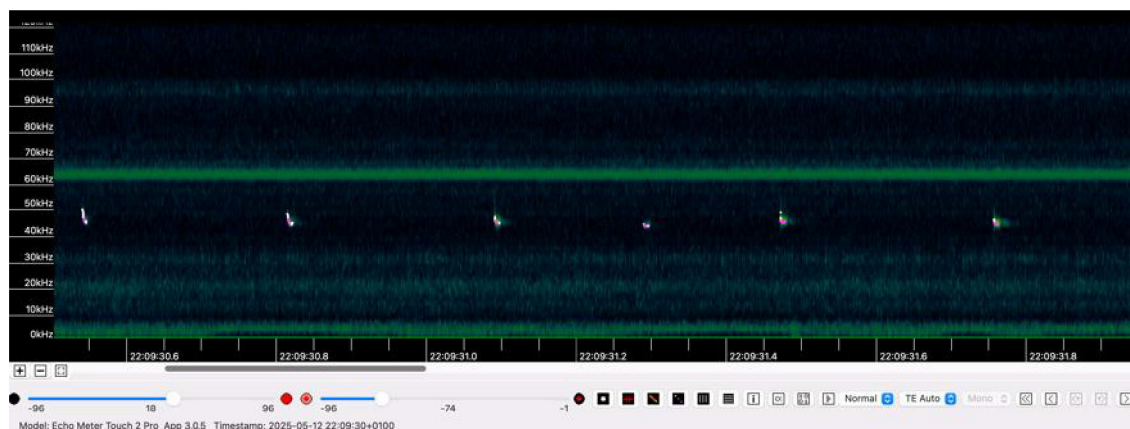
Appendix 1: Bats Recorded within the Application Site

Figure 9. Bat Species Sonogram Stills

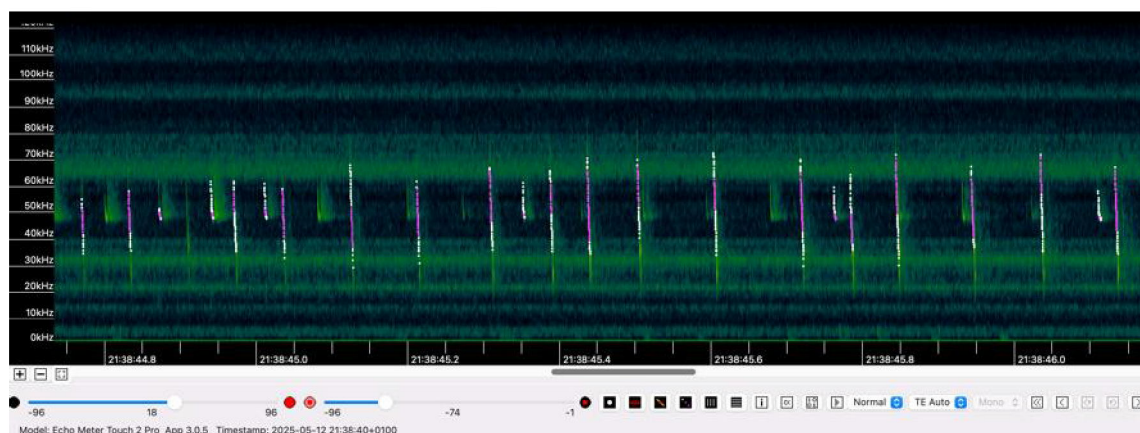
Brown long eared bat



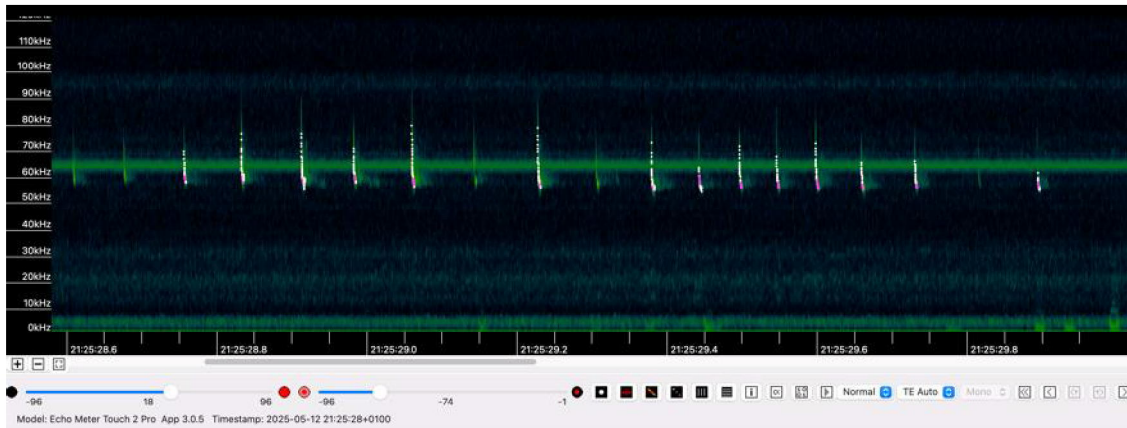
Common pipistrelle



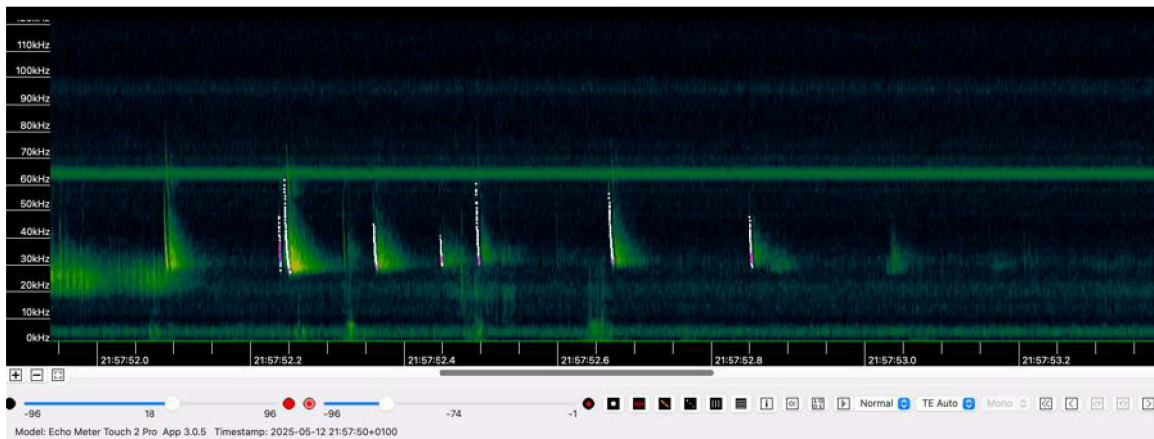
Myotis sp.



Soprano pipistrelle



Serotine



Appendix 2: Thermal Imaging Device Specification

Figure 10. Thermal Imaging Device Specification - Pulsar Helion 2 XP50 Pro

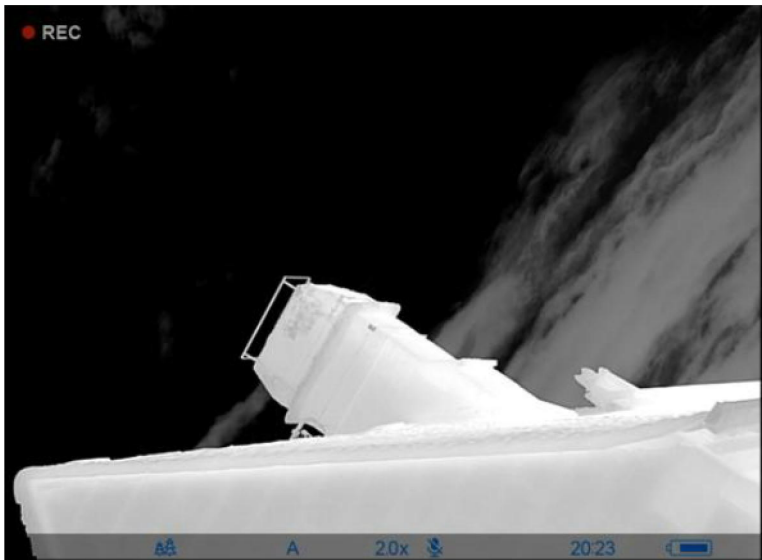
 TECHNICAL SPECIFICATIONS	
Model	HELION 2 XP50 PRO
SKU	77431
Microbolometer	
Type	uncooled
Resolution, Pixels	640x480
Pixel Pitch, µm	17
NETD, mK	< 25
Frame Rate, Hz	50
Optical Characteristics	
Optical Magnification, x	2.5
Smooth Digital Zoom, x	2.5-20
Digital Zoom	x2/x4/x8
Objective Lens	F50 mm, F/1.0
Field of View (Horizontal), °/ m@100 m	12.4 / 21.8
Eye-piece Focus Range, Diopter	±5
Range of Detection, m/y (Deer Type Object)	1800 / 1968.5
Display	
Type	AMOLED
Resolution, Pixels	1024x768
Operational Characteristics	
Power Supply, V	3 – 4.2 V
Battery Type	Li-Ion Battery Pack IPS7
Capacity	6400 mAh
Nominal Output Voltage	DC 3.7 V
External Power Supply	5 V (USB)
Battery Run Time at t=22°C, hours*	8
Level of Protection (acc. to IEC 60529), with Battery Installed	IPX7
Operating Temperature	-25 °C ...+50 °C
Dimensions, mm/inch	242x75x60 / 9.53x2.96x2.36
Weight (without battery), kg	0.5
Video Recorder	
Video / Photo Resolution, Pixels	1024x768
Video / Photo Format	.mp4 / .jpg
Built-In Memory	16 GB
Built-In Memory Capacity	About 5 h video or > 100,000 pictures
Wi-Fi Channel	
Frequency	2.4 GHz
Standard	802.11 b / g
Line-of-Sight Reception Range, m **	up to 15
*Actual operating time will depend to what extent the Wi-Fi and built-in video recorder is used.	
**The reception range may vary depending on various factors: obstacles, other Wi-Fi networks.	
This product is subject to change in line with improvements to its design.	

Figure 11. Thermal Imaging Device Specification – Guide TrackIR-19 Pro

Model	TrackIR 25mm	TrackIR 35mm	TrackIR 50mm	TrackIR Pro 19mm	TrackIR Pro 25mm	TrackIR Pro 35mm
Infrared Detector						
Detector type				VOx		
Detector resolution and pitch	400 × 300, 17 μm			640 × 480, 12 μm		
Spectral range	8 to 14 μm					
NETD	≈50mk @ F1 25°C					
Lens						
Focal length	25 mm; F1.2	35 mm; F1.2	50 mm; F1.2	19 mm; F1.0	25 mm; F1.0	35 mm; F1.0
Focus	Manual					
Field of view	15.4° × 11.6°	11.1° × 8.3°	7.8° × 5.8°	22.9° × 17.2°	17.5° × 13.1°	12.5° × 9.4°
Frame Rate						
Output frame frequency	50 Hz					
Zoom						
Optical zoom	1.7x	2.3x	3.3x	1.1x	1.5x	2.0x
Digital zoom	1 – 4x			1 – 8x		
Visual effect	It's like viewing at a 22" screen at 1 meter					
Power						
Battery type	2 built-in 18650 batteries (6000mAh)					
Battery life	≥ 5 hours			≥ 4.5 hours		
Interface						
USB	Type C (USB 2.0 standard), supporting power supply and data access					
Video interface	micro HDMI					
External expansion	External Display					
Mechanical interface	UNC ¼"-20 (Tripod mounting), Picatinny					
Display						
Display type	0.4" FLCOS					
Resolution	1280 × 960					
Eyeiece	Monocular, exit pupil distance≥10 mm, diopter adjustment: -4 to + 2					
Eyeiece zoom	13.8x					
Video output	Digital video					
Button						
Button functions	Power / Up / Menu / Down / Photo / Video					
Functions						
Smooth zoom	Available					
Screen brightness adjustment	10 levels					
Detector brightness adjustment	10 levels					
Detector contrast adjustment	10 levels					
Image enhancement	Available					
Scene modes	Enhanced, Highlight and Natural					
Ultra power saving mode	Available					
Image capturing	Available					
Video recording	Available					
WiFi	Transmission of real-time video via WiFi for remote control in the 2.4G frequency band and within 15 meters					
Color palettes	Black Hot, White Hot, Red Hot, Iron Red, Blue Hot			Black Hot, White Hot, Adjustable Red Hot, Iron Red, Blue Hot		
Hot spot tracking	Available					
Working indicator	On/Off					
Charging indicator	On/Off					
Compensation modes	Automatic, shutter and scene compensation					
Rough ranging	Available					
Automatic shutdown	Closed, 15, 30 or 60 mins					
Automatic sleep	Closed, 5, 10, or 15 mins					
Language settings	Chinese / English / Russian / German / French					
System						
Time setting	Available					
Watermark settings	Closed, setting of date or date and location					
PIP	Upper left, Upper middle, Upper right, Closed					
Restore to default	Available					
Start up	2 s					
Memory capacity	16 GB					
Environmental						
Operating temperature range	-10 °C to 50 °C					
Storage temperature range	-30 °C to 60 °C					
Humidity	10 % to 95 % non-condensing					
Shock	30 G at 11 ms half sine pulse (as per IEC60068-2-27)					
Vibration	10 Hz - 150 Hz - 10 Hz 0.15 mm (as per IEC60068-2-6)					
Drop	1 m					
Encapsulation	IP66					
Certification	IP66, FCC, CE, RoHS, EAC, un38.3					
Physical						
Weight	≤470 g	≤485 g	≤535 g	≤490 g		≤560 g
Size (L × W × H)	192 × 65 × 71 mm		214 × 65 × 71 mm	192 × 65 × 71 mm		214 × 65 × 71 mm
Standard	Power adapter, USB cable (Type C), micro HDMI cable, lens cap, wrist strap, inner bag, shoulder strap, quick start guide					

Appendix 3: Thermal Imaging Device Fields of View

Table 15. Thermal Imaging Device Fields of View

12 May 2025 - DUSK	
St John's Lodge (B1): southeast NVA: Pulsar Helion 2 XP50 Pro	
St John's Lodge (B2): northwest NVA: Pulsar Helion 2 XP50 Pro	
St John's Lodge (B2): northeast NVA: Guide TrackIR 19 Pro	

02 June 2025 – DUSK

St John's Lodge (B1):
southeast

NVA: Pulsar Helion 2
XP50 Pro



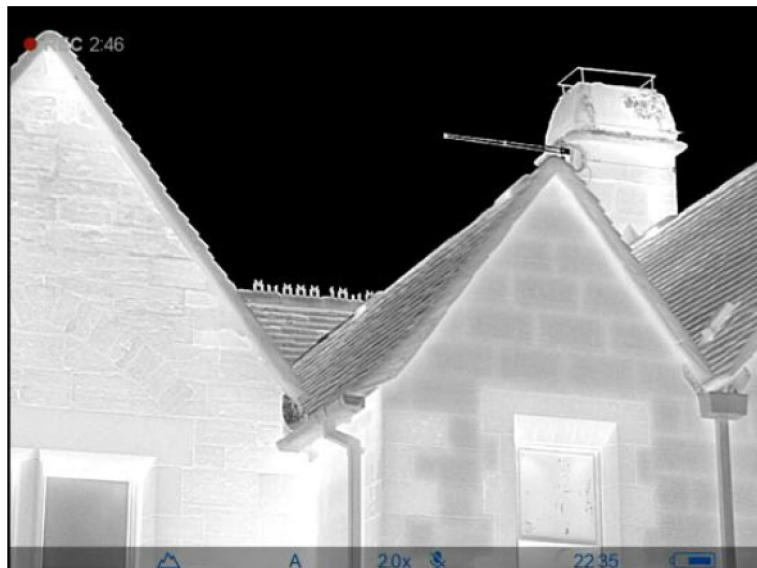
St John's Lodge (B1):
northwest

NVA: Guide TrackIR 19
Pro



St John's Lodge (B1):
northeast

NVA: Pulsar Helion 2
XP50 Pro



23 June 2025 - DUSK

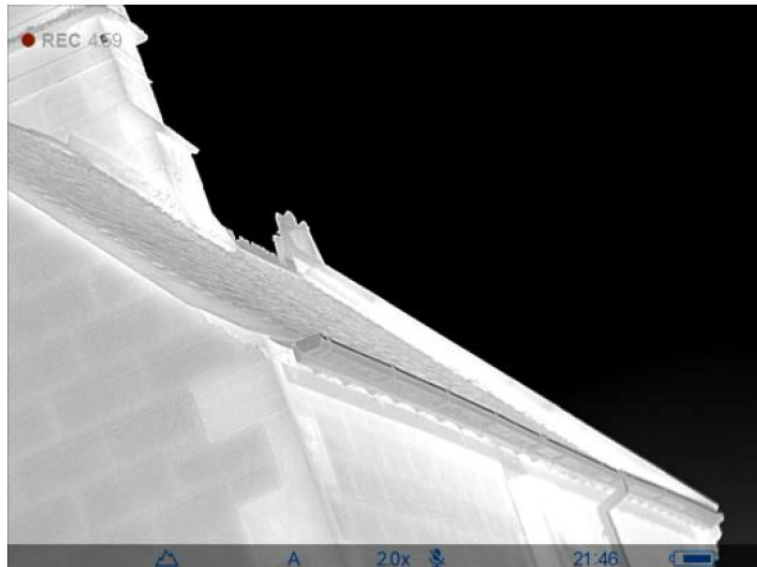
St John's Lodge (B1):
southeast

NVA: Pulsar Helion 2
XP50 Pro



St John's Lodge (B1):
northwest

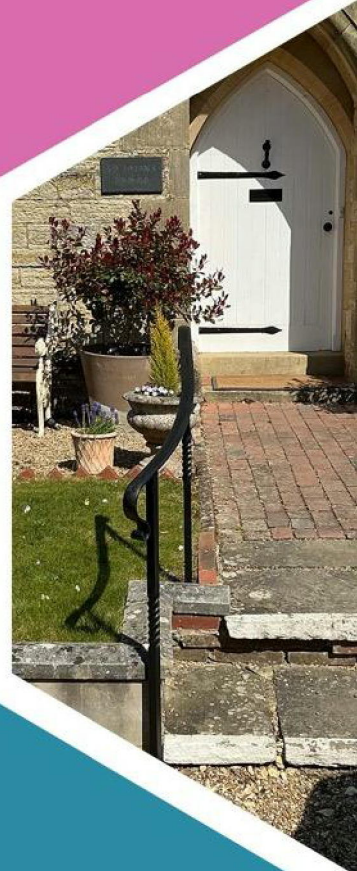
NVA: Pulsar Helion 2
XP50 Pro



St John's Lodge (B1):
northeast

NVA: Guide TrackIR 19
Pro





Full Bat Roost Assessment
St John's Lodge, Lindfield
Report for Mr and Mrs Broad

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