

BERNWOOD ECOLOGY

☎ 01296 728351 · ✉ enquiries@bernwood.net · 🌐 www.bernwood.net

Land off Kestrel Way Luton Bedfordshire



Bat Survey Report

Luton Borough Council

15th December 2023

LBC-KW-23.002 (Issue 1.2)



Proud to be:



Hensmans Farm, Narton End, Swanbourne, Buckinghamshire, MK17 0SL

Limitations

Ecological assessments can be used to draw conclusions as to the likely presence or absence of species (animals and plants), population size, use of the site by animals. Any ecological survey is a snapshot in time and should not be regarded as definitive nor complete.

The preparation of mitigation strategies, consultation exercise and submission of any licence applications cannot be relied upon until approved (licensed) in writing by the Statutory Nature Conservation Organisation. Allowance must be made for both programme and financial change to projects as a result of application failure, amendment, or refusal.

Every professional effort and due diligence have been applied to provide an accurate ecological assessment of the site at the time of the preparation of this report, but no liability can be assumed for omissions, or subsequent changes to design and development. Additional works should be anticipated as surveys and proposals for the site progress.

No responsibility will be accepted for any use of or reliance on the contents of this report by any third party. No responsibility will be accepted for changes or alterations made to this report following submission to Bernwood Ecology's client.

Bernwood Ecology, its employees and associates reserve the right to report on any incidents or actions [deliberate or reckless] that result in a breach of licence conditions or are in contravention of existing legislation.

Quality Assurance

Version 1.2 15th December 2023

Updated site proposals plan (Appendix 2)

Editor: J. Sowden, MSc. ACIEEM, Senior Ecologist

Version 1. 20th September 2023

Author: S. Sanchez, MSc. ACIEEM, Ecologist

Editor: J. Sowden, MSc. ACIEEM, Senior Ecologist

Executive Summary

Bernwood Ecology have undertaken a Preliminary Roost Assessment and a bat emergence survey of a substation within land off Kestrel Way in Luton. The purpose of the survey was to identify any actual or potential bat roosting interest on site, the suitability of the substation to support bat roosts, and any impacts on any roosts from the proposed development. The proposals for the site include the construction of a new Special Educational Needs school along with associated access, parking and landscaping which will require the demolition of the existing substation building.

The Preliminary Roost Assessment undertaken by Bernwood Ecology determined the substation to have a 'Negligible' potential to support roosting bats due to a lack of potential roosting/access features for bats. However due to slight access restrictions, an emergence survey was conducted to provide a high level of confidence in the negligible assessment.

A dusk emergence survey of the building was conducted to determine presence/ absence of roosting bats. The survey found no evidence of bats roosting within the building, and as such, it can be determined that the proposed work will have no impact upon roosting bats.

Very low levels of background bat activity were recorded during the survey, concentrated on the treeline across the street to the north. Recommendations are made to include commuting, foraging and roosting resources for the local bat population as part of the proposals.

There is a risk that nesting birds will utilise the substation; recommendations are made to avoid the damage or destruction of active nests.

Any additional or changes in artificial lighting as part of the proposals must not increase light levels on nearby habitats of ecological value, including the northern treeline, other surrounding trees, and gardens.

Table of Contents

1. Introduction and Objectives	1
Previous Ecological Survey	1
2. Legal Protection.....	1
European Protected Species	1
Wild Birds	2
3. Planning.....	3
4. Methodology.....	4
Preliminary Roost Assessment	4
Bat Emergence Survey.....	5
Biosafety and Biosecurity	5
Data Analysis.....	6
5. Constraints and Limitations	6
Historical Records.....	6
Safe Access	7
Digital Mapping	7
Mobile Species	7
6. Results	7
Preliminary Roost Assessment	7
Bat Emergence Survey.....	9
7. Discussion and Conclusions.....	12
8. Recommendations.....	12
Changes in Proposal Designs	15
Age of Survey Data.....	15
9. References and Further Reading.....	16
Appendix 1.....	17
Appendix 2.....	18
Appendix 3.....	19
Appendix 4.....	21
Appendix 5.....	22

1. Introduction and Objectives

- 1.1 Bernwood Ecology were instructed by Luton Borough Council on 3rd August 2023 to undertake a Preliminary Roost Assessment and bat emergence survey of a substation building within an area of land to the south of Kestrel Way, Luton, LU4 0YB (centred at Grid Reference: TL0431 2414) (Appendix 1).
- 1.2 The aims of the Preliminary Roost Assessment (PRA) are to ascertain whether bats are using the building for roosting, through either the identification of evidence of bat presence or the suitability of the building to support roosting bats. The aims of the emergence survey are to provide further information as to whether bats are using the building for roosting, determine entry/ exit points, and classify the roost through identification of species, numbers, and usage if present.
- 1.3 The proposals are for the site to form a new Special Educational Needs (SEN) school along with associated access, parking and landscaping (Appendix 2). This will require the demolition of the substation structure.

Previous Ecological Survey

- 1.4 A Preliminary Ecological Appraisal (PEA) was conducted of the wider site by Bernwood in June 2023 (see Bernwood Ecology's *Preliminary Ecological Appraisal* issued 28th July 2023). The survey found no potential roosting features for bats externally however internal access was not possible at the time of the survey which prompted recommendations for a PRA (including internal inspection and one emergence survey to be conducted on the building).

2. Legal Protection

- 2.1 The finding of this report represents the professional opinion of qualified ecologists and does not constitute professional legal advice. The client may wish to seek professional legal interpretation of the relevant wildlife legislation cited in this report.
- 2.2 The following information is a simplified summary of the legislation and the full text of the Wildlife & Countryside Act 1981 (as amended) (WCA 1981), the Conservation of Habitats and Species Regulations 2017 (2017 Regulations) and other legislation together with current published guidelines should be consulted.

European Protected Species

- 2.3 It is understood that 2017 Regulations will be further amended due to the departure of the UK from the EU on 31st January 2020. From that date the provisions in The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 will apply (see <https://www.legislation.gov.uk/ukxi/2019/579/contents/made>). Existing

protection for habitats and species including standards and assessment procedures will remain as they have been prior to the UK leaving the EU.

- 2.4 The 2017 Regulations and The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 should be read together until further clarification or changes are made available by the UK Government or legal case law.
- 2.5 All European Protected Species (EPS; great crested newts, bats, otter, white clawed crayfish, hazel dormice, etc.) are protected under the 2017 Regulations and the WCA 1981. It is an offence under section 41 of the 2017 Regulations to:
- deliberately capture, injure or kill any wild animal of a EPS;
 - deliberately disturb a EPS (including in particular any disturbance which is likely to impair their ability to survive, breed or reproduce, rear or nurture their young; or to hibernate or migrate; or which affects significantly the local distribution or abundance of the species);
 - deliberately take or destroy the eggs of a EPS;
 - damage or destroy a breeding site or resting place of a EPS; or,
 - possess, control, transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal of a EPS, or any part of, or anything derived from a EPS.
- 2.6 Section 9(4) (b) and (c) of the WCA 1981 makes it an offence to:
- intentionally or recklessly disturb a EPS while it is occupying a structure or place which it uses for shelter or protection; or,
 - intentionally or recklessly obstruct access to any structure or place which any EPS uses for shelter or protection.
- 2.7 In order for otherwise illegal acts to proceed lawfully, an appropriate licence must be sought under the 2017 Regulations and WCA 1981. Licences for the purpose of development are currently determined by Natural England and must include an appropriate mitigation and monitoring scheme to secure the “favourable conservation status” of the species in the local area.

Wild Birds

- 2.8 Wild birds are protected under the WCA 1981. The basic principle of the Act is that all wild birds, their nests and eggs are protected by law and some rarer species are afforded special protection. Wild birds are defined as those resident in or visitors to Great Britain, in a wild state (does not include poultry or game bird). Section 1(1) of the WCA 1981 states that it is an offence to intentionally or recklessly:
- kill, injure or take any wild bird;
 - take, damage or destroy the nest of any wild bird while that nest is in use or being built; or

- take or destroy an egg of any wild bird.
- 2.9 Section 1(2) of the WCA 1981 states that it is an offence to possess or control any live or dead wild bird or any part of or anything derived from a wild bird or an egg or part of an egg of a wild bird.
- 2.10 It is an offence under section 1(5) of the WCA 1981 to intentionally or recklessly:
- disturb any wild bird included in schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or,
 - disturb dependent young of such a bird.

3. Planning

- 3.1 The local planning authority has the power to request information under Article 4 of the Town and Country (Planning Applications) Regulations 1988 (SI1988.1812) (S3) which covers general information for full applications.
- 3.2 The National Planning Policy Framework (NPPF) revised in 2021 requires the planning system and policies to balance economic, social and environmental factors of sustainable development. The environmental component of the NPPF states that any planning application must: *'contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy'*. Chapter 15 (Conserving and Protecting the Natural Environment) includes the methods by which this is to be achieved, including:
- protecting and enhancing valued landscapes, sites of biodiversity or geological value;
 - recognising the intrinsic character and beauty of the countryside; and,
 - minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.
- 3.3 Planning permission should be refused if: significant harm from a development cannot be adequately avoided, adequately mitigated, or as a last resort compensated for. The presumption in favour of development does not apply where development requiring appropriate assessment under the Habitats Directive is being considered, planned or determined. Planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscape and nature conservation. Please see updated Planning Practice Guidance <https://www.gov.uk/government/speeches/local-planning>.

- 3.4 Section 99 of ODPM Circular 06/2005 states: 'It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision. The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances, with the result that the surveys are carried out after planning permission has been granted. However, bearing in mind the delay and cost that may be involved, developers should not be required to undertake surveys for protected species unless there is a reasonable likelihood of the species being present and affected by development. Where this is the case, the survey should be completed and any necessary measures to protect the species should be in place, through conditions and/ or planning obligations, before permission is granted'.
- 3.5 Local authorities have a duty to consider the three derogation 'tests' of the Habitats Directive: no satisfactory alternative, imperative reasons of overriding public interest (including those of a social or economic nature or beneficial consequences for the environment) and that the favourable conservation status of the species will be maintained. If any of these requirements are not met, the local authority should refuse planning permission regardless of any commitment to obtain a Natural England licence.

4. Methodology

Preliminary Roost Assessment

- 4.1 The objective of the Preliminary Roost Assessment (PRA) is to undertake a daytime inspection of the structure to assess whether there are actual or potential bat roosts present by searching for evidence of bat use and assessing the suitability of the structure to support bat roosts. If evidence of bats is found, the assessment searches for evidence to indicate:
- which species are present;
 - an indicative roost size;
 - roost access point(s);
 - the roost type(s); and,
 - whether further survey effort is required in relation to the proposals.
- 4.2 The PRA was carried out by S. Sanchez, MSc. ACIEEM and M. Davis BSc., on 9th August 2023, following the Bat Conservation Trust (BCT) Good Practice Guidelines (Collins, 2016). The building was systematically searched internally and externally (from the ground) for evidence indicating the presence of bats (live and dead bats, staining at potential roost entry points, feeding remains, droppings and urine marks) and

assessed for suitability to support bat roosts through the identification of potential roosting features and potential bat access points.

- 4.3 Equipment available for use during the PRA included high-powered torches, binoculars, digital camera, and sample jars (for collecting droppings for subsequent DNA analysis if required).
- 4.4 Weather at the time of the PRA was sunny and clear, with temperatures around 18°C.

Bat Emergence Survey

- 4.5 A dusk bat emergence survey was undertaken on 9th August 2023 (Table 1). The survey was carried out by S. Sanchez and M. Davis in line with best practice guidelines (e.g., English Nature, 2004; Natural England, 2016; and Collins, 2016). Surveyors were positioned to cover all potential roost entry/ exit points where possible to determine presence/ absence of bat use.
- 4.6 The survey was conducted with Anabat Walkabout full spectrum handheld detector and supported by a Wildlife Acoustics SM4-BAT-FS remote bat detector. Details of the remote bat detector settings used are included (Table 2). Canon XA20, Canon XA30, paired with infrared lights, were used.

Biosafety and Biosecurity

- 4.7 All fieldwork is undertaken in line with the current government and professional (CIEEM, BCT, IUCN, etc.) COVID-19 guidelines at the time, including maintaining physical distancing between surveyors and wildlife as appropriate.
- 4.8 Hygiene and biosecurity measures set out with Bernwood Ecology's Health and Safety Policy are strictly adhered to, including regular thorough handwashing where possible and, where not, regular use of an appropriate viricidal hand sanitiser.

Table 1. Bat activity survey details.

Date	Start Time	End Time	Sunset/ Sunrise	Surveyor Initials	Weather Conditions
09/08/2023	20:22	22:09	20:47	SS, MD	18-12°C, dry, 5% cloud cover, no wind

Table 2. Wildlife Acoustics SM4-BAT-FS settings.

Settings	Standard
Gain	12dB
16k High filter	Off
Sample rate	256kHz
Min duration	1.5ms
Maz duration	None
Min trigger frequency	16kHz
Trigger level	12db
Trigger window	3.0s
Max length	15s
Compression	None
Batteries	1.5v Alkaline

Data Analysis

- 4.9 All sonograms recorded using handheld bat detectors were identified by Bernwood Ecology in the field where possible. Where species identification in the field was not possible, Bernwood Ecology used SonoBat 30 (v. 23.2.24) for sonogram visualisation and analysis.
- 4.10 All recordings from remote bat detectors were analysed using SonoBat 30 (v. 23.2.24); an automated call extraction and identification software, then manually verified by Bernwood Ecology.

5. Constraints and Limitations

Historical Records

- 5.1 Environmental records can provide an indication of the likely presence of a species on, or within proximity, to the site. The absence of records for protected species and sites does not necessarily indicate absence. The use of historical environmental records is not a substitute for appropriate surveys at the correct time of year when informing land use change and development proposals.
- 5.2 Qualifications for historical records, e.g., if a badger record is of a road casualty or of a sett, may not always be known.
- 5.3 Data search accuracy is variable and will often range from 10km to 1m. Most commonly, accuracy will be within 10m. The original raw data from data searches should be consulted where the record accuracy is needed.

Safe Access

- 5.4 Part or all the site may be considered to be inaccessible following an assessment of risk and therefore the survey may be constrained. Risks that may limit the survey effort include structurally unsafe structure(s) (including roof joists), confined spaces and dangerous egress and ingress points, asbestos, sharps, livestock, and hostilities from members of the public. Details of any access constraints are provided within the results of the report.

Digital Mapping

- 5.5 Every effort is made to ensure mapping accuracy; however, the exact locations of features should not be relied upon.

Mobile Species

- 5.6 Bats are a highly mobile species and move throughout a landscape often using multiple roost sites (depending on the species). Bats may be found in any suitable roosting cavity or void at any time of the year.

6. Results

Preliminary Roost Assessment

- 6.1 The building subject to the survey is a brick-built substation situated in the north western corner of the site, which likely dates from when the radio mast was constructed (approximately 1980/90's) (Figure 1). It has a flat, likely bitumen covered roof and well-sealed metal doors with two rooms sealed off with metal grates, constraining access but allowing visual inspection. There are no windows. There are possibly some small gaps around the edge of the roof where a metal capping overlaps the wall due to slight warping (Figure 2).
- 6.2 A hole in the north eastern grate, though potentially large enough for a bat to pass through, was cobwebbed over which indicates no recent use but cannot be discounted as a potential access point inside the structure (Figure 3). There are three tightly fitted vents on the eastern elevation of the substation, all sealed or otherwise closed with heavy cobwebbing (Figures 4-6). No potential roosting features (PRFs) for bats were seen externally.
- 6.3 Internally, the walls were in good condition and with heavy cobwebbing, indicating a lack of disturbance (Figure 7). A hole in the wall was found in the north western room, but it did not appear to lead to the outside of the building, suggesting a cavity wall (Figure 8). This PRF is not considered accessible to bats due to the sealed nature of the building. No internal access was possible in a small void above a closet due to

lack of an access hatch (Figure 9), or in the south western room as it was locked at the time of the survey.

- 6.4 No evidence of bats (droppings, urine staining, etc.) was found internally or externally. A summary plan of the findings of the Preliminary Roost Assessment can be found in Appendix 3.



Figure 1. Substation building (image facing north east).



Figure 2. Roof cap has warped slightly, possibly creating small (<10mm) gaps.



Figure 3. Hole in the grate (cobwebbed over).



Figure 4. External view of vents on eastern elevation.



Figure 5. Internal view of vent on eastern elevation (sealed).



Figure 6. Internal view of vent on eastern elevation (closed and cobwebbed over).



Figure 7. Interior in good condition.



Figure 8. Hole in wall suggests cavity walls are present.



Figure 9. Internal inspection above small closet not possible due to lack of an access hatch.

Bat Emergence Survey

- 6.5 Survey conditions were optimal for the survey to be considered valid under the BCT Good Practice Guidelines (Collins, 2016) and surveyor positions provided adequate coverage of all aspects of the structure, assisted with high-quality technology (infrared cameras). The emergence survey was able to determine bat use with a high degree of confidence.
- 6.6 No bats were observed emerging from the building. Background bat activity was very low, with individual common pipistrelle *Pipistrellus pipistrellus* passes recorded across Kestrel Way from approximately 45 minutes after sunset. Details of the emergence survey can be found in Table 3, and a plan of summarised bat activity in Appendix 4.
- 6.7 The remote bat detectors recorded a total of five bat passes: three common pipistrelle, one soprano pipistrelle *Pipistrellus pygmaeus*, and one noctule *Nyctalus noctula* (Table 4). Details of the static detector recordings are in Appendix 5.

- 6.8 A fox *Vulpes vulpes* was seen on site during the survey. The substation offers limited nesting opportunity for common garden birds (wrens, tits, etc.).

Table 3. Summary of bat emergence survey results.

Time	Species	Description of activity
21:28 – 21:48	Common pipistrelle	Most recordings made from the northern survey position, with one bat seen in flight across the street along the tree line north of the site.

Table 4. Summary of remote bat detecting results by species, genus, or group.

Species	Summary
Barbastelle	There were no recordings.
<i>Myotis</i> species	There were no recordings.
'NSL' group	There was one recording, verified to be a noctule.
Brown long-eared bat	There were no recordings.
Common pipistrelle	The most frequently recorded species with three recordings.
Soprano pipistrelle	There was one recording.

7. Discussion and Conclusions

- 7.1 No evidence of bat roosts was found on or within the substation during the PRA. The building is assessed as providing 'Negligible' potential to support roosting bats under the Bat Conservation Trust's Good Practice Guidelines (2016).
- 7.2 No bats were recorded roosting in the substation during the emergence survey. Background bat activity levels were very low and restricted to the tree line across the street to the north. Recommendations are made to implement a late discovery protocol and for best practice measures during demolition and construction activities.
- 7.3 Artificial light levels at the site are currently very low. Any lighting required as part of the proposals must ensure it does not have a detrimental effect on nocturnal wildlife including local bat populations and must be carefully designed to minimise light spill onto surrounding habitats.
- 7.4 It is recommended that habitats to be created as part of the landscaping proposals include features to increase the abundance of invertebrate prey such as water features, nectar-providing planting and linear features such as native hedges for additional foraging and commuting resources for bats.
- 7.5 A fox was seen moving through the site during the survey. A site walkover before works commence and best practice measures are outlined below to ensure non-flying mammals are protected from harm during the proposed works.
- 7.6 The presence of nesting birds within the site during the spring and summer months is considered likely; these could be common garden birds utilising the substation. Timing demolition and clearance works to avoid the months in which nesting birds are most likely to be present is recommended.

8. Recommendations

- 8.1 The ecological mitigation hierarchy must be followed by all elements of the project, from design, to construction, to end use, to ensure there is a net gain to biodiversity on site and the favourable conservation status of protected species is maintained. The mitigation hierarchy follows:
- *Avoid*: avoid impacts on biodiversity as a priority.
 - *Minimise*: minimise impacts that cannot be completely avoided, through alternations to design, use, scale, location, timing of phases, etc.
 - *Mitigate and compensate*: undertake works which will have an impact by implementing safeguarding measures, such as using an Ecological Clerk of Works (ECoW) where there are risks to wildlife. Provide compensation to replace habitats that have been lost as a consequence of proposals.

- *Enhance*: Provide additional habitats and features for wildlife to ensure biodiversity net gain. Habitat offsetting may be required where net biodiversity gain cannot be secured within the site boundary.
- 8.2 This report is to be read in conjunction with Bernwood Ecology's *Preliminary Ecological Appraisal* (issued: 28th July 2023) for the site, including its recommendations. The recommendations pertaining to bats, non-flying mammals and nesting birds are repeated below. It must be noted that our recommendations concerning artificial lighting have been updated in line with the guidance updated in the interim.
- 8.3 Any changes in the bat use of the building will require a full review of the impacts, and potentially a revision to the proposals. This may include seeking a licence from Natural England before any works can commence. This could cause additional time delays and costs for the repair works.
- 8.4 In the unlikely event that bats are identified on site during construction activities, works are to cease immediately, and the advice of an ecologist sought.
- 8.5 It is recommended that to provide enhancements for local bat populations, a minimum of four integrated bat boxes are incorporated into the proposed new SEN building. A suitable box would be the Segovia Build-In Woodstone Bat Box (or equivalent) and these should be sited at least 3m above ground and ~1m away from windows and doors, ideally on a south- or west-facing aspect.
- 8.6 There must be no additional lighting on site that will spill artificial light onto any new or possible existing bat roost habitat (e.g., bat boxes, adjacent buildings) or habitats of ecological value (northern treeline, other surrounding trees, gardens, etc.). Published guidance on the use of lighting in relation to bats (Institute of Lighting Professionals and the Bat Conservation Trust, 2023) should be used to guide any necessary lighting for health and safety purposes, such as:
- All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used.
 - LED luminaires to be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
 - A warm white spectrum (ideally <2700 Kelvin) to be adopted to reduce blue light component.
 - Luminaires to feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2013).
 - Internal luminaires can be recessed (as opposed to using a pendant fitting) where installed in proximity to windows to reduce glare and light spill.

- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.
 - Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.
 - Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered.
 - Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt.
 - Where appropriate, external security lighting should be set on motion-sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1- or 2-minute timer is likely to be appropriate.
 - Use of a Central Management System (CMS) with additional web-enabled devices to light on demand.
 - Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS.
 - The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
 - Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.
- 8.7 A site walkover is recommended no more than two weeks before works commence to identify whether any mammal holes have been established within the site boundary.
- 8.8 General measures are to be implemented to avoid the risk of harm to non-flying mammals before and during the construction activities:
- During construction, excavations are to be backfilled or covered overnight or created with a shallow sloping side to allow any inadvertently captured wildlife to escape unaided.
 - No fires are to be lit on site.
 - No food is to be left on site overnight that may attract scavenging wildlife into the working area.

- All litter is to be stored in suitable covered bins or taken home to reduce the likelihood of litter being distributed into the local area by the weather.
- If any suspected mammal holes are discovered during the works, cease activity in the vicinity and contact the project ecologist for advice.
- Avoidance of creating temporary debris or brash piles in which wildlife may seek shelter.

8.9 In order to ensure that active nests are not damaged or destroyed during site clearance and construction works, it is recommended that the removal of the radio mast, demolition of the substation building, and vegetation clearance is conducted during the autumn or winter months (i.e., September-February) when birds are least likely to be nesting, subject to other protected species recommendations such as bats. Works undertaken outside of this period will require a nesting bird check to be conducted by a suitably experienced ecologist no more than 24 hours prior to works starting. If active nests are observed, activity within the vicinity must cease and an appropriate safe zone around the nest established until the young have been verified to have fully fledged by the ecologist and the nest is no longer active.

Changes in Proposal Designs

8.10 Any material changes in the proposed designs as shown in Appendix 2 will require the impacts on ecology to be re-assessed.

Age of Survey Data

8.11 It is accepted that ecological surveys have a limited period of validity due to changing habitats and the transient behaviours of some UK wildlife species. Delays on the progression of the project beyond 12 months will require the surveys to be repeated (CIEEM, 2019).

9. References and Further Reading

Bat Conservation Trust (2022) Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys.

CIEEM (2015). What to expect from a bat survey: A guide for UK homeowners. [online] http://www.cieem.net/data/files/Bat_Survey_Guidelines_for_UK_Home_Owners_2015.pdf

CIEEM (2019). Advice Note: on the lifespan of ecological reports & surveys. [online] <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

Collins, J. (ed.) (2016). Bat surveys for professional ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

Institution of Lighting Professionals and Bat Conservation Trust (2023). Bats and artificial lighting at night. [online] <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>

Matthews, 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: technical summary. A report by the Mammal Society under contract to Natural England, Natural Resources Wales and Scottish Natural Heritage. Natural England, Peterborough.

Mitchell Jones, A. J. (2004). Bat mitigation guidelines. English Nature, Peterborough.

Natural England (2021). Protected species and site: How to review planning proposals. [online] <https://www.gov.uk/guidance/protected-species-and-sites-how-to-review-planning-proposals>

Russ, J. (2012). British bat calls: A guide to species identification. Pelagic Publishing, Exeter.

Scott, C. & Altringham, J. (2014). WC1015 Developing effective methods for the systematic surveillance of bats in woodland habitat in the UK. Downloadable from: <http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&Completed=0&ProjectID=178>

Stone, E. L. (2013). Bats and lighting: Overview of current evidence and mitigation.

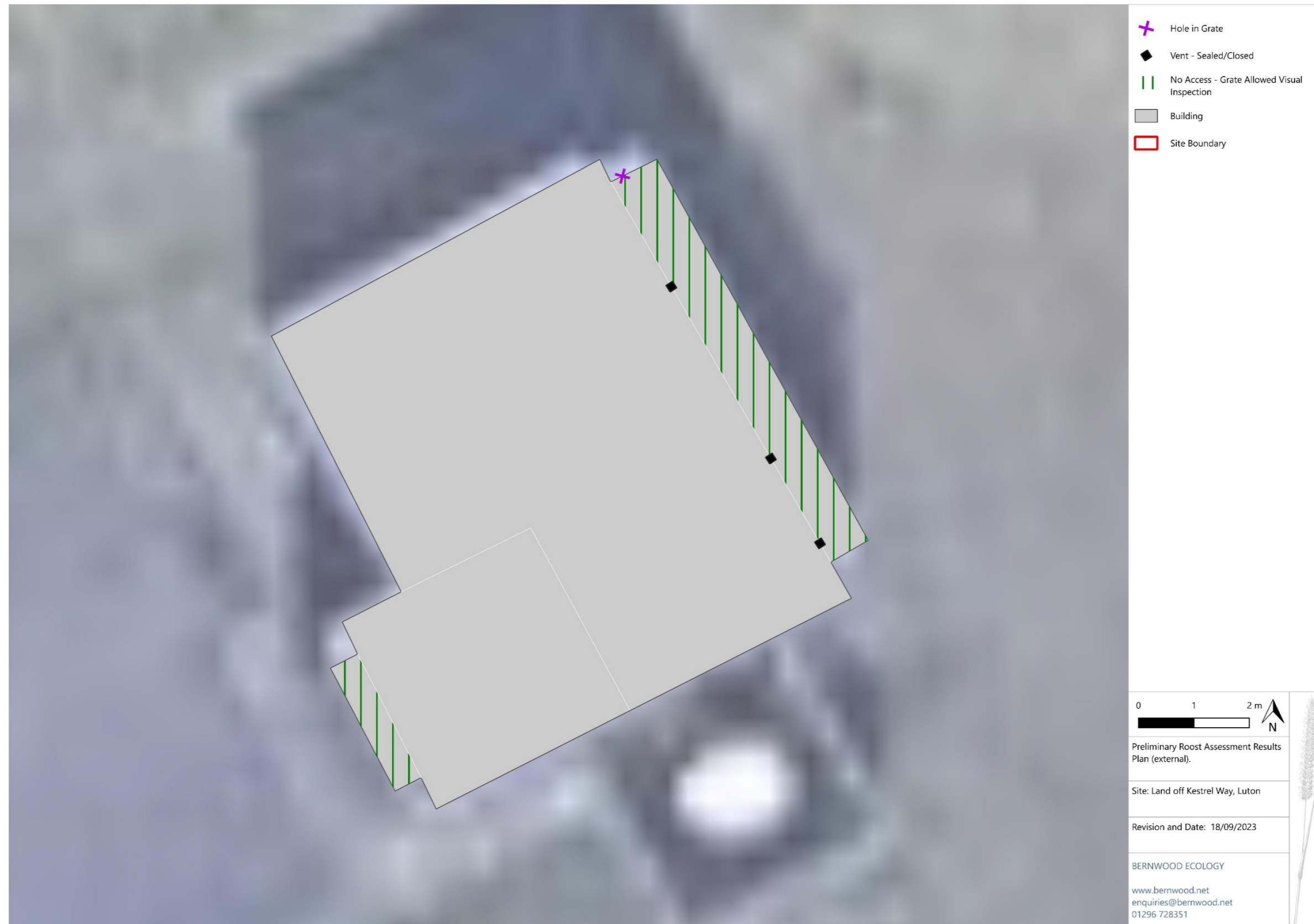
Appendix 1. Site location.

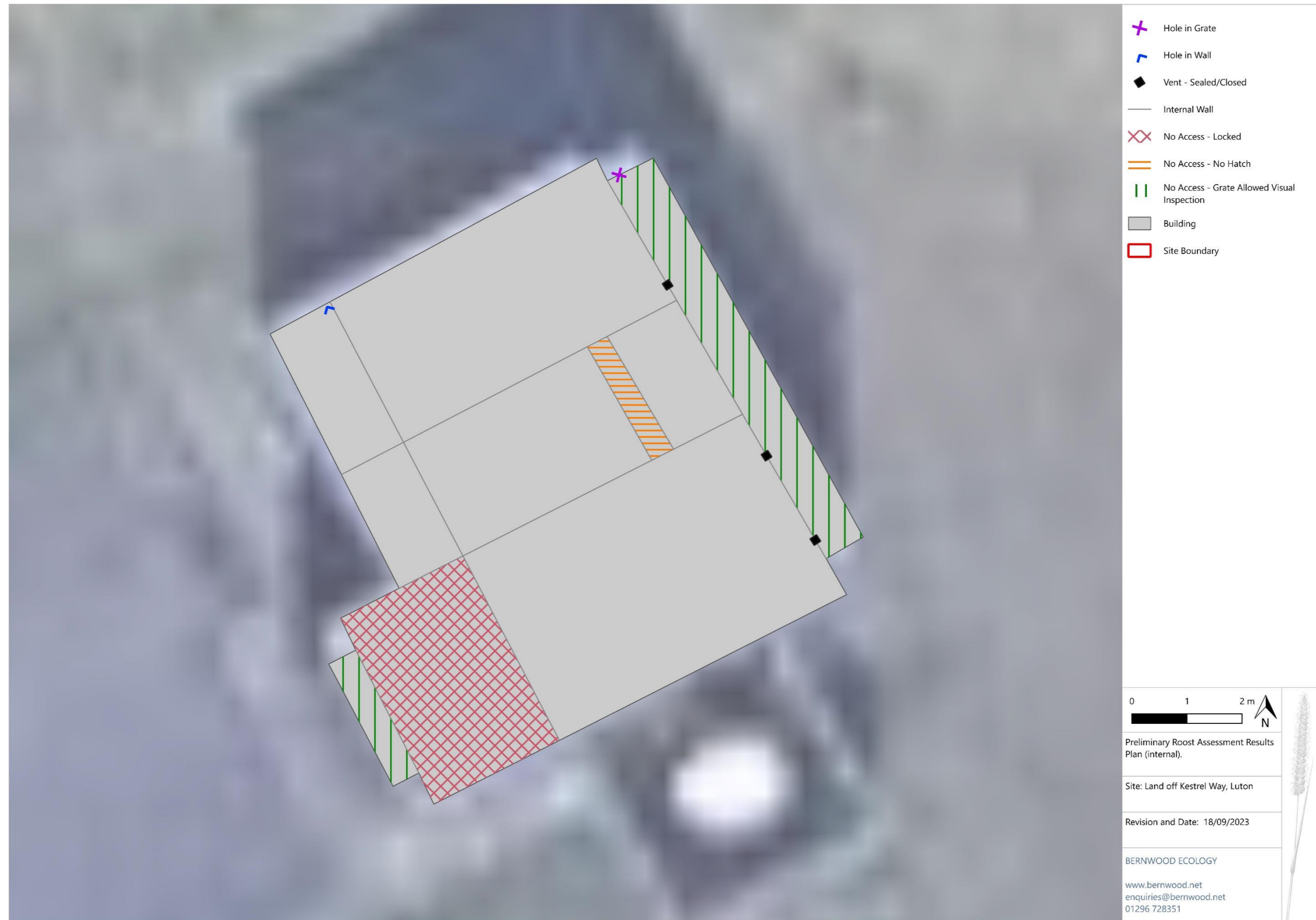


Appendix 2. Proposals.



Appendix 3. Preliminary Roost Assessment summary plan.





Appendix 4. Bat emergence survey summary plan.



Appendix 5. Summary of remote bat detector recordings.

The quantity of recordings does not necessarily indicate levels of bat activity, as other noises may also be recorded. Most calls (barbastelle, *Myotis* sp., 'NSL' and long-eared bat) verified for accuracy.

Location	ID	Recording period	No. of recordings	Detection probability	Barbastelle	<i>Myotis</i> sp.	'NSL'	Long-eared bat	Common pipistrelle	Soprano pipistrelle
					>0.8	>0.5	>0.9	>0.5	>0.9	>0.9
North east of the substation	1	09/08/23 20:08 to 09/08/23 21:57	47	No. of calls	0	0	1	0	3	1