

Bat Nocturnal Survey

Pasteur, F & A

Cedar Lodge

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REVISION HISTORY

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DISCLAIMER

It should be noted that the information above provides details of the Site's current ecological situation. In the event that the proposed development does not commence within 12 months of the date of this report, further advice should be sought from a suitably qualified ecologist as to whether the information provided requires updating in light of changing ecological conditions.

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1. INTRODUCTION

Terms of Instruction

- 1.1 This report has been commissioned by Frances & Alex Pasteur. It provides further detail on the likely usage of a series of buildings at Cedar Lodge, Steeple Aston to support roosting bats. It builds on a previous Preliminary Ecological Appraisal of the property

Report Limitations

- 1.2 This is an ecological report and as such no reliance should be given to comments relating to buildings, engineering or other unrelated matters.

Documents Provided

- 1.3 The following documentation has been produced by Nicholsons Lockhart Garratt to inform the redevelopment of the Site:
- Concept – Masterplan, Cedar Lodge, Steeple Aston, dwg no. Pasteur.NLGD.22.1.01, Rev C, 17/06/2022.
 - Concept Plan – Pool Area, Cedar Lodge, Steeple Aston, dwg no. Pasteur.NLGD.21.1.03, Rev C, 17/06/2022.
 - Concept – West Garden, Cedar Lodge, Steeple Aston, dwg no. Pasteur.NLGD.22.1.02, Rev C, 17/06/2022.

Site Description

- 1.4 The study area (referred to hereafter as “the Site”) is located at Cedar Lodge, North Side, Steeple Aston in Oxfordshire, and centred at Central Grid Reference SP 47468 25957. The assessment covered the whole of the Site, which is approximately 1.93ha in area.
- 1.5 At the time of the assessment the Site comprised the main house of Cedar Lodge, a series of disused stable buildings that have been converted to living quarters and storage areas, and the private garden area of Cedar Lodge comprising lawned grassland with mature shrubs, trees, hedgerow and ponds. A field of sheep pasture is present east of the garden.
- 1.6 The Site was bordered to the north by North Side (a village road), and further private residential gardens to the east, west and south. The wider landscape beyond Steeple Aston is dominated by arable farmland intersected by hedgerows; these provide connectivity to further habitats of biodiversity interest such as small pockets of woodland, and further afield mature parkland and the River Cherwell and Oxford Canal corridors.
- 1.7 The Site location plan is provided below at **Figure 1** and a survey boundary plan is provided below at **Figure 2**.

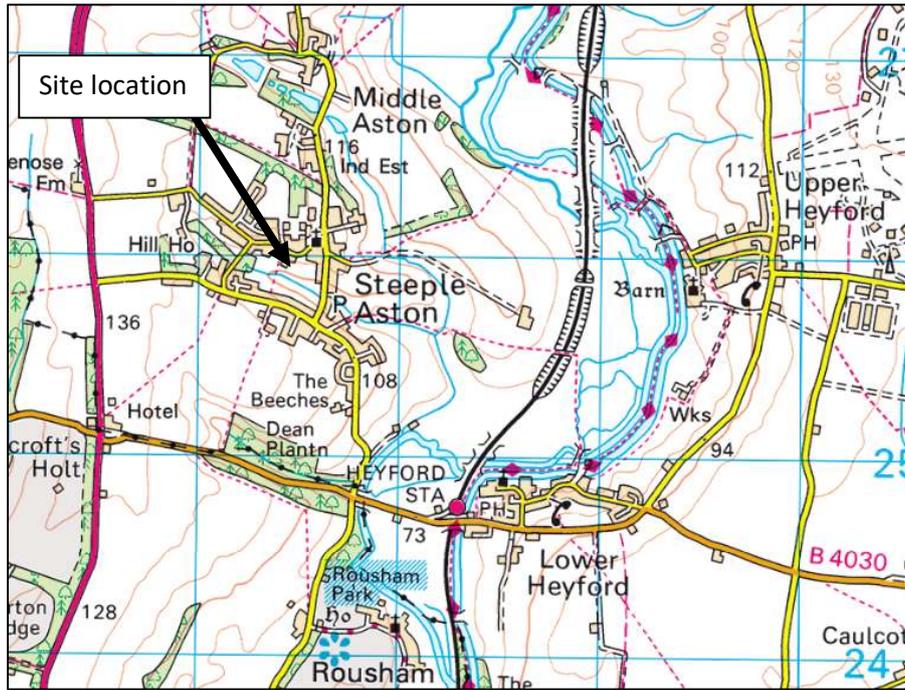


Figure 1: Site location plan

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Figure 2: Building layout plan (from Phase 1 map Ref: 22-0761, Nicholsons Lockhart Garratt)

Aim of the Study

- 1.8 The purpose of this report is to provide further assessment of the suitability of the Site for bats and to identify whether the Site is being used by roosting bats. This builds on a separate

Preliminary Ecological Appraisal (including building assessment) undertaken in June 2022, which comprised of a daytime inspection and evaluation of these structures for bats (ref. 22-0480).

Proposed Development

- 1.9 The redevelopment of the Site will include the renovation of the stables at the west of the Site to become improved living quarters and a pool building and the addition of an outdoor 'natural' swimming pool which will replace an allotment area. The east of the Site will be subject to further tree planting and the addition of an informal vegetable garden within a pasture field as well as the conversion of a timber storage lean-to to a potting shed (hereafter referred to as the Proposed Development).
- 1.10 No works are anticipated to the main property (Cedar Lodge) itself, or the separate two storey accommodation adjacent to the north of the study area.

2. METHODOLOGY

Nocturnal Surveys

- 2.1 The nocturnal survey methods used were based on survey guidelines published by the Bat Conservation Trust (2016), referred to hereafter as the “industry guidelines”.
- 2.2 As buildings B1, B2 and B3 were assessed as up to “High” suitability for roosting bats during their initial assessment in June 2022, in line with the industry guidelines two emergence surveys and one dawn re-entry survey were undertaken.
- 2.3 The nocturnal bat surveys were conducted between 2nd August 2022 and 15th September 2022 in suitable weather conditions (dry, temperature between 23-12 degrees Celsius and light winds of maximum Beaufort scale 3). Further detail is provided in Table 1 below.

Table 1: Summary of survey effort

Date	Type of Survey	Timings	Atmospheric Conditions
02/08/2022	Dusk emergence survey	20:43 (start) 22:28 (finish) Sunset (20:58)	BFT 2-3, 19-21°C, 7/8 cloud cover
31/08/2022	Dusk emergence survey	19:40 (start) 21:25 (finish) Sunset (19:55)	BFT 2-3, 18-19°C, 5-8/8 cloud cover
15/09/2022	Dawn re-entry survey	05:09 (start) 06:39 (finish) Sunrise (06:39)	BF 2-3, 12-13°C, 8/8 cloud cover.

- 2.4 As part of each assessment, four surveyors were located around the buildings B1-B3 to ensure comprehensive coverage of each aspect with potential bat access features. Each survey was led by experienced bat surveyors, and where possible a surveyor holding a Natural England bat licence. During the first dusk survey, a surveyor was placed in the garden of the next-door property to ensure the western aspects of the buildings were fully covered.
- 2.5 Surveyors were equipped with ultrasound detectors (either Echo Meter Touch Pro 2 with iPads or Anabat Scout) to listen for and record any bat calls. Notes were also taken on time and direction of any bat passes experienced, and brief details of behaviour and any bat emergences.
- 2.6 The survey was also supplemented by the use of a Sony FDR-AX35 infrared camera with Nightfox illuminator; this was installed on the south-eastern corner of building B3 (looking north) during the initial survey, and east of Building B1 (looking south-west) during following surveys to maximise coverage of identified potential access features.
- 2.7 The dusk emergence surveys commenced 15 minutes before sunset and concluded at least 90 minutes afterwards. The dawn re-entry survey commenced 90 minutes before sunrise and concluded 10 minutes after sunrise after 15 minutes with no bat activity.
- 2.8 Analysis from the detectors was later manually analysed using Wildlife Acoustics Kaleidoscope software. Sonograms from records were compared against the reference classifiers and example sonograms for different bat species presented in the book - British Bat Calls (Russ,

2013). All recorded camera footage was also reviewed using VLC media player with motion detection.

Field Survey Limitations

- 2.9 It was not possible to view a central portion of the eastern aspect of the B2 roof from any angle due to the presence of a plastic overhang and adjacent tall hedge. Surveyors were placed to maximise the area of this aspect able to be viewed and instructed to record details of bats commuting in the wider vicinity of the structures, however it is possible bats emerging from tiles on this portion of the building may have been missed.
- 2.10 It was not possible to gain access to the neighbouring property during the dusk survey on 31st August or the dawn survey on 15th September; surveyor locations during this visit were altered slightly to account for this limitation. A reasonable view of most areas of this aspect were able to be viewed from the Site and this is not considered to be a material constraint, however it is possible bat emergences and re-entries at low height to the western aspect of B1 may have been missed.
- 2.11 The infrared camera recording failed during the second dusk survey on 31st August. As all aspects of B1-B3 were observed by surveyors throughout the survey, this is not a material constraint, although we cannot have full confidence that late emerging individuals (such as *Myotis* species) were accounted for.
- 2.12 No further constraints to survey were recorded; surveys were undertaken in suitable weather conditions and at an appropriate time of year.

3. SURVEY RESULTS

Dusk emergence survey 02.08.2022

3.1 Three confirmed bat emergences from the buildings were recorded during the survey. These comprised:

- A soprano pipistrelle emergence at 21:02, four minutes after sunset from under the eaves of the eastern aspect of B1.
- A probable brown long-eared bat (no calls recorded) at 21:29, 31 minutes after sunset. This bat emerged from a gap near the gutter close to where B1 met the adjacent two-storey building to the north.
- A brown long-eared bat recorded emerging from a stable door of B2 at 21:30, 32 minutes after sunset. This was verified from a review of camera footage.

3.2 Up to two further brown long-eared bats may have emerged on the western aspect of Building B1. Although not seen emerging, two individuals appeared suddenly in this area between 21:25-21:29 (27-31 minutes after sunset). These were not seen commuting in from offsite, nor was the species recorded by other surveyors at this time. Two more brown long-eared bats recorded commuting north-south along the eastern side of the building complex between 21:28-21:30 were confirmed from camera footage as arriving from off-site, although the one at 21:28 briefly entered then left a stable at B2.

3.3 In addition, a pipistrelle bat (species not confirmed) was seen emerging from the adjacent building to the north of B1 at 21:09, eleven minutes after sunset. This bat emerged approximately 2/3rds along the eastern aspect of the structure from the north, likely under a roof tile.

3.4 Species noted during the survey include brown long-eared bat *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Noctule *Nyctalus noctula*, Leisler's bat *Nyctalus leisleri* and *Myotis* species bats. A common pipistrelle roost was suspected to be present within Cedar Lodge itself due to several early passes from the direction of the property.

3.5 Only one of the *Myotis* passes was seen; this was an individual commuting east-west over the roof of B2 at 21:49 (51 minutes after sunset) and is not thought to have been roosting in the buildings.

3.6 Most activity was seen from the eastern aspect of the buildings. Including commuting activity primarily from north to south along the eastern aspect of B2 and B3. The majority of foraging activity was seen in the garden south-west of B2. The first recording of activity was a soprano pipistrelle emergence at 21:02 and the last recorded activity was from an unobserved brown long-eared bat at 22:26.

Dusk Emergence Survey 31.08.2022

3.7 Two confirmed bat emergences were recorded during this survey:

- A common pipistrelle at 20:10 (15 minutes after sunset), from the western side of the B1 gable end, from a gap in the mortar between the tiles and wall.

- A soprano pipistrelle shortly afterwards at 20:10, from the eastern side of the B1 gable end, from a gap in the mortar between the tiles and wall.
- 3.8 Species noted during the survey include common pipistrelle, soprano pipistrelle, noctule and *Myotis* species bats (one individual, which commuted over the buildings from off-site to the west). Only one brown long-eared bat was recorded throughout the survey by any surveyor; this was an unseen pass west of B2 at 21:00, 65 minutes after sunset. This is after typical emergence times for the species and this individual is not thought to have emerged from the buildings.
- 3.9 The majority of recorded activity was otherwise foraging and commuting pipistrelles within garden areas, largely away from buildings B1-B4.

Dawn Re-entry Survey 15.09.2022

- 3.10 No bats were seen entering any building during the dawn survey, and none were recorded on the camera footage.
- 3.11 Overall bat activity was low, with occasional pipistrelle foraging/commuting activity within the gardens only. One late soprano pipistrelle pass was seen 27 minutes before sunrise at 06:11, commuting west to east over the top of B2. The last bat was also a soprano pipistrelle ten minutes before sunrise, with unseen social calling recorded at the north-eastern corner of B1. This bat is likely to have roosted on or adjacent to the Site, for example within Cedar Lodge itself.
- 3.12 One brown long-eared bat was recorded during the survey; this was an unseen pass east of B1 at 05:42, 57 minutes before sunrise. This bat was not thought to have re-entered the buildings and was not picked up on camera footage.

4. EVALUATION

Summary

- 4.1 The daytime inspection undertaken in June 2022 revealed evidence of a historical bat roost within B1 in the form of a number of droppings, later confirmed as brown long-eared bat from DNA analysis. Buildings B2 and B3 were also considered to provide roosting bat suitability.
- 4.2 The three nocturnal surveys confirmed the following roost locations in the buildings:
- Brown long-eared roost (one individual) within a gap under eaves and near the gutter, close to where B1 met the adjacent two-storey building to the north.
 - Brown long-eared roost (one individual) within the northern stable of B2.
 - Soprano pipistrelle roost (one individual) on the eastern aspect of B1, using a gap under the eaves approximately 2/3 down this aspect from north to south.
 - Soprano pipistrelle roost (one individual) on the southern gable end of B1, using an area of missing mortar near the pitched roof.
 - Common pipistrelle roost (one individual) on the southern gable end of B1, using an area of missing mortar near the pitched roof.
- 4.3 Up to two further brown long-eared bats may have emerged from the eastern aspect of B2, although this was not confirmed.
- 4.4 Due to the low numbers of individuals within each roosting location, both B1 and B2 are considered to constitute **day roosts** only of soprano pipistrelle and brown long-eared bat, as well as day roost of common pipistrelle within B1. No evidence of maternity roosting was identified.
- 4.5 As per the initial assessment of the structures, due to the nature of the buildings and the depth of observed crevices within B2 and B3, these are also considered to provide hibernation roosting suitability.

Impacts

- 4.6 As bats have been confirmed in B1 and B2, and B3 also supports suitable roosting features (although their use has not been confirmed), in the absence of mitigation the proposed conversion of B1-B4 on Cedar Lodge has potential to cause a wildlife offence. For example, there is a risk of killing or injury of bats in the worst-case scenario, or otherwise disturbance of bats within the roosts.
- 4.7 The works may also result in the removal of certain roosting features used by day roosting common pipistrelle, soprano pipistrelle and brown long-eared bats, pending the scope of external repair works required.

5. RECOMMENDATIONS

- 5.1 Buildings B1 and B2 (the two-storey converted barn and stable) have both been found to support roosting bats and are now classified as confirmed Day Roosts (non-breeding) of common pipistrelle, soprano pipistrelle and brown long-eared bats.
- 5.2 The immediate proposed re-development of the Site will include the conversion of B3 to a pool house, and restoration of B4 to a functional greenhouse. Potential future proposals then include the conversion of B1 and B2 to residential accommodation.
- 5.3 Recommendations on this basis are as follows.

Pool house works

- 5.4 Proposed works for the swimming pool application include the conversion of B3 to provide a pool building with changing room and shower, as well as the renovation of B4 to provide a new greenhouse.
- 5.5 B4 is not considered to provide bat roosting suitability, therefore no recommendations in relation to this structure are made.
- 5.6 No evidence of roosting bats was identified from nocturnal surveys at B3, however some roost suitability is provided by deep crevices in the internal stone work. As the use of these crevices by hibernating bats cannot be ruled out, it is recommended as a precaution that further checks of these crevices are undertaken during winter to confirm whether they are being used by bats for this purpose.
- 5.7 Assuming no evidence of roosting bats continues to be identified within these features, the pool house works are then considered able to proceed without the requirement for a Natural England licence. However, as they do provide suitability for usage by bats, a precautionary principle should be applied when implementing these works.
- 5.8 Ahead of works effecting these features commencing, a toolbox talk should be given by a Suitably Qualified Ecologist ("SQE") to the appointed contractor. The toolbox talk should outline the protection afforded to bats, the types of locations where you are most likely to encounter bats, what activities could potentially harm or disturb bats and what to do if a bat is encountered and an SQE is not present.
- 5.9 In addition to the toolbox talk works a pre-works check by a SQE should be completed on the internal stone work. If no evidence of bats is found, a temporary excluder (such as a polythene sheet fixed at the top of the wall) could then be fitted to provide further confidence that no bats will move in while initial works take place. This will allow bats (in the circumstance that individuals are present in deeper crevices) to exit the features but not re-enter.
- 5.10 It is also recommended that the removal of any features of higher roosting suitability, for example tiles or the wooden frame is completed under the supervision of an SQE.
- 5.11 In the event bats are discovered, works must stop immediately and an SQE contacted. A Natural England licence must then be sought prior to works re-commencing; this may need to be supported by further survey information.

Conversion of B1 and B2

- 5.12 Although detailed proposals are not yet available for these works, they are considered to pose a significant negative risk to three species of roosting bats confirmed in the buildings, with day roosts of common pipistrelle, soprano pipistrelle and brown long-eared bats confirmed.
- 5.13 As bats are present and their roosts are to be affected, the proposed works must not proceed without a European Protected Species Mitigation Licence (EPSM) from Natural England. In this case, due to the low numbers of common species present and less than eleven roosting locations identified the property is considered suitable for registering under the Earned Recognition system (any level). It may also be suitable for the Low Impact Class Licence system.
- 5.14 Specific mitigation details for B1 and B2 will be specified during the Mitigation Licence application process and will be guided by a suitably qualified ecologist.
- 5.15 Likely mitigation will include;
- Timing of initial, intrusive works to avoid the sensitive hibernation season.
 - Provision of alternative temporary roosting features on Site e.g. bat boxes;
 - Where required, sensitive removal of any features of value / known to support roosting bats (such as roof tiles) under direct supervision of a licenced bat worker.
 - Retention of existing roosting features as far as possible, such as loft spaces and gaps under eaves.
 - Where this is not possible, replacement roosting opportunities will need to be incorporated within the renovated structure. This could include bat access roof slates, integrated boxes within the walls of the structure, or bespoke gaps provided into new/retained loft spaces.
 - Post-renovation monitoring checks by a suitably qualified ecologist.
- 5.16 All types of licence will need to be applied for on receipt on planning consent and following discharge of any planning conditions pertaining to ecology. They will each involve an application form jointly filled out by the applicant and Named Ecologist, and a range of supporting figures. A 'traditional' licence will additionally include a detailed method statement, work schedule and often a reasoned statement to justify the need for the works.
- 5.17 To further inform the licence application, it is recommended that a survey of the buildings is undertaken over winter to confirm its use by hibernating bats. During Natural England licence applications, where hibernation suitability has been confirmed in a building and no further survey was done, this then has to be justified in the text. Under current industry guidelines (BCT, 2016) this would involve a check of the buildings in January and February, combined with deployment of automated detectors for a two week period each month.

Construction and External Lighting

- 5.18 Bats regularly forage and commute past and around the buildings assessed as part of this study, with a relatively high diversity of species recorded (including the uncommon Leisler's bat, and *Myotis* species). All construction lighting must therefore be focused on the proposed works areas only, with baffles and cowling used where appropriate to minimise light throw around the fringes of these areas. In particular, excess illumination of B1 and B2 should be avoided.

- 5.19 Construction lighting (including that associated with any site compound, or welfare facilities) must be switched-off at the end of the working day.
- 5.20 Any new external lighting units to be installed as part of the scheme should avoid up-lighting of both the existing B1 and B2, and any new roosting features installed.
- 5.21 It is also recommended that, where practicable, new external lighting units are fitted with passive-infrared receivers (PIRs), with these adjusted to avoid them being triggered by birds or bats. Similarly, the use of timers to avoid the requirement for lighting to be operational throughout the night would also be beneficial (e.g. lighting switched off 1hr after sunset until 1hr before dawn).

General

- 5.22 In the event any bats (or other protected species e.g. nesting birds) are encountered, works are to stop immediately with advice sought from ourselves (Nicholsons Lockhart Garratt – 01536 408840).

6. REFERENCE AND BIBLIOGRAPHY

Bat Conservation Trust (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. The Bat Conservation Trust, London.

BCT & ILP (2018). *Guidance Note 08/18 Bats and artificial lighting in the UK. Bats and the Built Environment series*. Bat Conservation Trust and Institute of Lighting Professionals, 12 September 2018.

Gov.uk (2015). *Guidance. Bats: surveys and mitigation for development projects*. Natural England and Department for Environment, Food & Rural Affairs, Worcester.

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

7. APPENDICES

Appendix 1: Roosting locations

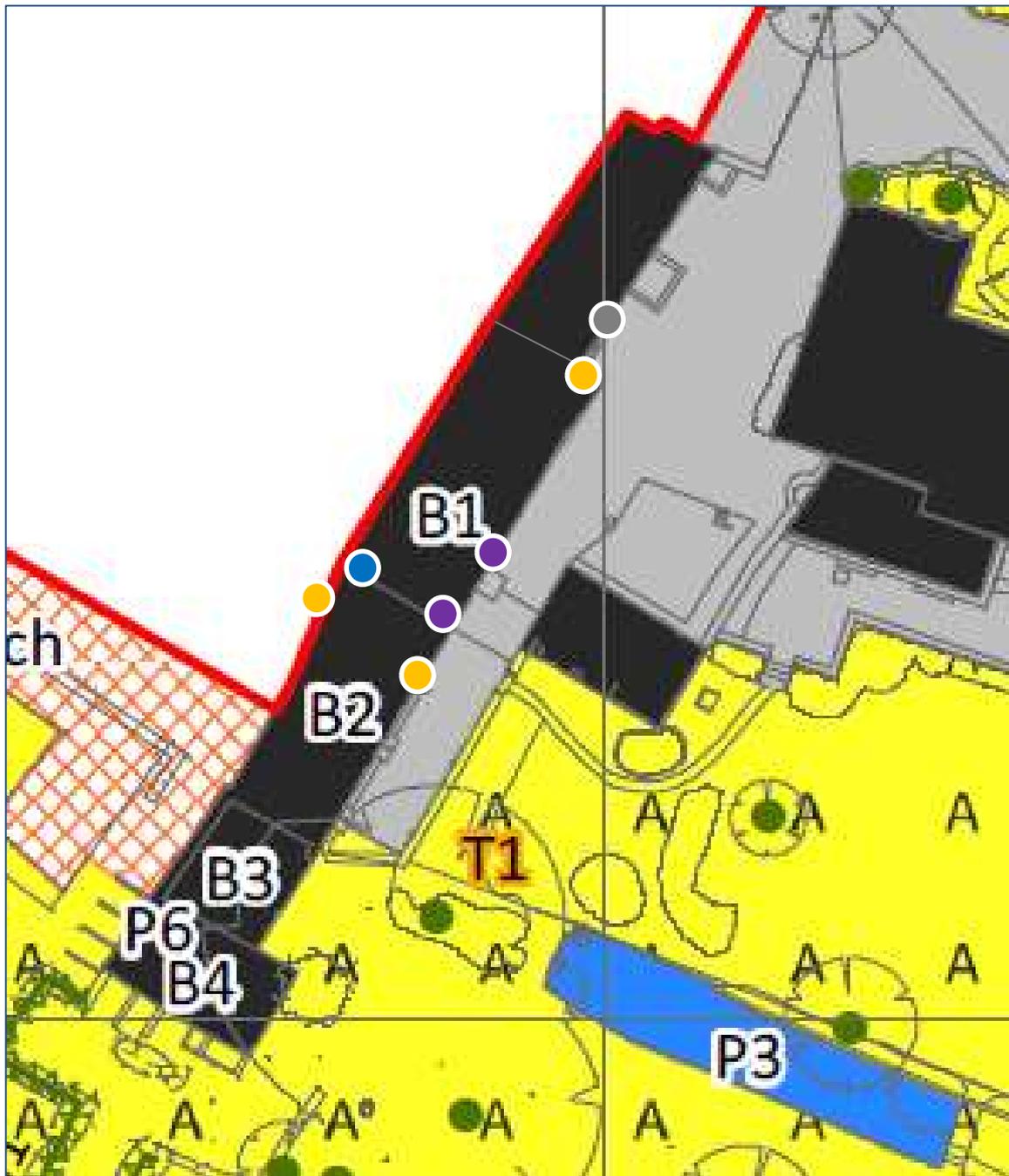


Figure 3: Showing roosting locations confirmed or suspected during August-September nocturnal surveys. Colour coding as follows: common pipistrelle (blue), soprano pipistrelle (purple), unidentified pipistrelle (grey), brown long-eared bat (orange).

Appendix 2: Bat Method Statement

Procedure to be followed should bats be found when an ecologist is not present

If at any point in the works bats are discovered, contractors should stop works immediately and telephone Nicholsons Lockhart Garratt on 01536 408840.

Nicholsons Lockhart Garratt will provide an appropriately licensed bat worker to the site.

Bats are a protected species and there should be no attempt to handle a bat if discovered, unless it is of immediate danger.

If the bat does not fly out on discovery, then the aperture will be carefully covered over to protect the bat from the elements, leaving a small gap for the bat to escape from voluntarily. If found under a tile, this can be carefully replaced taking care not to crush the bat. As a temporary solution the bat can otherwise be covered by a light material (e.g. cloth).

Any covering should be free from grease or other contaminants and should not be of a fibreglass-based material.

If a bat is found grounded, or is otherwise in immediate danger it can be picked up in a gloved hand, or gently scooped into a suitable container (such as a lidded cardboard box) until the bat worker arrives.

Should it transpire that the operation being carried out is of risk to bats, works will be stopped until a licence is sought from Natural England.

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