BAT SURVEY AND ASSESSMENT

Land at Steton Works, Turners Hill Road, Crawley Down

A REPORT FOR JW STRATTON LTD

This report provides an independent assessment of the status of bats within the site alongside a determination of likely constraints and opportunities for enhancement

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Survey completed between September 2025.

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Table 0.1 - Document and Version Control

Author	Georgie Baulcomb BSc (hons) MSc ACIEEM		
Site	Land at Steton Works, Turners Hill Road, Crawley Down		
Reference	CE25233		
Type	Bat Survey and Assessment		
Version	Checked	Approved	Date
V1	Orlando Campbell BSc (Hons) MCIEEM	Giles Coe BSC (hons) MCIEEM	04/11/2025

The surveys and assessment have been drafted to be in accordance with; Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edition), British Standard for Biodiversity BS42020:2013, Biodiversity - Code for planning and development and the Code of Professional Conduct published by the Chartered Institute of Ecology and Environmental management.

N.B. It must be noted that investigations of this sort provide only a snapshot in time of the ecological conditions of a site, are limited in extent and cannot capture the full picture of the biodiversity interests at the given location.

Contents

1 Summary of Assessment

Co-ecology Ltd were commissioned by JW Stratton Ltd to undertake a bat survey of the proposed development at Land at Steton Works, Turners Hill Road, Crawley Down. The following points summarise the main results of the survey and outline the proposed mitigation for the site.

1.1. Proposals comprise the construction of two two-storey semi-detached residential properties with associated soft landscaping included around the site. The proposals would result in the loss of a single storey barn structure and modified grassland currently used as amenity space for the adjacent Chelsea Cottage.

1.2. An ecological appraisal including a Preliminary Roost Assessment was undertaken by Co-ecology in September 2025. A very low number of bat droppings were recorded within the building (B1) with potential roosting features limited to crevices between stored lumber and plyboard. The presence of bat droppings within the building confirmed it as a roost for bats. An evening survey was recommended to ascertain presence and give an indication as to level of use by bats in the local area.

1.3. One emergence survey was undertaken in September 2025 and a single common pipistrelle bat was recorded emerging from between timber planks stored within B1.

1.4. Due to the presence of a bat emerging from a roost, a further two emergence surveys are required to determine roost characterisation and influence appropriate mitigation. These surveys will be undertaken during the active season between May – August.

1.5. In the absence of mitigation, the proposals will result in the permanent destruction of at least one bat roost and therefore, a Natural England mitigation licence should be obtained to allow the works to proceed.

1.6. In order to comply with current planning policies and avoid any loss of biodiversity on-site, the new building should include additional wall integrated bat boxes.

1.7. Additional effort to improve the overall suitability of the site to support foraging bats include use of native species planting and the creation of invertebrate refugia (e.g. a log pile) within the wider ownership boundary.

2 Background

Overview of the commission and the proposals

2.1. Following an initial Preliminary Ecological Appraisal (Co-ecology, 2025), JW Stratton Ltd commissioned Co-ecology to undertake a single bat emergence survey at Land at Steton Works, Turners Hill Road, Crawley Down to assess the potential impacts of the proposed development on bats.

2.2. The client's proposals comprise the demolition of one building (B1) and the construction of two two-storey semi-detached residential properties with associated soft landscaping included around the site.

2.3. The ecology investigations required to inform the proposals and to determine the status of bats within the building impacted by the works will be based on the following elements:

- A detailed building inspection;
- evening emergence survey (B1);
- an evaluation of the status and relative conservation value of any roosts, if present;
- an initial assessment of likely impacts and opportunities; and
- recommendations for further surveys or mitigation that may be necessary.

Objectives

2.4. To use the process outlined above to assess the status and value of the site or bats and the likely constraints to the proposed works. To determine an initial assessment of impact to bats and to devise measures to off-set impacts and provide enhancements in line with National and local planning policies.

2.5. The primary aim is to ensure that all impacts are correctly identified, and to provide in outline of appropriate measures for mitigation, compensation and enhancement. The results of the emergence survey will ascertain bat roost specification, if roosting bats are identified, and inform appropriate mitigation and the Natural England bat licence application which will be required for construction works to commence on-site.

Site description

2.6. The site comprised a small parcel of land, approximately 0.045 hectare (ha), to the north west of the village of Crawley Down (National Grid Ref: TQ 33727 38392). The site is bordered to the west by residential property of Chelsea Cottage with Turners Hill Road immediately beyond this. The former Steton Works motor garage is located to the east with access road to the north.

2.7. The wider landscape is comprised of further residential properties to the north and south, and large pasture fields to the east and west. Beyond these habitats the local area is dominated by woodland habitats extending to the east and west with scattered residential dwellings and suburban infrastructure.

Legislative and policy context

2.8. The following pieces of legislation and National policy are relevant to this appraisal and have been used to inform this appraisal;

- Conservation of Habitats and Species Regulations 2017(as amended)
- Wildlife and Countryside Act 1981 (as amended)
- The National Planning Policy Framework 2019
- Biodiversity and geological conservation: circular from the ODPM 06/2005

2.9. Planning policies at the local level which are of relevance to this development are found within the Mid Sussex District Council Adopted Local Plan 2014 – 2031 (adopted March 2018).

2.10. The following local policies are extracted from the Mid Sussex District Council Adopted Local Plan 2014 – 2031 (adopted March 2018):

- *DP38: Biodiversity*

  "The District Plan recognises the importance of the protection and conservation of areas of importance for nature conservation and the valuable contribution made by these sites and features in conserving biodiversity and geodiversity of our natural heritage, together with opportunities for education and employment. The District Plan also recognises the importance of the protection and conservation of areas outside of designated areas where these are of nature conservation value or geological interest especially where they contribute to wider ecological networks."

3 Methodology

Personnel

3.1. The survey, site appraisal and reporting were carried out by Georgie Baulcomb BSc (Hons) MSc ACIEEM (Level 2 class licence for bats), an ecologist with nine years' experience in quantitative field surveys and assessments and with proficiency in habitat surveys and assessment of impacts to protected species. Georgie has undertaken many PRA and assessments for bats and has been an associate member of CIEEM since 2021.

3.2. The evening emergence survey was carried out by:

- Georgie Baulcomb MSc ACIEEM (level 2 class licence for bats)
- Tessie Rudge-Hendry BSc PIEMA – An ecologist with two years survey experience

Contextual information and data records

3.3. Contextual information on the site was gathered from freely available on-line resources including a 10km search for European protected sites and 5km for Nationally important sites and records for any European Protected Species Mitigation (EPSM) licences. This was carried out using Magic Map hosted by Defra. On-line aerial imagery was used to assess the sites position within the wider landscape including connectivity and potential corridors for movement.

Emergence Surveys

3.4. One emergence survey was undertaken on the 17th September 2025 under suitable weather conditions. Following established methodology, two surveyors with an infrared and thermal imaging cameras were situated so as to have the best view of accessible elevations of B1. Surveyors were equipped with full spectrum heterodyne detectors (Elekon Batlogger M2) to identify bats in the field and record bats for later evaluation.

3.5. The survey started 15 minutes prior to sunset and continued until 90 minutes past sunset with the surveyors making a note of weather conditions and the time, activity and species of any bats that were heard and/or observed.

3.6. The ultrasound calls retrieved from the surveys were manually analysed using Elekon's BatExplorer software. Automated processing of all the video footage from the survey was undertaken by independent specialists Wildlife Imaging System. Through this automated processing, each frame of the video is analysed looking for motion, resulting in a composite image with all movements for each 30s of video. These composite images and originating videos were reviewed by a suitably experienced ecologist whenever required to allow certainty on the analysis results.

Evaluation & Impact Assessment

3.7. If any roosts were identified during the surveys their relative value was assessed against published criteria for conservation significance as set out in Table 3.2 of the Bat Mitigation Guidelines (CIEEM, 2023), and a simple assessment compiled to determine any likely impacts that could arise from the proposals. The impact assessment is based on the relevant chapter (4) of the Bat Mitigation Guidelines.

Constraints

3.8. None recorded.

4 Results

BAT ASSESSMENT

Summary of Preliminary Roost Assessment (Co-ecology Ltd, 2025)

4.1. *B1 –* A single storey structure comprising a mixture of timber shed, stable block and tack rooms built from reclaimed timber, plyboard with a flat corrugated metal roof. A very small number of bat droppings were recorded within the internal space on the floor of the central tack room. These were collected and sent for DNA analysis which returned a positive result for **brown long-eared** bat.

4.2. The internal space was open with multiple open window frames high up on the external walls allowing plenty of internal access. Stacks of timber, boxes and other materials were stored on the concrete slab flooring and reached as high as the ceiling in places. The internal partition walls were made from plyboard and timber with occasional gaps between board to small crevices.

4.3. Suitable roosting features included the crevices between plyboard walls as well and gaps and crevices in between stacks of stored materials.

Emergence survey 1

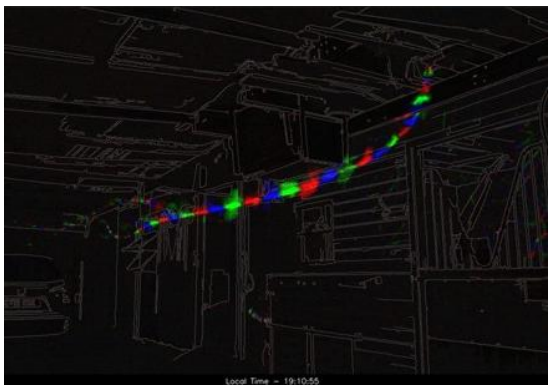
4.4. Carried out on 17th September 2025 under suitable weather conditions.

4.5. One common pipistrelle *Pipistrellus pipistrellus* bat was observed emerging from between timber planks stored high up overhead, just under the ceiling (R1). The bat emerged from the internal space of the building and flew further inside before exiting the building southwest. See Figure 4.1 for a representation of the approximate location of the roost.

4.6. The bat activity throughout the evening survey was very low with a low number of common pipistrelle commuting passes with occasional foraging activity over the adjacent grassland. No other bat species were recorded during the survey.

4.7. See photographs below for field of view and visualisation of bat emerging from R1.

Photograph 1. Field of view from IR camera.

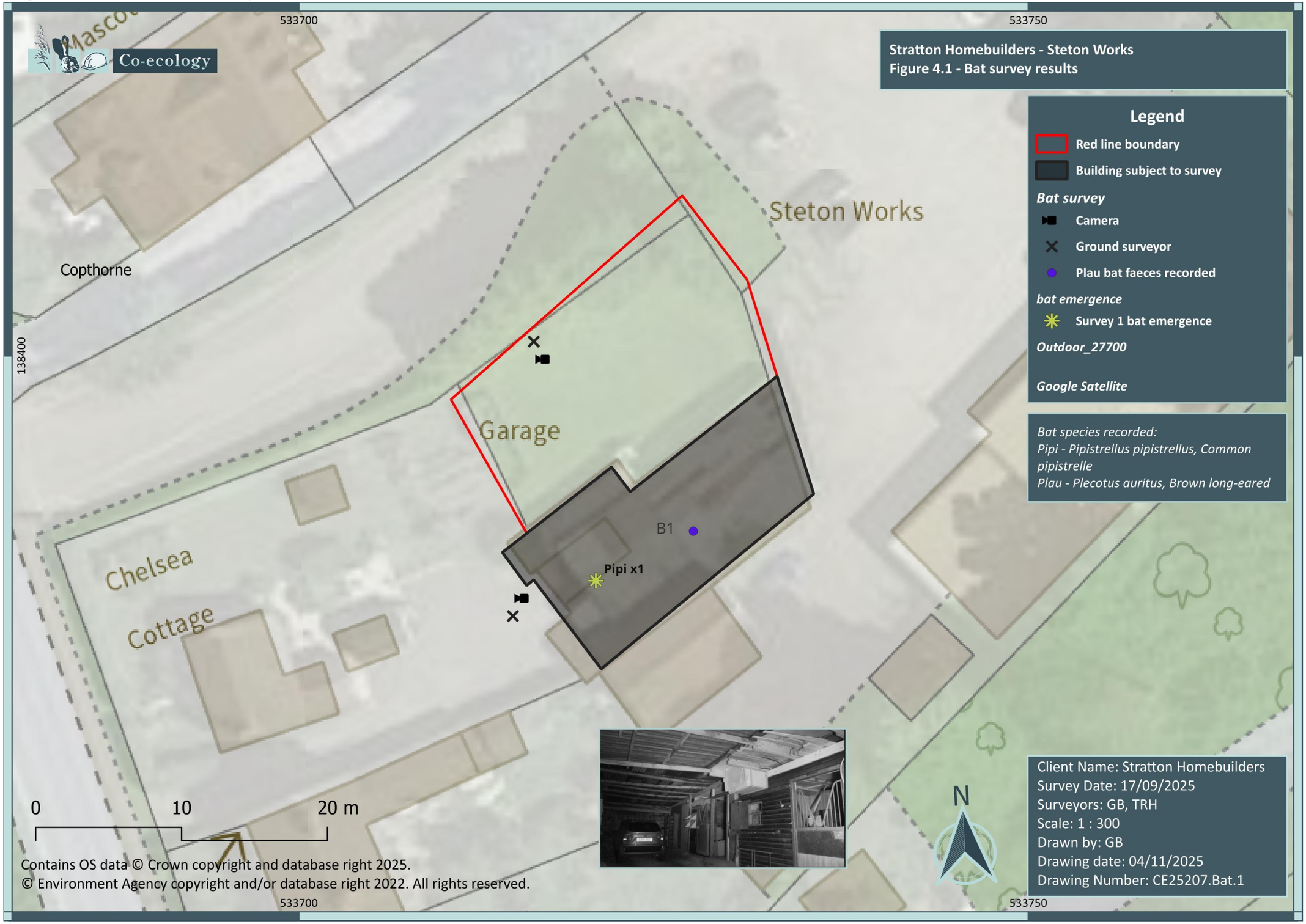


Photograph 2. Common pipistrelle bat emerging from R1 between timber planks.

Roost Characterisation

4.8. Full roost characterisation could not be determined from the single emergence survey. At minimum, the site supports at least one day roost for a single common pipistrelle bat recorded emerging from a roost as well as a brown long-eared bat for which droppings were recovered and analysed for DNA.

Figure 4.1. Bat survey results



5 Impacts and Opportunities

Impacts

5.1. Protected sites – There are no protected sites that are cited for their bat interest within 10km of the development site.

5.2. Habitats – Priority habitats in the wider landscape included broadleaved woodland and mature hedgerow boundaries which offer suitable opportunities for roosting and foraging bats in the local area. These will not be impacted by the proposed works which will be confined to the existing footprint of the B1.

5.3. Roosts – DNA analysis of recovered bat droppings returned positive identification of a born long-eared roost and the first emergence survey recorded a common pipistrelle emergence through audio recording. The proposals include the demolition of the existing building which could result in the direct impact to individual brown long-eared and common pipistrelle bats roosting at time of works.

5.4. In the absence of mitigation there is potential for the construction phase to cause injury or the killing of bats on site. In the absence of compensation, there will be a potential loss of roosting opportunities on site for bats in the operational phase as well as potential impacts to foraging and commuting activity with the inclusion of external lighting.

5.5. Bird's nest – The proposed demolition of the building has potential to cause direct impacts to birds and potentially reduce nesting opportunities in the operational phase of the development.

Opportunities

5.6. There are opportunities to improve the site for roosting bats with the inclusion of integrated bat boxes on the proposed new buildings as well as for foraging bats with the construction of a small log pile or a bug hotel installed within the retained grassland area to the north of the proposed building.

6 Recommendations

Recommendations for surveys to inform the proposals

6.1. As a roost for common pipistrelle and brown long-eared has been recorded on site, further evening emergence surveys will be required of B1. Following current survey guidelines, at least two further surveys will be required to determine roost characterisation for the building on site. These must be undertaken in the bat active season between May and August. Roost characterisation is required for appropriate mitigation design.

Recommendations for surveys prior to construction

6.2. Following the findings of the further bat surveys, mitigation for bats will be required and will include a pre-works building inspection detailed below under mitigation.

6.3. A pre-works check for nesting birds must be carried out if works occur between March and August (inclusive).

Mitigation

6.4. The following points describe the preferred practicable mitigation measures that should be followed to facilitate the proposed development in regard to bat species.

6.5. *Licensing:* The proposed works will result in the loss of one or more bat roosts (type to be determined following further bat surveys) in B1 and will therefore require consent from Natural England.

6.6. The likely low number of bat roosts and the common and widespread species encountered means that the site could be registered under the Bat Mitigation Class License scheme (BMCL).

6.7. *Timing:* Works must avoid the bat hibernation season of mid-November to March in a given year to eliminate potential constraints from encountering hibernating bats. Current data from the PRA and single emergence survey does not suggest the presence of a maternity roost and there would be no time restriction in this regard.

6.8. The suggested window or works is between mid-March and mid-November.

6.9. *Pre-demolition survey:* a building inspection should be undertaken by the site bat ecologist prior any works commencing.

6.10. *Capture:* Any works to any features with suitability to support roosting bats on-site should be supervised by the Licence Holder (Ecologist) or Accredited Agent under the obtained consent. Suitable features will be stripped by hand tools only. Any bats that are located will be captured by hand by the licenced ecologist and placed into dedicated bat care boxes before being released shortly after into a tree mounted box, such as the Schwegler 2FN or Eco Kent Bat Box, installed specifically for this purpose on a mature tree within the ownership boundary.

6.11. *Reinstatement*: The proposed works will result in a net loss of at least one bat roost. the level of compensation will be determined following the results of the further surveys and will be detailed within the relevant mitigation licence application.

6.12. *Enhancements:* It is recommended that compensatory bat roost features are incorporated into the final building design to account for the potential loss of roosting resource, in the form of bat access tiles or integrated bat wall boxes. In addition, it is recommended that any garden soft landscaping incorporates native wildlife planting and/or bug hotels to encourage insect prey.

6.13. Due to the high mortality risk to bats, breathable membrane should only be used where it has passed the conditions of a snagging propensity test and must have a relevant certificate to verify this from an independent source. Alternatively, if felt lining is required, the use of type 4 bitumen felt can be used freely without risk to bats.

6.14. No direct sources of lighting should be trained into the proposed access points into the replacement roost and a sensitive lighting strategy should be implemented on site. The strategy should aim to avoid direct lighting onto sensitive habitat features surrounding the site such as hedgerows and trees. External lights should use a narrow spectrum light source and avoid white and blue wavelengths. Hoods, cowls, or shields should be used to reduce light spill and all lights sources should be installed bellow the eaves with PIR sensors that are sensitive to large objects only and set to the shortest time duration practicable.

References

BCT and ILP (2023) GN08/23 *Bats and Artificial Lighting At Night* Guidance Note 8 Bats and Artificial Lighting | Institution of Lighting Professionals (theilp.org.uk)

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Biodiversity Reporting and Information Group (2008) *UK Biodiversity Action Plan Priority Habitat Descriptions*. JNCC. Peterborough.

CIEEM (2019) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine Version 1.1.* Chartered Institute of Ecology and Environmental Management, Winchester.

Co-ecology (2025) *Land at Steton Works, Area 2 - Preliminary Ecological Appraisal*. Unpublished.

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

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Natural England (2021) Method Statement to Support an Application for Licence under Regulation 55(2(e)) in respect of Bats. Natural England, Peterborough.

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.

The National Planning Policy Framework (2024) National Planning Policy Framework

Appendix 1: DNA analysis

ecotype genetics

Results

Sample ID: EG-2681-1

Sample information:

Sample type: Faecal
Species group: Bats
Suspected species: Pipistrelle
Site Location: Crawley Down
Comments: CE25233 Steton

Laboratory information:

DNA Extraction Code: EG-2025-2579
Identification method: qPCR
Analysis Procedure Notes:

Laboratory Comments:
None

Species Identified:

Species 1: Plecotus auritus (Brown long-eared bat)
qPCR Ct Value: 29

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