Leith
ECOLOGY
CONSULTING

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Bat Survey Report

Threal's Farm Cottages, Threal's Lane, West Chiltington

Executive Summary

Leith Ecology Consulting Ltd. conducted a preliminary bat roost assessment (PRA) and bat emergence survey at Threal's Farm Cottages, West Chiltington, Pulborough, RH20 2RF. This assessment was commissioned to support a planning application for the demolition of the existing cottages and the construction of three new residential properties with associated land use.

The primary objective of the report was to evaluate the potential impact of the proposed development on bats and their roosting sites. The methodology included a desk-based assessment, PRA, and emergence surveys conducted over two visits in July and August 2025.

Key findings include:

- The property has a confirmed mixed species day roost with small numbers of common and soprano pipistrelle bats observed emerging from the property's western gable end during dusk emergence surveys.
- The proposed development will require a European protected species licence from Natural England due to the presence of these bat species.
- Recommendations include the sensitive demolition of the property to ensure legal compliance and animal welfare; the installation of integrated bat boxes; a bat-friendly planting scheme; and careful management of artificial lighting during construction and occupation.

The report concludes that with appropriate mitigation measures, the development can proceed without significant adverse effects on the local bat population.

Contents

Introduction 4
Proposed development 4
Objective of report 4
Methodology 5
Site Boundary Definition 5
Desk based assessment 5
PRA 5
Emergence surveys 5
Protected Species Suitability Assessment 6
Limitations 7
Data Usage Statement 7
Results 8
Desk based assessment 8
Preliminary Roost Appraisal 8
Setting 8
The Property 9
Emergence survey 10
Summary, licensing and recommendations 14
Protected species licensing 14
Recommendations 14
Survey validity 15
Appendix A – Existing Layout and Proposed Development 16
Appendix B – Survey Equipment used and Survey Timings and Weather 18
Appendix C – Survey locations and Equipment Deployment 19
Appendix D - Photos 20
Appendix E – NVA Vantage Point Record for Survey 1 & 2 25

Introduction

Leith Ecology Consulting Ltd. were commissioned to complete an updated preliminary roost assessment (PRA) and bat emergence survey at Threal's Farm Cottages, West Chiltington, Pulborough, RH20 2RF ('the property'). The request for support was made in response to the property owner's architect to support a planning application comprising the demolition of the extant cottages and extensive redevelopment including construction of three new residential properties and associated land use (parking, gardens etc.).

The purpose of this report is to determine the likely risk of the proposed development to bats and their breeding sites or resting places (roosts) and if necessary, recommend further surveys to support the development of avoidance or mitigation measures.

Proposed development

Drawings provided by the property owner are provided at *Appendix A*. As set out above, the proposed development comprises the demolition of two existing semi-detached cottages and outbuildings and erection of three dwellings with associated land use (parking, gardens etc.).

All works are to take place within the property landholdings.

Objective of report

The aims of the preliminary bat roost assessment and subsequent emergence survey are as follows:

- evaluate the building's suitability to support roosting bats;
- to determine the actual or potential presence of bats;
- undertake further survey work to determine presence or absence of roosting bats and bat activity at the proposed developement; and
- Propose advice on licensing, avoidance, mitigation, compensation and enhancement measures based upon the findings.

Methodology

The assessment employs a systematic approach to evaluate the ecological implications of a proposed development project. The methodology consists of the following steps:

Site Boundary Definition

The assessment begins with the review of the proposed development's redline boundary or areas of interest. This information can be provided in various formats, including postcodes, grid references, or simple drawings/pictures.

Desk based assessment

A desk-based assessment was conducted to gather existing ecological information for the project site and its surrounding area. This assessment relied on a review of readily available online resources and aerial imagery to identify potential ecological features and constraints. The assessment was complemented by the professional judgement and ecological expertise of experienced consultants, a 2km search area was applied given the scale of the proposed development. This search area was extended for internationally designated sites with bats as their qualifying features, namely Special Area of Conservation (SAC).

The following sources were used to inform the desk-based assessment (accessed 31 August 2025), species data reported where less than ten years old:

- Multi-Agency Geographic Information for the Countryside (MAGIC) website[1]
- The National Biodiversity Network species atlas website[2]
- Google™ Earth Pro

PRA

The PRA was completed over two visits to the property on 19 July and 9 August 2025 and comprised a detailed inspection of the proposed development area through direct internal and external access affording close examination of potential bat entry/exit points, potential roosting sites and evidence of occupation (droppings, dead bats etc.). To ensure a thorough search, the following survey aids were used: high-power torch, endoscope (Rigid SeeSnake CA-25), close-focusing binoculars and drone (DJI Mavic 3).

Emergence surveys

[1] https://magic.defra.gov.uk/MagicMap.html
[2] https://nbnatlas.org/

Two emergence survey visits were completed at the property in line with current best practice[3] for a building with moderate bat roost suitability. Surveys were completed three weeks apart on 19 July and 9 August 2025 under suitable weather conditions, a further roost characterisation survey was completed on 27 July 2025.

Surveys commenced 15 minutes before sunset and concluded 90 minutes after sunset. Each visit was undertaken by three surveyors aided by full spectrum bat detectors and night vision aids (NVAs). A further non-attended NVA and full spectrum bat detector was deployed to ensure full coverage of the property. Equipment details are provided at *Appendix B*, with surveyor and NVA deployment illustrated within *Appendix C*. Vantage-point screenshots from the end of each emergence survey are provided at *Appendix E*.

The PRA and emergence surveys were completed in line with current best practice[3] with all surveys led by a suitably competent bat ecologist (Level 4 'Authoritative') holding the following Natural England Class Licences:

- CL18 Bat Survey licence (17 years);
- CL15 Volunteer Bat Roost Visitor licence (17 years); and
- CL47 Bat Earned Recognition licence (4 years).

Protected Species Suitability Assessment

The preliminary assessment of bat roost suitability is based on a contextual evaluation of the proposed development area. This evaluation considers:

- Habitat type and quality;
- Known species presence in the surrounding landscape; and
- Connectivity with local designated sites.

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

Limitations

Direct access to roof detail including roof pitch and ridge could not be safely accessed, however, a full ground level inspection was completed with aerial drone access to ensure a thorough visual review.

The loft space was accessed on 9 August 2025, at this time the roof space was partly accessible over crawl boards spanning both properties, both gable ends could be inspected, however, crawl boards were not present throughout and thus c. 25% of the roof pitch could not be directly accessed for examination.

Evidence of bat occupation either through their physical presence (alive or dead) or other artifacts such as droppings, oil or urine staining, prey remains etc., may be difficult to find, or may weather away on external surfaces. The PRA inspection expended sufficient effort to locate such evidence during the main bat active season, thus this is not a significant limitation.

A semi-mature tree was present to the north west of the property restricting surveyor and NVA observations, best efforts were made to gain as much coverage of this angle as possible.

Data Usage Statement

In this report, data from the NBN Atlas (https://nbnatlas.org) has been utilised to inform the ecological assessment of the project site. The data, accessed on 31 August 2025, has been referenced at a resolution of 1km to 10km grid square level to discuss the general presence and distribution of habitats and species within the area. This approach ensures compliance with copyright regulations and the NBN Atlas terms of use, as specific records have not been directly replicated or cited. Instead, the data has been used to provide a contextual overview, aiding in the identification of potential ecological constraints and opportunities for biodiversity enhancement. The data providers and NBN Atlas have no responsibility for the further analysis or interpretation of this material, data and/or information. We have also used Natural England's European Protected Species data records as well as habitat and designated site records from magic.gov.uk. All data usage complies with the respective terms and conditions of each data source.

Results

Desk based assessment

10km search of the MAGIC website for SACs with bats as qualifying features:

- **The Mens SAC** is located approximately 8.6km northwest of the property. This internationally designated site is designated for its extensive beech forest and 'significant presence'[4] of Barbastelle bat including maternity roosts[5].

2km search of the MAGIC website for bat mitigation licences registered within the last ten years.

- No licences present within search area.

2km search of the NBN Atlas website within last ten years:

- Whiskered/Brandt's Bat *Myotis mystacinus/brandtii* recorded in2019
- Common pipistrelle *Pipistrellus pipistrellus* recorder in 2018, 2024
- Soprano pipistrelle *P. pygmaeus* recorded in 2024
- Pipistrelle species *P.* sp. recorded in 2019, 2021 and 2022
- Long-eared bat species *Plecotus* sp. recorded in 2018
- Serotine *Eptesicus serotinus* recorded in 2018

All of the above here recoded off-site.

Preliminary Roost Appraisal

Setting

The proposed development is located at the southeast extent of West Chiltington Common, West Sussex to the north of Storrington. It is set within a highly rural area with ancient and other woodland blocks; watercourses, lakes and ditches; interconnected hedgerows and treelines; and in close proximity to the South Downs National Park and Arun Valley.

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[4] JNCC (2005) Natura 2000 – Standard Date Form for SAC – The Mens. Accessed May 2025.
[5] South Downs National Park Authority - Sussex Bat Special Area of Conservation Planning and Landscape Scale Enhancement Protocol (https://www.southdowns.gov.uk/wp-content/uploads/2018/04/TLL-15-Draft-Sussex-Bat-SAC-Protocol.pdf). Accessed May 2025.

The immediate environs comprise a former residential garden with medium to large residential plots to the north, south and west, with open agricultural fields to the east. Artificial lighting at night was low during dusk emergence surveys.

The location provides highly suitable habitats for roosting, commuting and foraging bats (see *Appendix D*, *Photos 4 and 5*).

The Property

The following account provides a contextual summary of the property with a focus on potential features with may support bats i.e. entry/exit points and roosting features. Contextual photos are included within *Appendix D* and are referred to below as necessary.

The proposed development site relates to two adjoining cottages, the origin of these properties is unknown, however, they predate OS One Inch 1st / Old Series, 1978-1878 online mapping[6] and are likely to be several hundred years old although some renovation, such as modern uPVC windows, have been installed.

External inspection

The collective building comprises a two-storey, predominantly stone structure with a pitched, slate clad roof. The walls are unclad and likely single skin given the property's age and observations. Painted timber fascia boards are present to the east and west gable ends, soffits are absent, however, chicken wire is affixed to roof detail and eaves (*Photo 6*), presumably to deter nesting birds and rodents, although gaps were frequent throughout allowing potential access points for bat, smaller bird and rodent species.

Roof slates were tightly spaced, with the only potential bat exit/entry located to the west of the central chimney structure beneath a ridge tile.

A single storey brick extension, which appears of more recent construction, adjoins the northern wall of the main building with a flat roof lined with bituminous sheeting connected to an east/west pitched roof (*Photo 3*).The flat roof section offers negligible suitability; with the pitched roof section offering a number of potential bat exit/entry points via timber roof detail and missing and slipped clay roof tiles.

Internal inspection

The internal loft is a collar beam roof with timber sarking and bituminous sheeting below. The loft void is open at the eaves to rooms below and appears to have been cleared of furniture, belongings etc. Crawl boards permitted access to the main loft void area, with features explored where possible with endoscope and torches including a large crack in the western gable wall (*Photo 8*), and occasional gaps at the wall/roof interface. Rafters,

[6] https://maps.nls.uk/ accessed 31 August 2025

purlins etc. were reviewed, no signs of bats were seen. Four bat droppings were seen across the crawl boards; these were likely pipistrelle species (see *Photo 9*).

The internal roof space is largely unsuitable for bat occupation with high daytime light levels through missing floor boarding at the property's eaves and a window and clay pipe to the east and west respectively (*Photo 8*)

Outbuildings

In addition to the main property, there are two small single-storey outbuildings located in the garden area. These are single skin buildings, one with a corrugated metal roof and one with a bonded concrete (possibly ACM) roof. Both were inspected internally and externally and are unsuitable for roosting bats.

Bat roost suitability

Observations suggest the main building has moderate suitability for roosting bats. Collins, 2023[3] describes such buildings as:

'A structure 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 only, such as maternity and hibernation.'

This suitability assignment reflects the relatively superficial nature of potential bat roosting places whilst acknowledging the rural, well-connected context of the site.

Emergence survey

Three emergence surveys were completed at the property comprising two emergence surveys of the whole building; and a further roost characterisation survey focusing on the main building's western gable end.

Survey 1 – 19 July 2025

Two bats were observed emerging from the apex of the property's western gable end at 21:28hrs (approximately 23 minutes after sunset) in short succession to each other, flying directly to the west. Post survey sonogram processing concluded these were common pipistrelle bats (see *Figure 1*).

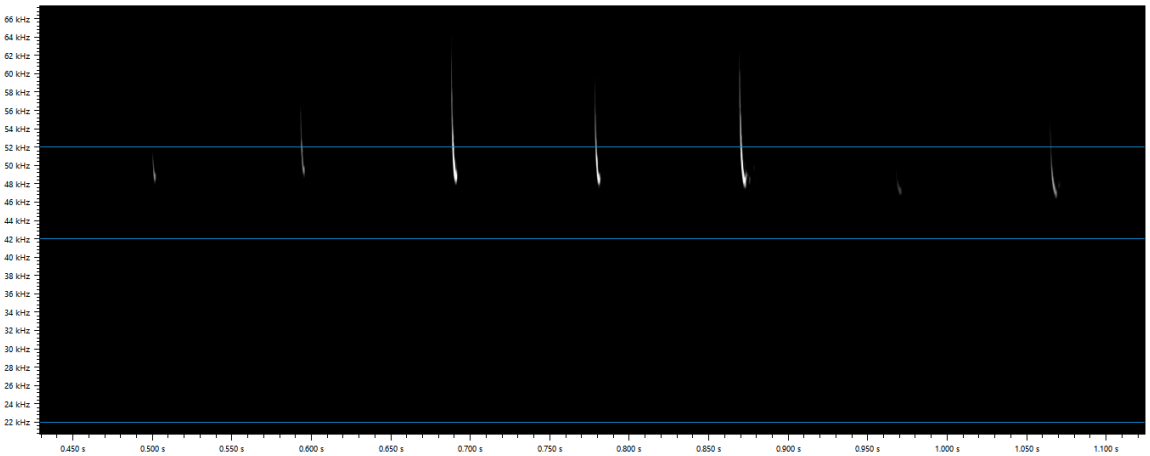


Figure 1: Sonogram of common pipistrelle bat emerging from the building during survey 1.

No further bats were seen to emerge from the property.

<u>Survey 2 – 9 August 2025</u>

A single bat was observed emerging from the property's western gable end at 20:29hrs (approximately 4 minutes before sunset) flying north over surveyor located beneath the western gable end. Post survey sonogram processing concluded this was a soprano pipistrelle bat (see *Figure 2*).

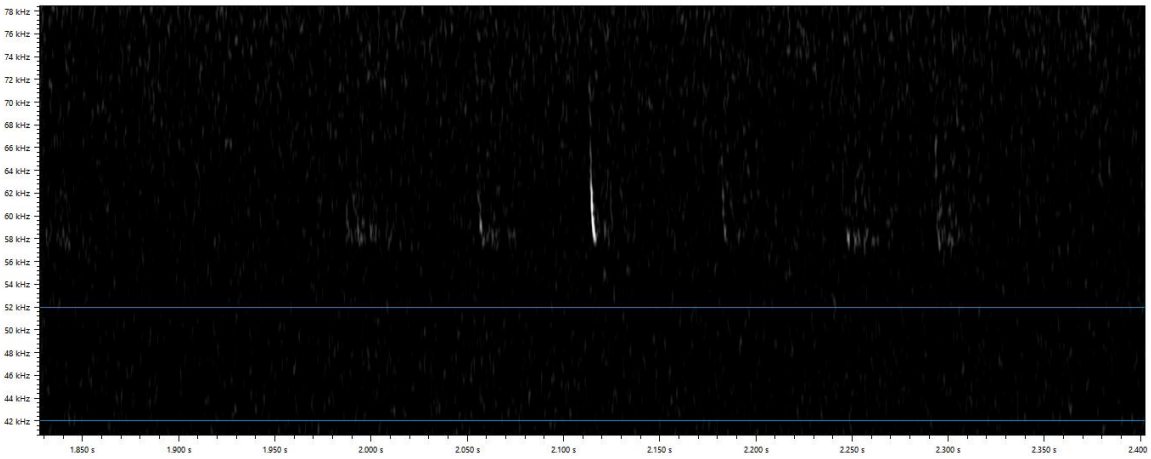


Figure 2: Sonogram of soprano pipistrelle bat emerging from the building during survey 2.

<u>Roost characterisation survey – 27 July 2025</u>

A further survey was completed between surveys 1 and 2 to gain further information regarding bat species and roost type, focusing on the known emergence location.

The NVA recorded a heat source at the apex of the building's western gable end at approximately 20:49hrs (approximately 7 minutes before sunset), the source remained until 20:57hrs (approximately 1 minute after sunset – see *Figure 3*), following which it became apparent that this was a bat, as it flew swiftly to the west. Post survey sonogram processing concluded this was a common pipistrelle bat (see *Figure 4*).

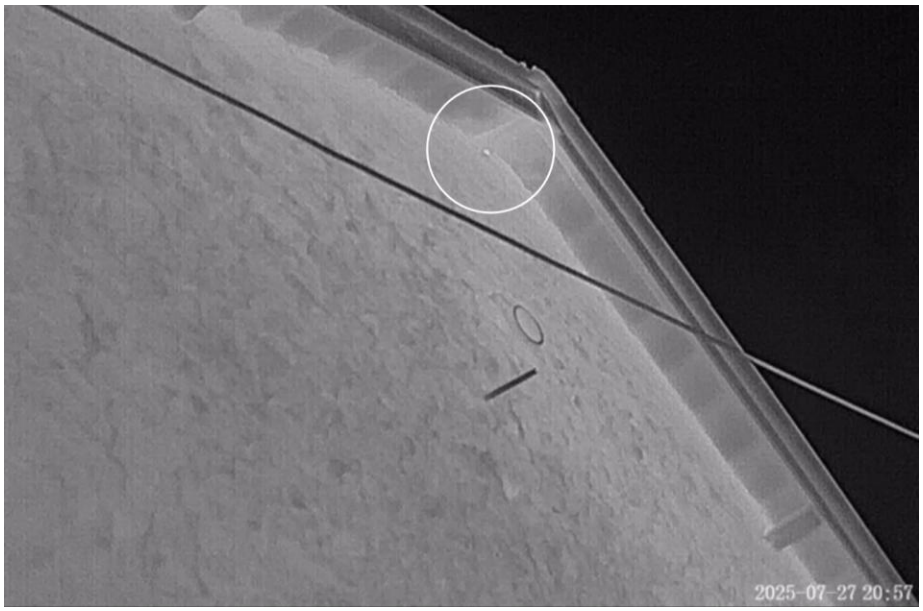


Figure 3: Heat source at western gable end apex

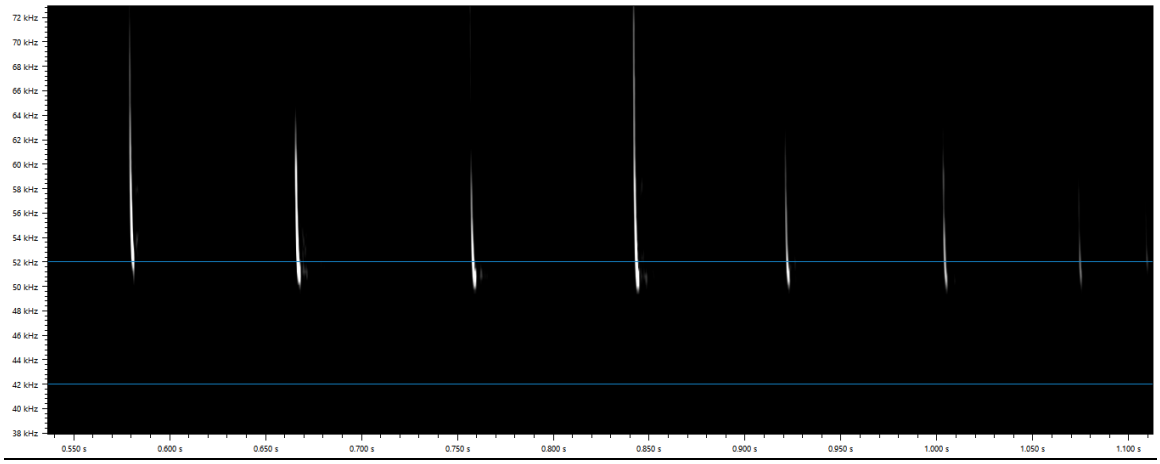


Figure 4: Sonogram of common pipistrelle bat emerging from the building during roost characterisation survey.

General bat activity

Sonogram analysis was completed for all bat activity recorded by one surveyor over surveys 1 and 2, results are provided within *Table 1*. Manual analysis was completed by a competent technician. The results provided in *Table 1* are provided with a high level of confidence regarding genera and species assignments.

Bat species	Survey 1		Survey 2		Total calls from surveys 1 and 2	% of calls per species / genera
	Number of 10 second sequences	Number of calls	Number of 10 second sequences	Number of calls		
Common pipistrelle	29	519	92	467	986	69.2
Soprano pipistrelle	11	183	19	85	268	18.8
Serotine	6	71	2	18	89	6.2
Brown long-eared	1	38	-	-	38	2.7
Daubenton's	2	21	-	-	21	1.5
Natterer's	1	15	-	-	15	1.1
Noctule	-	-	1	4	4	0.3
Bechstein's	-	-	1	2	2	0.1
Myotis sp.	-	-	1	2	2	0.1

Table 1: Bat activity recorded during surveys 1 and 2

Summary, licensing and recommendations

No impacts are predicted regarding The Mens SACs given the distance from this sensitive designated site and the nature and extent of the proposed works.

Protected species licensing

The proposed development supports a confirmed common and soprano pipistrelle day roost. As such, the demolition of the property and loss of the roost site will require a European protected species licence from Natural England (NE) prior to its disturbance and ultimate loss.

The roost type falls within NE class licence WML-CL47 - bat earned recognition class licence, Annex A group 1 species: lower risk, a consultant holding such as licence is referred to as the 'ER Consultant'.

Once planning or other relevant permission has been granted, the ER Consultant registers the site at least three weeks in advance of the intended start date, but no more than 12 weeks in advance. Works are only permitted to commence at a site following receipt of an email from NE confirming the site is registered and that works can proceed.

This licensing approach would require the production of a method statement by the ER Consultant, with all persons to be directly involved with these activities understand:

- where and when bats are potentially present;
- the legislation relating to bats;
- the methodology and activities that will be undertaken to safeguard bats;
- contingencies to be followed if bats are found, particularly if unexpectedly;
- that all activities relating to bats and bat roosts are restricted to the terms and conditions of this licence, and that bats and bat roosts are otherwise protected by law.

The ER Consultant will detail the above, including key points where their attendance would be required.

Recommendations

The following summary recommendations should be reviewed and managed in conjunction between a bat ecologist and architect where necessary:

- Provision of integrated bat boxes within suitable locations on the new buildings and on nearby trees where practicable. Example products include products

supplied by Habibat and Ibstock[7], further exit/entry points could be simply installed within finished roof tiles;

- Where it is necessary to install a roof membrane and this has the potential to be exposed to any bat, Bitumen type 1F felt with a hessian matrix, or a non-bitumen coated roofing membrane (NBCRM) with a test certificate approved by Natural England, must be used;
- Bat friendly planting scheme including night scented plants, insect features etc. further advice and recommendations can be found within the Bat Conservation Trust's document '*Landscape and urban design for bats and biodiversity*'[8];
- Avoidance or careful management of artificial lighting at night both during construction and occupation, further advice can be found within The Institution of Lighting Professionals (ILP) *'Bats and Artificial Lighting in the UK'*[9].
- Removal of suitable bat roosting features and exit/entry points should be timed to minimise harm to bats, ideally in September or October or April i.e. when bats are active, but not within their most vulnerable periods (specifically hibernation and maternity). The property offers suitable bird nesting habitat, to manage time delays, demolition would ideally be programmed for the autumn period to avoid the peak nesting bird period.

Survey validity

This survey is valid for 12 months.

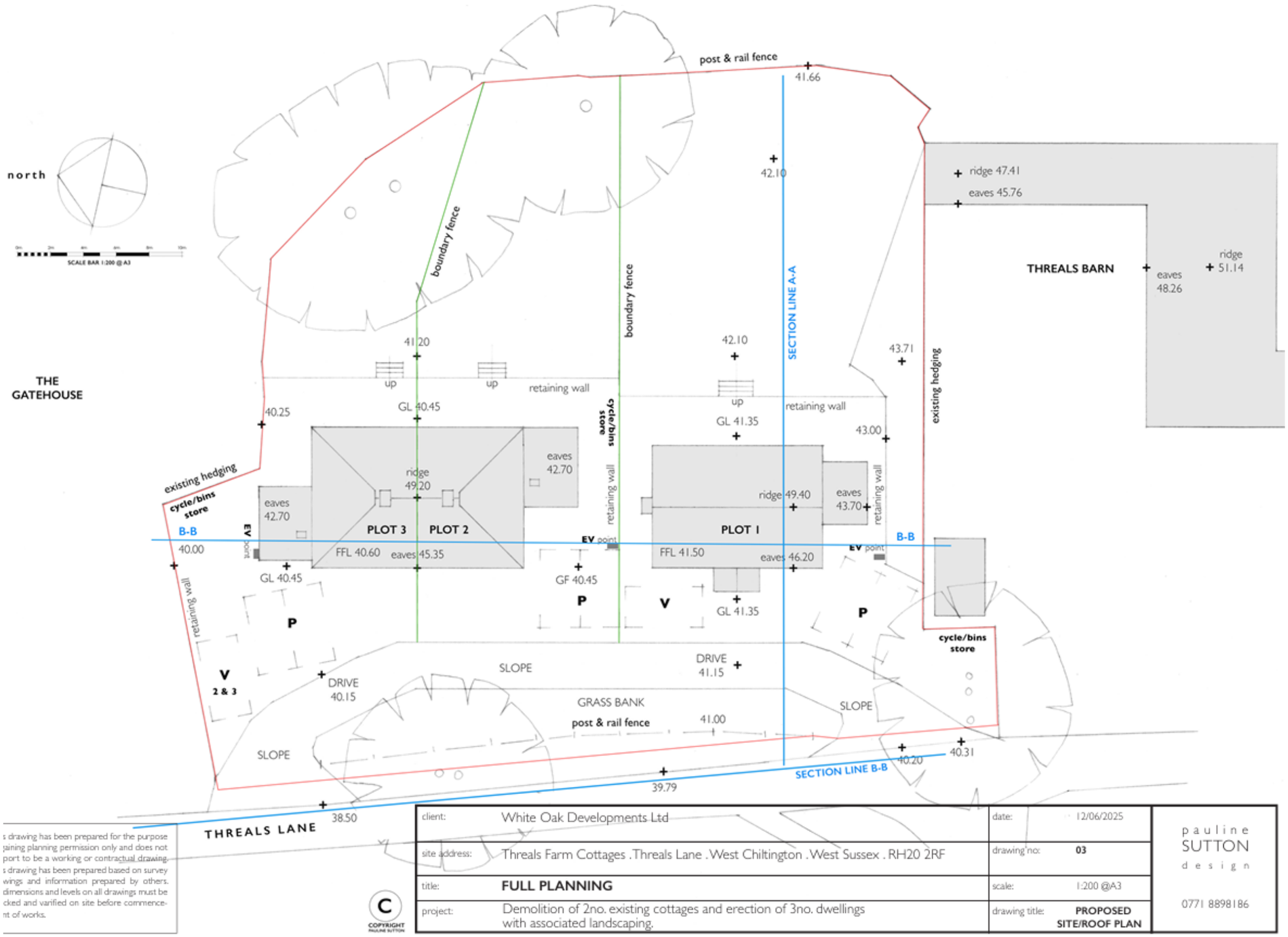
With regard to the proposed WML-CL47 - bat earned recognition class licence, a site visit must have been undertaken within three months prior to submission of the site registration form to verify that conditions have not changed since the most recent survey was undertaken and that the species, roost type and impacts remain in scope of this licence.

[7] https://www.habibat.co.uk/bat-boxes; and https://www.ibstock.co.uk/product/ecohabitats/bat-box
[8] https://www.bats.org.uk/our-work/landscapes-for-bats/landscape-and-urban-design
[9] https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/

Appendix A – Existing Layout and Proposed Development

A.1 Existing property

A.2 Proposed development



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s drawing has been prepared based on survey
wings and information prepared by others.
dimensions and levels on all drawings must be
cked and varified on site before commence-
nt of works.

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client:	White Oak Developments Ltd	date:	12/06/2025
site address:	Threals Farm Cottages .Threals Lane .West Chiltington .West Sussex . RH20 2RF	drawing no:	03
title:	**FULL PLANNING**	scale:	1:200 @A3
project:	Demolition of 2no. existing cottages and erection of 3no. dwellings with associated landscaping.	drawing title:	**PROPOSED SITE/ROOF PLAN**

pauline SUTTON design

0771 8898186

Appendix B – Survey Equipment used and Survey Timings and Weather

Survey equipment

Equipment	Sensor	Make	Model	Number deployed
NVA	Thermal imaging	Pixfra	Arc Series PFI – A613	2
	Thermal imaging	Guide	Track IR Pro 19mm	2
Bat detector	Full spectrum	Elekon	Batlogger M2	2
	Full spectrum	Wildlife Acoustics	Song Meter SM4 Bat FS	1

Note: Roost characterisation survey equipment was restricted to one NVA and bat detector.

Emergence survey timing & weather conditions

	19.07.25 – Survey 1	27.07.25 – Roost characterisation survey	09.08.25 – Survey 2
Start time (hrs)	20:50	20:41	20:15
Sunset (hrs)	21:05	20:56	20:33
End time (hrs)	22:35	22:00	22:05
Temperature (start – end) (°C)	18.9 – 17.0	18.2 – 17.2	18.8 – 15.9
Relative humidity (start – end)	80.2 – 89.0%	62.3 – 66.4%	72.2 – 84.5%
Wind (mph)	Still	Still	Still
Cloud cover	50%	100%	0%

Appendix C – Survey locations and Equipment Deployment

Surveyor and equipment deployment

Note: North to top of photo. Non-attended bat detector and NVA located at point 'D'. Star indicates location of bat emergences.

Appendix D - Photos

Photo 1 – South and west aspects. Arrow indicates bat emergence location.

Photo 2 – Porch, west aspect

Photo 3 – Single storey extension to north, west aspect

Photo 4 – Extension and north aspect of the property

Photo 5 – East and south aspect

Photo 6 – Example of chicken wire soffits

Photo 7 – Internal loft void, note missing crawl boards at eaves

Photo 8 – West (left) and east (right) internal gable ends. Note crack in stone wall on western gable and high levels of external light from underlying rooms, pipe and window on respective gables.

Photo 9 – Probable Pipistrel sp. dropping to east of loft space on crawl board

Appendix E – NVA Vantage Point Record for Survey 1 & 2

Photo D1: View from Point A – 19.07.25

Photo D2: View from Point B – 19.07.25

Photo D3: View from Point C – 19.07.25

Photo D4: View from Point D – 19.07.25

Photo D5: View from Point A – 09.08.25

Photo D6: View from Point B – 09.08.25

Photo D7: View from Point C – 09.08.25

Photo D8: View from Point D – 09.08.25