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Working for the Client - Working with Wildlife

Little Court, South Wraxall, Wiltshire, BA15 2SE

AEUK 1596

Bat & Bird Survey and Assessment

Roger Martindale

23rd September 2024



Registered Company address:

**Alder Ecology UK Ltd, 22, Millards Close, Hilperton Marsh, Trowbridge, Wiltshire
BA14 7UN**

Tel: 01225 765604 Mob: 07533 273939 e-mail: rmartindale@btinternet.com

Company registration number 6852967

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Introduction

The site, Little Court, Churchfields, South Wraxall, Wiltshire BA15 2SE national grid reference: ST833648 (what3words recording.layers.probably) (hereafter referred to as the “site”) has been assessed for breeding birds and bats based on the assessment criteria within the Bat survey guidelines 2023 and from undertaking a visual daytime inspection on 10th June 2024 and emergence surveys and breeding bird checks on 2nd July 2024, 31st July 2024 and 11th September 2024. The total site size is approximately 0.264ha (0.653 acres) of residential gardens with paving and backs onto open fields in the south and east of the site.

The site is located in the village of South Wraxall, Wiltshire and is set in residential setting surrounded on the north and west by residential properties and to the south and east has a boundary with open fields. The habitat is rural and considered moderate/high quality for bird and bat species with limited municipal lighting making it a good quality environment for birds and bats.

Proposed works

The plans for the property are proposing the re-roofing of the above listed building.

Objectives

The objectives of the ecological assessment were to:

- Identify if bats/bird are roosting on site or have potential to roost/breed on site;
- Identify the presence or potential presence of bats a protected species whose disturbance may require consent under The Conservation of Habitats and Species Regulations, 2010;
- Identify the need for further targeted surveys on site;
- Identify any bat/bird species which may require special mitigation during the works; and
- Identify any areas that may require special protection during the development.

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Map 1 showing the approximate ownership plot

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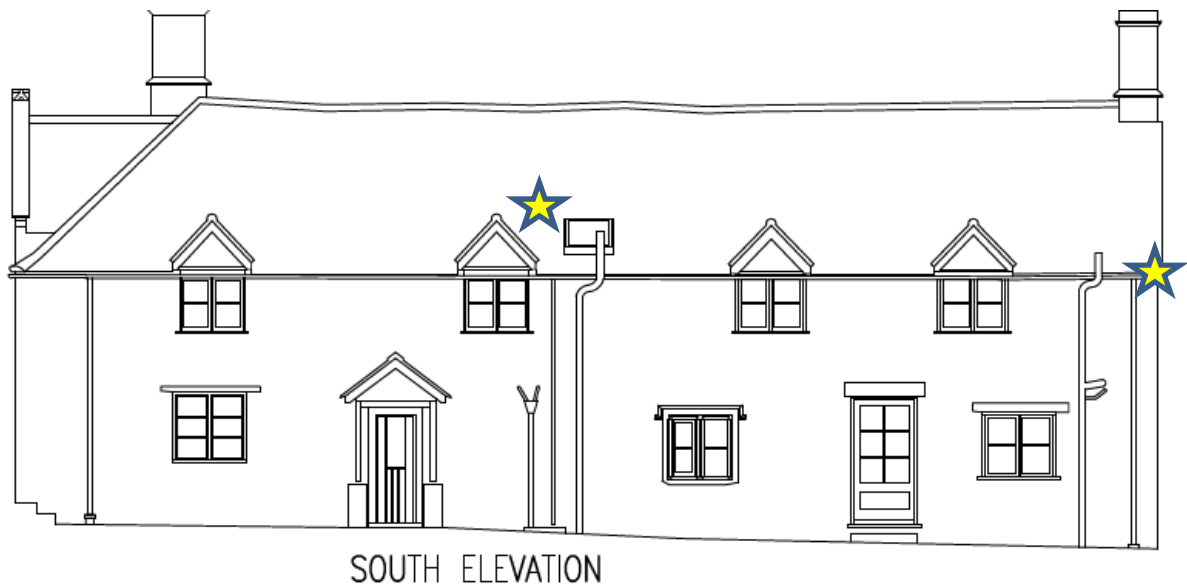


Figure 1 South elevation of the property showing two bat roosts yellow stars

Methodology

Building Inspection bats

The methodology, surveyors and equipment used were undertaken in accordance with and guided by the BCT bat survey guidelines 3rd edition 2023.

Physical external/internal site inspection of the building was undertaken by the lead surveyor.

The surveyor conducted this inspection using the equipment described below to assist the inspection, and approximately a half day of search effort was expended. A 3.8m telescopic ladder was used to gain access to various points and a Led Lenser (2 million candlepower) searchlight fitted with a red filter was used to search dark areas for signs of bats. A Pro Vision 2100 Endoscope was utilised to assist inspection of internal spaces. Pentax 0.5m Papilio (8.5x21) close focusing binoculars were used to view areas inaccessible on foot. A telescopic inspection mirror was used to look on top of structures for evidence of bats.

The physical search includes a search for live animals and a search for other signs that give an indication of past or present occupancy as outlined below.

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In the case of bats, typical indicators include droppings (which are characteristic and can often be speciated or at least be indicative of species type), signs of staining, urine splashing, characteristic odours, and accumulations of discarded prey remains.

In order to record and observe bats in the roosts if present a Fenix 1,000,000 torch with red filter was used along with a Guide IR 518 Thermal imaging camera and a Genysys NVs Discovery 5X PG Night vision scope with a 810NM infra-red illuminator was used to aid detection and identification. This enables bats to be pin pointed within buildings and enabled observation of bats in the roost if present.

Breeding birds

A check was undertaken at the same time for breeding birds within the property or in close proximity to the property. Using standard techniques to search for breeding birds; looking for historic use of the property (old nests), current use of the property or gardens and birds calling or holding territory.

Assessment of the Building for Bat Roosting Potential

The site was visited during the daytime on 10th June 2024 during which the assessment of the building for bat potential was undertaken.

The surveyor conducted a visual inspection. This consists of two parts. The first part (building assessment) was undertaken during this survey. The second part (emergence survey) was undertaken due to assessment potential recorded as moderate/high suitability for bats.

A DJI Mavic mini 2 drone was used to aid the survey of the roof of the property and areas around the building.

- Use close focusing binoculars to inspect the building from the ground to the roof inside and outside.
- Inspection of all aspects of the building.
- Look for features indicative of bat roosts cracks and crevices inside and outside building.

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- Looking for signs of bat occupation both inside and outside the building and areas in close proximity.
- Use of a high powered torch to highlight cavities and shady areas of the building.

Evening emergence/activity bat detector surveys

Prior to the commencement of the acoustic survey the surveyors visually inspected the buildings for bats in known favoured roosting areas. On completion of this task the surveyors positioned themselves to allow for inspection of bats exiting/re-entering the buildings. Surveyors also positioned themselves to be able to see bat emerge inside the buildings prior to exiting the building to forage externally.

An Anabat SD1 detector with PDA attachment and a time expansion bat detector (Pettersson D240x) were used by both the lead surveyor and assistant. The time expansion bat detector was linked to a digital recorder (Roland Edirol R09) for subsequent sonogram analysis in the using 'Bat Sound V3.31' software to further increase the chance of accurate species identification. The Anabat detector with PDA records information directly into the device for computer analysis later using AnalookW bespoke software. The surveyors supplemented this active detector work with the use of passive Anabat SD1 remote detectors placed strategically around the site. The detectors were deployed in different locations during each survey. The data collected was analysed using AnalookW bespoke software to identify species recorded. All calls for both detector types were cross referenced to a call reference collection library of known bat species to confirm species presence

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Environmental variables

Table 1 Environmental variables

	Temp start	Temp end	Wind speed max	Wind speed ave	Cloud cover start	Cloud cover end	Relative Humidity	Precipitation
10th June 2024	17.2°C	17.4°C	2.0mph	0.3mph	2/8 oktas	2/8 oktas	83.0%	None
2nd July 2024	17.9°C	17.4°C	2.7mph	0.4mph	3/8 oktas	3/8 oktas	85.0%	None
31st July 2024	27.5°C	25.9°C	1.1mph	0.1mph	8/8 oktas	8/8 oktas	83.0%	None
11th September 2024	13.3°C	11.3°C	3.6mph	1.4mph	0/8 oktas	0/8 oktas	81.0%	None

The Building inspection survey was carried out on 10th June 2024 emergence surveys on 2nd July 2024, 31st July 2024 and 11th September 2024 in suitable weather conditions in accordance with Bat Conservation Trust (BCT) survey guidelines for building inspections.

An assessment of breeding birds was undertaken looking for historic or recent nests on 2nd July 2024, 31st July 2024 and 11th September 2024. Evidence of breeding birds was recorded associated with the property in the chimney on the east gable.

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Limitations

The survey was carried out at an optimal time of year for a building assessment and emergence bat surveys according to the Bat Conservation Trust Bat Survey good practice guidelines 2023 and an optimal time for breeding bird surveys. While no biological survey can guarantee that all cues and signs of protected or notable species will be recorded, Alder Ecology UK Ltd feel confident that all key indicators for bats and breeding birds were noted during this survey window. The survey at Little Court, Churchfields, South Wraxall, Wiltshire BA15 2SE was not constrained as full access was available at the site for the building inspection and emergence survey. The roof inspection was undertaken from the ground and aided with the use of a drone.

Personnel

The survey and assessment on site was carried out and lead by Roger Martindale BA(Hons), MSc, CEnv, MCIEEM Principal Ecologist and Director of Alder Ecology UK Ltd who is a qualified and experienced professional Ecologist with over 25 years' experience, Chartered Environmentalist and full member of the Institute of Ecology and Environmental Management (CIEEM). Roger is an approved trainer for Bat Conservation Trust, Natural England and CIEEM and has recently ran the new Natural England Low Impact Bat Class licence training and a member of the technical review panel of the recently published 4th edition of the Bat survey guidelines. He currently holds a Natural England survey licence to legally undertake such assessments on site (licence number 2015-18372 CLS). During the surveys Roger was assisted by Rachel Whatton an experienced bat surveyors who has worked as an assistant surveyor for 20 years.

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Photographic plates



Plate 1 Building being surveyed Little Court, South Wraxall



Plate 2 north facing aspect at the rear of the property

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Plate 3 Roof ridge well maintained and no obvious entry points for birds or bats



Plate 4 Area used by roosting bats during surveys 1 and 2 only NOT during survey 3

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Plate 5 roof void filled with cobwebs showing no bats have been flying inside the void



Plate 6 common rafter and purlin roof void throughout

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Plate 7 Evidence of bat droppings spilling through the from the underfelt



Plate 8 Area used by a single common pipistrelle bat in September 2024

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Plate 9 Area with potential around the dormer



Plate 10 Roof area used by x2 common pipistrelle bats during survey 1 and 2 only

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Plate 11 Chimney stack used by breeding Jackdaws



Plate 12 Rip in chicken wire allowed access for jackdaws

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Results Data search

The general area around South Wraxall has a moderate/high biomass of bat species and the site is within 5km of the Bath and Bradford on Avon SAC designated for bats and records of Greater and Lesser horseshoe bats are high as a result and none were recorded during the survey.

Table 2 Bat records 2km radius BA15 2SE

Bat Species	Distance from site centre (km)
Bats	< 1km
405 records returned	> 2km
Bechsteins bat	> 2km
2 records	
Brown Long eared	> 2km
15 records	
Common Pipistrelle	> 2km
1 record	
Daubentons bat	> 2km
73 records	
Greater Horseshoe bat	> 2km
105 records	
Lesser Horseshoe bat	> 2km
117 records	
Natterer's bat	> 2km
92 records	

The wider area around the site has good farmland hedgerows, woodland, grassland, river and canal habitats for bats and the numbers of bat species recorded with 2km of the site is moderate/high and shows the importance of the wider area for bats.

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Results

Internal void assessment

The internal roof void is L-shaped approx. 14m length x 7m width (x2 sections) in size and is traditional timber with common rafters, purlins and brace beams. The roof is approx. 1.2m in height and is insulated with glass fibre. The roof is lined with bitumastic roofing felt which is in good condition with a few rips but no obvious access externally. The internal space has suitable materials and space for roosting bats and evidence of use by bats was recorded close to the hatch on the south side where a cluster of droppings had spilled through the felt see plate 7. No evidence of nesting birds was recorded either recent or historic evidence inside the roof void. The area is fitted with an artificial light which can be used when accessing the void. There was no obvious access to the void via the roof surface or under the eaves and the void had accumulated cobwebs showing nothing had previously been flying inside the void.

The results of the building assessment found recent evidence use by bats in the internal roof void with clustered droppings below a rip in the felt. There were no accumulations of butterfly or moth wings an indication of a feeding area and there was no sign within the internal void of any roosting bats being observed. From the assessment the internal roof void is not a bat roost as the bats appear to be roosting externally between the felt and the tiles but droppings have spilled into the void this was confirmed to be the case during the surveys.

The roof void was examined for breeding birds and the area had no evidence of recent or historic use by breeding bird species and no means for birds to access the internal void. Breeding birds (Jackdaws) have been recorded using the chimney on the east end of the building see plates 11 and 12.

External assessment

The main roof is a dual pitch (east- west ridge and north south ridge) with clay roof tiles and maintained in good condition (despite tile not fully matching) with a few slipped tiles as can be seen in plates 3 and 4. The tiles which are reasonably well maintained provided limited opportunities for access to the internal roof void but did provide opportunities for external roosting within the roof area, around dormers, skylights and lead flashing and under slipped

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tiles and was assessed as moderate potential for roosting bats. It was also assessed to have moderate potential for nesting birds at the time of survey.

There are two areas confirmed as bat roosts as a result of the survey the areas are shown in figure 1 and plates 4 and 8. Emergence surveys confirmed species composition and numbers.

Emergence survey results

Survey 1- 2nd July 2024 Sunset 2127hrs

During survey 1 the surveyors and equipment were located to observe the area by the skylight on the south side and the area under the eaves on the east side. Two bats, common pipistrelle emerged from the area near the skylight shown in plate 4.

The first bat to emerge was a common pipistrelle at 2138hrs followed by another common pipistrelle bat at 2146hrs both bats flew east towards the open fields. The peak count was x2 common pipistrelle bats and the roost was a day roost. Two other species were recorded a natterers bat which flew from west to east through the rear garden and travelled from off site. A noctule bat flew from offsite north to south through the site. A total of three species were recorded foraging and commuting in the area around the property during the survey they included: common pipistrelle, noctule bat and natterers bat.

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Map 2 **Survey 1** bat survey results yellow common pip, noctule bat red, natterers bat black.
Surveyors red circle, Roost location yellow star. Passive detectors yellow triangle

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Survey 2- 31st July 2024 Sunset 2057hrs

During survey 2 the surveyors and equipment were located to observe the area by the eaves on the south side and the area of the roof on the north side. No bats emerged from the north side and two bats, common pipistrelle emerged from the area close to the skylight as was previously the case.

The pattern was similar to survey one with same number of roosting common pipistrelle bats x2 peak count and roost was still a day roost. The first bat emerged at 2130hrs and the second bat at 2132hrs. The only difference was there was more feeding activity in the rear (south) of the site with a total of five species recorded flying, commuting or foraging on site. They included noctule bat, common pipistrelle bat, serotine bat, leislers bat, soprano pipistrelle bat

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Map 3 **Survey 2** bat survey results yellow common pip, blue soprano pip, serotine orange, Leislers green, noctule bat red. Surveyors red circle, Roost location yellow star. Passive detectors yellow triangle

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Survey 3- 11th September 2024 Sunset 1928hrs

During survey 3 the surveyors and equipment were located to observe the area of the eaves on the south side and the area of the roof on the north side. No bats emerged from the north side and one bat emerged from an area under the south eaves and east gable and position an area not previously used.

The pattern was different from survey 1 and 2 with only one roosting bat observed emerging and the roost was confirmed as a day roost peak count x1 common pipistrelle bat. Three common pipistrelle bats were observed feeding in the south garden and bats were social calling as can be seen in the sonogram in appendix 1. One soprano pipistrelle bat was observed and recorded feeding on the north boundary.

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Map 4 **Survey 3** bat survey results yellow common pip, blue soprano pip. Surveyors red circle, Roost location yellow star. Passive detectors yellow triangle

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Passive detector species composition results

2nd July 2024 x2 nights

- Common pipistrelle
- Soprano pipistrelle
- Noctule bat
- Natterer's bat

31st July 2024 x2 nights

- Common pipistrelle
- Soprano pipistrelle
- Noctule bat
- Serotine bat
- Leislers bat
- Long eared bat

9th September 2024 x2nights

- Common pipistrelle
- Soprano pipistrelle

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Ecological lighting assessment method

Method

Ecological Lux level baseline for the site has been assessed taking readings 1hr 30mins after sunset. The site has been assessed using standard industry equipment the Minolta T10 Luminance meter with all readings taken in a horizontal plane.

The lighting outputs have first been recorded and mapped with all the luminaries both on and off site considered during this process including offsite light spill and light trespass.

Illuminance levels throughout the site and at the boundary have been produced so that the current site baseline is understood. The Lux levels on the map below shows current levels including light trespass from adjacent areas.

Light trespass has been assessed and the line of sight from neighbouring properties has also been considered in terms of impact on the site.

The Society of Light & Lighting guidance documents all apply a common Environmental Zoning system, which is summarised below.

Zone E1

Areas with intrinsically dark landscapes: National Parks, areas of outstanding natural beauty (where roads are usually unlit) Rural Environmental

Zone E2

Areas of 'low district brightness': outer urban and rural residential areas (where roads are lit to residential road standard) Urban Environmental

Zone E3

Areas of 'middle district brightness': generally urban residential areas (where roads are lit to traffic standard) Urban Environmental

Zone E4

Areas of 'high district brightness': generally urban areas having mixed recreational and commercial land use with night-time activity

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Results of the ecological lighting assessment

The site has a variation in light levels with dark areas on the property boundary which would be in Zone E1 and security lighting and light trespass from the property and levels recorded at 4.99 lux and therefore has been assessed overall ecologically and sits within Zone E2.



Map 5 showing site lux levels from ecological lighting assessment NOT A Full Professional lighting assessment. Roost locations yellow star.

*Notes: Lux levels recorded on site 31st July 2024

Luminance meter *Lux level taken using Minolta T10 Luminance meter in horizontal plane.

Moon phase *31st July 2024 Waning crescent moon 20% illuminated at 8/8 oktas cloud cover

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Conclusions

The survey concluded that the internal roof structure of the building had low potential for roosting bats and that evidence recent or historic was recorded internally but had entered the void due to a tear in the roof felt not due to bats being present inside the void. Bat are not presently roosting or flying in the internal space of the void. The survey of the building exterior found the building to have moderate potential for roosting bats but this was upgraded after the emergence survey to high potential as a day roost of two common pipistrelle bats was confirmed. The area by the skylight on the south side was confirmed as a day roost with a peak count of x2 common pipistrelle bats. Another area of the roof on the south side by the east gable and south eaves junction was also confirmed as a day roost in September for x1 common pipistrelle bat.

The assessment concludes that the building (south facing roof) at the time of survey is a confirmed bat roost and so the building has legal protection in that respect and that work on the structure has to take account of the presence of bats. Any work to the building may require a Natural England derogation licence if the roost is to be damaged, destroyed, or modified or the bats disturbed during the works. It may be possible to undertake the work at a time when bats are not in residence or in a way that does not impact the roost but this would only be known once the full extent of the works and methods to be used are fully known. The proposed plans may not impact the bat roost and so a derogation licence may not be required so long as the roost is not impacted or disturbed during the works or the roost can be retained in the same location with the same access point.

Evidence of nesting/breeding birds (Jackdaws) was recorded within chimney on the east gable and therefore consideration will be required during the works in relation to breeding birds if at a time when they are present.

Any work to the building will not have an impact either directly or indirectly on the integrity of the Bradford on Avon and Bath SAC or the designatory features of the SAC, Greater Horseshoe, Lesser horseshoe or Bechsteins bats.

The general Bath/Wiltshire area has a high biomass of bats and therefore situations can change quickly with mobile species such as bats or birds, if opportunities arise particularly as the site is close to good quality habitat with a moderate species composition of bats recorded during the surveys. Therefore measures should be employed to prevent ingress by bats or

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birds into the property during any work to prevent conflict between scheduled works and roosting bats or breeding birds if the work is undertaken during the active season for bats April to October when they fly and forage and can utilise opportunistic roosts which have become available or breeding season for birds March to September.

Therefore provided that work is undertaken according to the recommendations below and under ecological guidance if required the likely significant effects can be minimised and risk reduced to be proportionate with the likelihood of the presence of bats or birds which is assessed to be high within the building according to the latest building inspection and emergence survey results.

Recommendations

The following recommendations are provided:

- Bats are a protected species and a material consideration in the planning process. If a bat roost is impacted by a proposed scheme and will be damaged, destroyed, modified or the bats disturbed, suitable and proportionate mitigation and or compensations will be required to maintain the favourable conservation status of bats in their natural range or not impact their ability to attain favourable conservation status in the future.
- The main building roof Little Court South Wraxall is a legally protected bat roost and remains legally protected whether bats are present or not according to British law.
- Any works to the building may require a derogation licence issued by Natural England but only after planning permission is secured.
- If the roost cannot be retained then a compensation roost per species will be required. Due to the low numbers encountered bat boxes may be considered suitable and proportionate by Natural England but the new roosts would need to be available for bats returning to the area in early spring of the following season after planning consent.
- Artificial bat boxes if used on the site should be erected at 2/3m in height south or west facing suitable for serotine and common pipistrelle bats.
- Maintain building integrity up and until the point of works to avoid occupation by bats or birds particularly as a high species composition has been locally recorded during the surveys.

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- If any bats are encountered on site works will immediately stop and the ecologist will be called for advice. The bat expert will attempt to rescue bats if in immediate danger and hold them in accordance with the Bat Workers Manual and in a suitable handling box for release in the evening or continued roosting.
- Builders and contractors are explicitly forbidden from handling bats or disturbing breeding birds.
- All nesting birds are protected while breeding or making a breeding attempt. Should breeding birds be discovered advice must be sought from a qualified ecologist.
- If breeding birds are discovered on site work will be delayed until the young birds have fledged (flown the nest). The area must be secured and birds left undisturbed.
- Any lighting of the rear of the property should be minimised to prevent light spill onto the woodland and if required should be activated using short timed motion sensors.
- Do not illuminate the site of any compensation roost above baseline levels recorded on site and highlighted in this document or use short duration motion sensor lighting.

Ecologists contact details

Roger Martindale BA (Hons), MSc, CEnv, MCIEEM

Chartered Environmentalist

Director

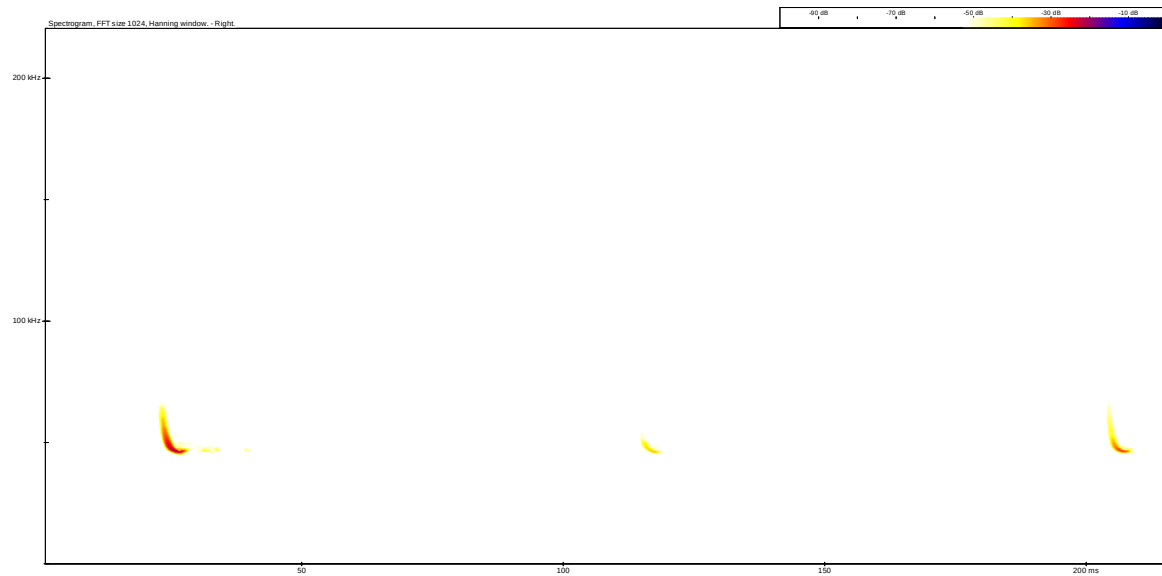
Direct Dial Tel: 01225 765604

Mobile: 07533 273939

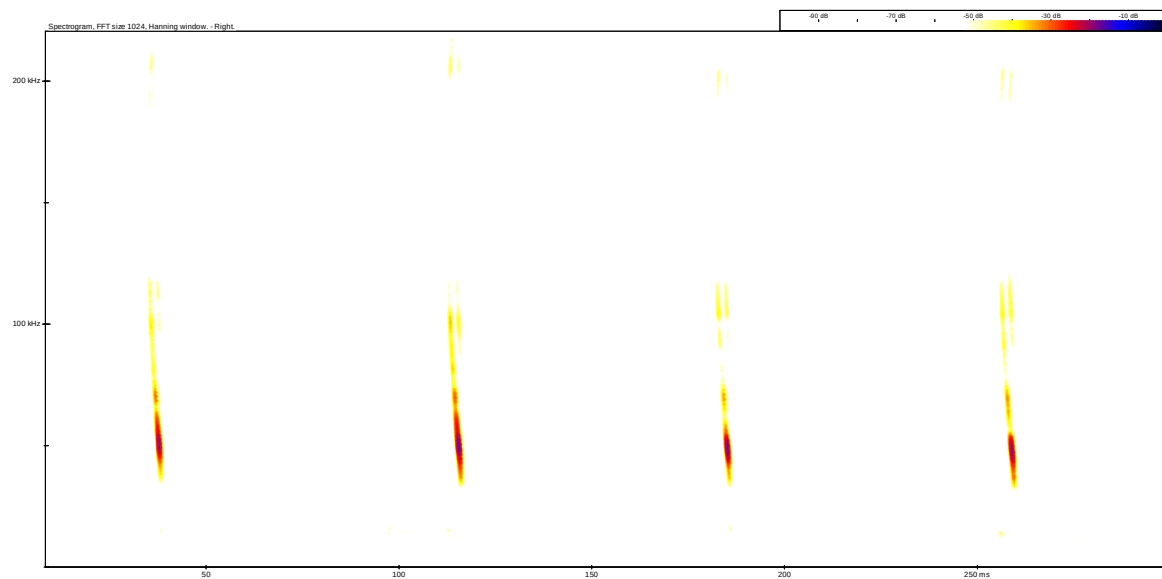
e-mail: rmartindale@btinternet.com

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Appendix 1 sonogram examples

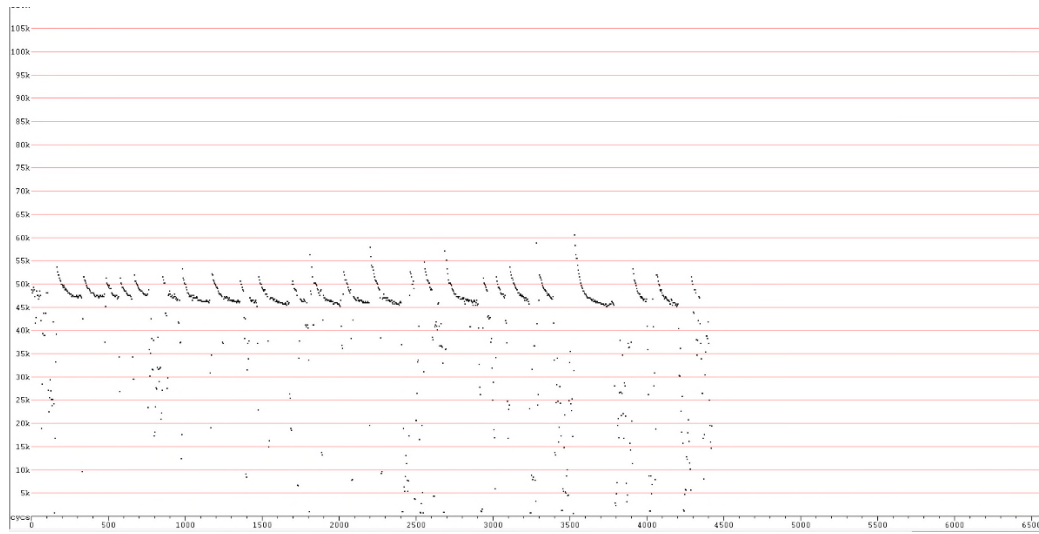


Common pipistrelle emerging from the building

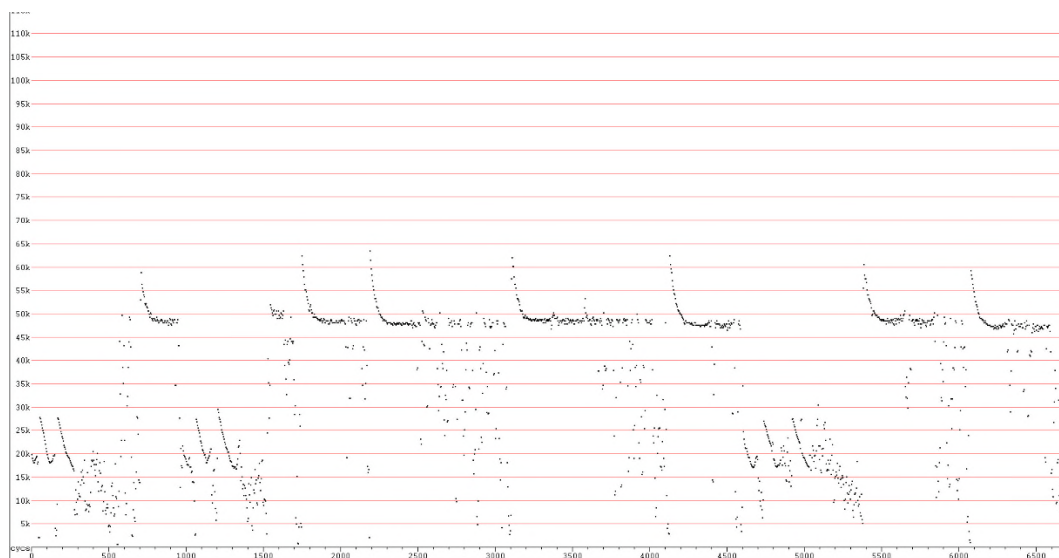


Natterers bat flying through the site west to east

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Common pipistrelle flying in garden 2nd July 2024



Common pipistrelle social calling September 2024