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Bat Survey and Mitigation Strategy

of

**Park Farm, Worlds End Lane, Buxhall
Stowmarket, IP14 3EB.**

Survey Commissioned by:	Mr Paul Canham
Project Number:	REP23005
Report issued:	6 th July 2023
Date of surveys:	Emergence surveys: 17 th May, 9 th June, and 25 th June 2023 Static Monitoring: 17 th May to 9 th June 2023
Project Ecologist:	Odette Robson BSc (Hons) PhD MCIEEM

Project number:	Title:	Revision:	Issued:
REP23005	Bat Survey and Mitigation Strategy of Park Farm, Worlds End Lane, Buxhall, Stowmarket, IP14 3EB.	Final	6 th July 2023

Disclaimer

The findings detailed in this report are based on evidence from thorough survey, where every effort has been taken to provide an accurate assessment of the site at the time of the survey. No liability can be assumed for omissions or changes after the survey has taken place.

This report was instructed by Paul Canham and following the brief agreed. Robson Ecology Ltd has made every effort to meet the client's brief.

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A Protected Species Licence is required: Natural England (the licensing authority in England) require data from the most recent survey season. This report may not be relied upon beyond 12 months, and surveys may need to be updated before this time to inform a licence application.

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1 Summary

Site:	Park Farm, Worlds End Lane, Buxhall, Stowmarket, IP14 3EB.
Grid Reference	TL 998312 56290
Report Commissioned by:	Mr Paul Canham
Date of Surveys:	Emergence survey: 17 th May, 9 th June and 25 th June 2023 Static Monitoring: 17 th May to 8 th June 2023

Considerations	Description	Timings, potential impacts and mitigation.
Survey results	Three emergence/ re-entry surveys - May and June 2023. 23-nights of static recording in loft	A single roosting brown long-eared bat was recorded on one emergence survey. Static detector results confirmed that the loft was used at low levels: Brown long-eared bat calls were recorded on five of the 23 recording nights.
The House loft supports a day-roost for individual/low numbers of brown long-eared bats: A Bat Low Impact Licence (BMCL) will be required to proceed with re-roofing.		
Mitigation	Roost replacement and precautionary working methods.	Exclusion of bats prior to start of works, precautions during tile removal, reinstating the roost in the loft on completion, and mitigation will be carried out, under licence. Precautionary timing restrictions will apply for implementing the BMCL, to avoid times when bats are in torpor. Spring and autumn are recommended for building works, however, as there will be no impact to a maternity roost, the licence can be implemented between April and October inclusive. The loft void and access points will be reinstated on completion of the re-roofing, with minor modification (roof-lining), and new access points for bats into the loft. Internally, the roof timbers will remain unchanged. F1-Type bitumen/hessian-backed felt should be used as roof-lining in bat roosts. Most breathable membranes are harmful to bats and must not be used in roosts; however, there is currently one type of breathable membrane (TLX BatSafe) which has passed a snagging propensity test and can be licensed by Natural England for use in roosts.
Precautionary measures	Sensitive lighting.	External lighting must not be directed towards roost entry points, bat box/features, ponds, and vegetation/trees. All garden boundaries will be retained as dark corridors to be used by bats on leaving/entering roost features.
Additional enhancement	Bat box.	On a garden tree, to enhance the site on completion, in line with planning objectives for positive gains for biodiversity.

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2 Introduction

2.1 Background

Robson Ecology Ltd was commissioned by Mr Paul Canham to undertake Bat Surveys at the House at Park Farm, Buxhall. The report is required to inform Listed Building Consent and a bat-licence application for re-roofing of the main roof of the dwelling.

2.2 Legislation

Bats are strictly protected under European and UK legislation (Conservation of Habitats and Species Regulations 2017, and the Wildlife and Countryside Act, 1981). Four UK species are also listed under Annex II of the Habitats Directive.

Seven species; barbastelle *Barbastella barbastellus*, noctule *Nyctalus noctula*, brown long-eared *Plecotus auritus*, soprano pipistrelle *Pipistrellus pygmaeus*, greater horseshoe *Rhinolophus ferrumequinum*, lesser horseshoe *Rhinolophus hipposideros* and Bechstein's bat *Myotis bechsteini* are all Species of Principal Importance in England (SPIE) - formerly UK Biodiversity Action Plan Priority (BAP).

2.3 Aims and Objectives

- To carry out full bat surveys to inform a planning application for re-roofing, and a bat licence application.
- Assess the potential impact of proposed works to any roosting bats;
- Provide an overview of the legal obligations and precautions required to ensure that individual bats are not harmed, or the local conservation status of the species affected, by temporary loss and modification of the roost through re-roofing.
- Detail appropriate and proportional mitigation and/or compensation.

2.4 Site Survey Methods

2.4.1 Preliminary Roost Assessment

The survey was undertaken in accordance with Bat Surveys for Professional Ecologists: Best Practice Guidelines (Collins, 2016). All impacted parts of the House and immediate surroundings were assessed externally and internally for potential bat roosting features using binoculars, high-powered torch, and a borescope inspection camera (Rigid CA300).

Aerial photographs, available maps and survey of the area outside the immediate zone of impact (where access was available) was used to identify any bat habitat in the wider landscape which could be impacted by proposals. The likely impact of the proposals (operational phase) to bats using the surrounding area (foraging and/or commuting) was also assessed.

2.4.2 Emergence Surveys

Surveys comprised three dusk emergence surveys with two surveyors and night-vision aids covering all elevations of the House; and a 23-night period of ultrasound recording inside the loft.

The survey methodology followed standard techniques and guidance, as recommended by Natural England and the Bat Conservation Trust: *Bat Surveys for Professional Ecologists: Best Practice Guidelines 3rd Edn* (Collins, 2016), and the Interim Guidance to the 4th Edition.

Equipment used included full spectrum Echo Meter Touch bat detectors/recorders, Sionyx night-vision cameras, Nightfox Whisker, Nightfox Red, Canon XA11 Camcorder with IR

torches (Nightfox XB5) and wide-angle illuminators, a FlirE4 thermal imaging camera, and SM4Bat-ZC static detector. Direct observation was also used to record bat activity on the site. All surveyors were equipped with one of the night-vision aids (NVA) listed above during each survey, and additional NVAs were used on other aspects of the House. Footage was reviewed manually, post-survey. Surveyors were equipped with a walkie-talkie and remained in contact throughout the survey.

2.4.3 Desk Study

A 2km radius search for statutory designated sites was conducted using “MAGIC”, the Multi-Agency Geographic Information system for the Countryside.

A datasearch was requested from Suffolk Biodiversity Information Service (SBIS): Records of all bat species within a 2km radius of the site were provided on 25th January 2023.

2.5 Site Context and Proposals

An application for Listed Building Consent (LBC) has been made to Mid Suffolk District Council (MSDC) to replace the clay tiles on the main roof of the Grade II Listed C17 Farm House.

The property lies approximately 1km to the south of the village of Buxhall, and approximately 5km to the south-west of Stowmarket. The Farmhouse and associated Barns are surrounded by well-managed gardens with ponds, lawns, planted beds, and mature trees.

The property is surrounded by arable land, and the wider landscape is predominantly agricultural, mainly arable land with some pasture, pockets of woodland and hedged field boundaries.

A number of ponds are present within the local landscape, though no significantly large water bodies. Finborough Wood and the Rattlesdon River are approximately 2.5km to the north-east.

2.6 Surveyor Details

Three surveyors were present during each survey. Surveys were undertaken by:

- Odette Robson BSc (Hons) PhD MCIEEM; a full member of the Chartered Institute of Ecology & Environmental Management (CIEEM) and licensed by Natural England (Licence ref: CL18:2015 10940-CLS-CLS) to survey for bats (Level 2). Lead-surveyor – present on all surveys.
- Daniel Anderson BSc (Hons) – an ecologist with 5 years of bat survey experience.
- Ben Robson, an experienced ecologist assistant in his 5th season of bat surveys.

3 Results

3.1 Desk Study

The site lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ); Consultation with Natural England is required for infrastructure/aviation and planning applications impacting air pollution. Consultation is not required for Householder projects such as re-roofing.

There are no statutory designated wildlife sites within 2km (MAGIC, 2023).

The nearest European Protected Species (EPS) licence granted for bats is 1km to the north-west (2018-38137-EPS-MIT), for destruction of a common pipistrelle, soprano pipistrelle and brown long-eared resting place (MAGIC; 6th July 2023).

Suffolk Biodiversity Information Service (SBIS, 2023) provided records of four species of bats within 2km of the site the nearest was approximately 350m to the north-west (Pipistrelle spp., and brown long-eared). Records of the following species were provided:

- Three brown long-eared bat records (2018 and 2019), the nearest approximately 350km to the north-west of the site.
- Eight common pipistrelle records (2002-2021), the nearest approximately 350km to the north-west of the site.
- A single soprano pipistrelle roost record (2018) – 1km north-west.
- A single Natterers roost in 2004 – 1.8km to the south-east.

3.2 Survey Results from Preliminary Roost Assessment

A preliminary roost assessment was carried out at the property, including the loft, on 15th February 2023. Descriptions in Table 3.1 refer to numbers/locations shown in Figure 3.1 below.

Figure 3.1: Park Farmhouse – roof section numbering.

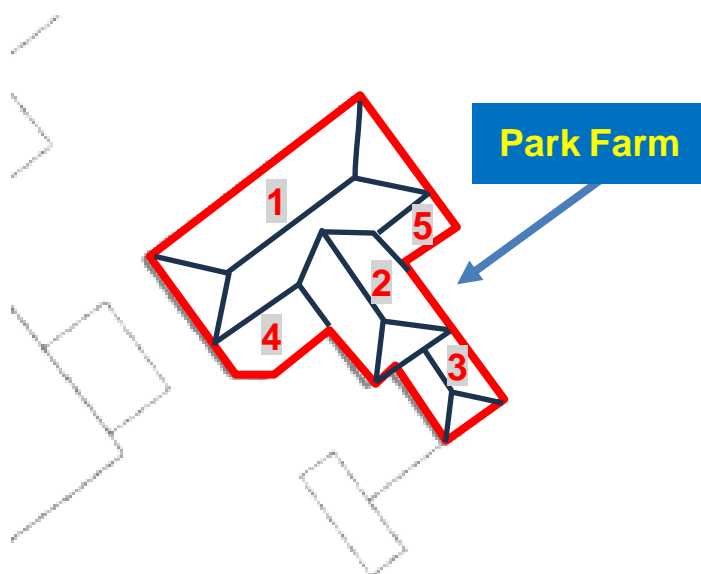


Table 3.1: Preliminary Roost Assessment (numbering as shown on Figure 3.1)

1) Main (Original) House - External.

An C17 two-storey timber-framed gabled house, externally rendered, with a clay peg-tiled roof and end chimney stack to the north-east gable. Roof tiles were largely intact, but lifting and slipped in places, particularly along the ridge.

Extended on the south-eastern elevation.

Glazed windows were intact and well-sealed into their surrounds.



1) Main (Original) House - Internal

Internally, the loft was heavily cobwebbed below the ridge to the northern end, but clear at the ridge to the southern end. Old timbers with no ridge-beam. A number of slipped and lifting tiles caused draughty internal conditions. Most of the void was not lined, with tiles laid directly to roof timbers and daylight showing in places. Part bitumen felt lining on the south-eastern roof slope (northern end). An internal water tank obstructed flight, though the loft was largely uncluttered by roof timbers/trusses and open. Approximately 3m height and lagging insulation throughout.

Approximately 200 medium-sized droppings (likely brown long-eared) were located in a discrete accumulation under the ridge beam, with a further 100 scattered throughout the loft, consistent with internal flight or occasional roosting. The droppings were of mixed age and likely to have accumulated over a number of years: Some droppings were very old, grey and desiccated; others were relatively fresh and likely to have been from the most recent active season.



2) Two-Storey Extension

Pan-tiled Victorian extension with double-pitch roof: Roof and ridge tiles well-sealed and intact.

Internally, the loft void interconnects with the main/original roof void. Narrow void (approximately 1m height), with no crevices between roof timbers - lath and plaster roof lining. Lagging insulation. No signs of bats using the void, and no potential egress/access points due to sealed roof lining.

Not scheduled for re-roofing.



3) Single-storey extension to TN2

This roof void was not inspected as it will not be impacted (directly or indirectly) by the proposed re-roofing of main roof (1).

4) Conservatory

Attached to the walls of TN1 and TN2.

Negligible potential to support roosting bats, and will not be impacted (directly or indirectly) by the proposed re-roofing of main roof (1).



5) Single-storey lean-to extension

Mono-pitched roof. This roof void was not inspected as it will not be impacted (directly or indirectly) by the proposed re-roofing of void #1.



3.3 Status of bats in Suffolk and the UK

Taken from The Mammals of Suffolk (Bullion, 2009), Suffolk Biodiversity Partnership (www.suffolkbis.org.uk) and Bat Conservation Trust (BCT) web-based information of population trends (www.bats.org.uk).

Of the 17 species of bat known to breed in Britain, 13 species are included within the Suffolk Grouped Biodiversity Action Plan (BAP) for bats.

Three bat species were recorded regularly during the surveys: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, and brown long-eared *Plecotus auritus*.

The most common and widespread species in Suffolk are the common and soprano pipistrelles, which also reflects national trends. The common pipistrelle may be recovering nationally (Bullion, 2009; BCT).

After pipistrelles, brown long-eared bats are the most widespread species in Suffolk, and nationally they are found throughout the UK but have declined due to changing agricultural practices, insecticide use in roof voids, and barn conversions. This species is common in suitable, rural areas of Suffolk.

3.4 Emergence Survey Results (2023)

All surveys were conducted in good weather conditions; The emergence surveys started approximately 15 minutes before sunset and continued for approximately 1.5 to 1.75 hours after sunset.

Table 3.1: Weather conditions and timings of surveys

Date	Survey Type	Sunset or Sunrise Time	Temp.	Wind	Cloud cover
17 th May 2023	Dusk Survey 20:30 – 22:25	Sunset: 20:47	10-9 °C	Beaufort 1 - 0	70%
9 th June 2023	Dusk Survey 21:00 - 22:50	Sunset 21:15	15 °C	Beaufort 2-3	<10%
25 th June 2023	Dusk Survey 21:05 – 23:00	Sunset 21:21	23 - 20 °C	Beaufort 3	20%

3.4.1 Dusk Survey - 17th May 2023

OR – NE of House (with Nightfox Red HD Infrared Night Vision Goggles, Nightfox Whisker, and Canon XA11, with Nightfox XB5 Infrared Torch).

First bat recorded was a common pipistrelle at five minutes after sunset, which emerged from the north-eastern gable end of the adjacent barn, foraging briefly then moving off towards the pond (to the north-east). A second common pipistrelle emerged from the barn gable at seven minutes after sunset, circled the garden and returned to roost. Two common pipistrelle bats foraged constantly over the two ponds to the north and east of the House, and between the ponds, for three quarters of an hour after sunset. Occasional sporadic common pipistrelle passes for the remainder of the survey.

No roosting recorded in the House.

DA – SW of House (with SiOnyx Aurora and Nightfox XB5 Infrared Torch).

The first bat recorded was a common pipistrelle at four minutes after sunset (not seen). A common pipistrelle emerged from the Barn gable end at seven minutes after sunset and re-emerged (after returning to roost) at 13 minutes after sunset. A further common pipistrelle bat emerged from the Barn gable end at 15 minutes after sunset.

Regular common pipistrelle foraging passes in the garden throughout survey. A single *Myotis* spp. pass at 78 minutes after sunset was the only other species recorded.

Plate 3.1: SiOnyx Aurora with Nightfox XB5 illuminators – SW of House - 17.05.23 (end of survey).



Plate 3.2: Nightfox Red with Nightfox XB5 and 12-Led 90°Wide Angle IR Illuminator – NE of House - 17.05.23.



3.4.2 Dusk Survey – 9th June 2023

OR – NE of House (with Nightfox Red HD Infrared Night Vision Goggles, Nightfox Whisker, and Canon XA11, with Nightfox XB5 Infrared Torch).

Pre-survey loft inspection: No bats recorded and no notable fresh bat droppings since previous visit.

The first bat (common pipistrelle) was recorded at 27 minutes after sunset, foraging over the pond to the east of the House.

Up to two common pipistrelle bats foraged around the ponds and to the front (north-western elevation) of the House for most of the survey – prolonged and constant foraging for the first 45 mins after sunset, and less constant, but still regular passes thereafter.

BR - SW of House (with SiOnyx Aurora and Nightfox XB5 Infrared Torch).

The first bat recorded was a common pipistrelle at 19 minutes after sunset – single pass around the House. High common pipistrelle activity throughout the survey -mainly foraging in the garden to the south of the House.

Plate 3.3: Canon XA11 with Nightfox XB5 and 12-Led 90°Wide Angle IR Illuminator – NE of House - 09.06.23.



Plate 3.4: Nightfox Red with Nightfox XB5 illuminators – SE of House - 09.06.23.



Plate 3.5: Nightfox Whisker with Nightfox XB5 illuminators – SE of House - 09.06.23.



3.4.3 Dusk Survey 25th June 2023

OR – NE of House (with Nightfox Red HD Infrared Night Vision Goggles, Nightfox Whisker, and Canon XA11, with Nightfox XB5 Infrared Torch).

A single brown long-eared bat was roosting close to the ridge in the loft during a pre-survey inspection. Very low number (<10) of fresh droppings beneath roost location.

First bat recorded was a common pipistrelle emerging from the Barn gable at 28 minutes after sunset – flying across the northern elevation of the House towards the pond to the east.

Low bat activity for the first part of the survey: High foraging activity (two common pipistrelle bats) from 50 minutes after sunset in the garden to the front of the House, and over the ponds to the east.

BR – SW of House (with SiOnyx Aurora and Nightfox XB5 Infrared Torch).

The first bat recorded was a common pipistrelle at 40 minutes after sunset – a single pass at the Barn gable, followed by constant common pipistrelle foraging in the garden to the south of the House and around the Barn – for most of the survey.

A single brown long-eared bat emerged from the south-east facing slope of the main (original) House roof at 89 minutes after sunset – flying to the south-west and around the SW-facing gable end.

3.4.4 Static Detector Results

An SM4Bat-ZC (Wildlife Acoustics) static detector was left inside the loft recording in Zero Crossing, from 30 minutes before sunset to 30 minutes after sunrise for 23 nights between 17th May and 8th June 2023.

Results are summarized in Table 3.2. Brown long-eared bats were recorded on five of the 23 recording nights. On two occasions, calls were recorded close to typical re-entry times for the species, which could indicate a roosting bat.

Table 3.2: Summary of bat calls recorded in the loft using a zero-crossing static bat detector (SM4BAT-ZC). BLE = brown long-eared.

Date (2023)	First BLE recorded	Dusk (hrs)	Last BLE recorded	Dawn (hrs)	Number of passes
17 th May	/	20:47	/	04:57	0
18 th May	02:48	20:48	04:08	04:56	23
19 th May	/	20:50	/	04:55	0
20 th May	/	20:51	/	04:53	0
21 st May	/	20:53	/	04:52	0
22 nd May	/	20:54	/	04:51	0
23 rd May	04:06	20:55	04:06	04:49	3
24 th May	23:50	20:57	01:08	04:48	5
25 th May	/	20:58	/	04:47	0
26 th May	00:59	20:59	00:59	04:46	1
27 th May	01:05	21:01	01:31	04:45	5
28 th May	/	21:02	/	04:44	0
29 th May	/	21:03	/	04:43	0
30 th May	/	21:04	/	04:42	0
31 st May	/	21:06		04:41	
1 st June	/	21:07	/	04:40	0
2 nd June	/	21:08	/	04:40	0
3 rd June	/	21:09	/	04:39	0
4 th June	/	21:10	/	04:38	0
5 th June	/	21:11	/	04:38	0
6 th June	/	21:12	/	04:37	0
7 th June	/	21:13	/	04:37	0
8 th June	/	21:14	/	04:36	0

3.5 Current Roost Status (2023)

Roosting bats were recorded inside the loft during one of the three surveys, as detailed in Table 3.3.

Table 3.3: Summary of emergence recorded during activity surveys:

Survey Date	Roosting recorded	Species and maximum numbers recorded in house
17 th May 2023	No roosting recorded	1 x Brown long-eared
9 th June 2023	No roosting recorded	
25 th June 2023	1 brown long-eared bat (internal - day-roost)	

Park Farm House is used as a day roost by an individual (or small numbers of) brown long-eared bat(s) on an occasional basis. A small common pipistrelle day-roost was also recorded in the adjacent barn – up to three bats emerged from the north-east facing gable end during the three emergence surveys.

The brown long-eared bat recorded inside the loft on the 25th June was roosting close to the ridge (Plate 3.7) and emerged from the south-east facing slope of the main roof (Plate 3.6).

A static bat detector monitoring bat-calls inside the loft for a 23-day period, confirmed the results of the emergence and re-entry surveys: The loft was used as a day roost on an occasional basis by an individual brown long-eared bat. No further species were recorded, and a higher conservation roost type was not indicated.

Plate 3.6: Emergence point on south-eastern slope of main roof – brown long-eared on 25/06/23.



Plate 3.7: Roosting brown long-eared bat (main roof) – 25th June 2023.



3.6 Limitations and Assumptions

The baseline conditions reported and assessed in this document represent those identified during a preliminary site survey, on the 15th February 2023, and three dusk emergence surveys in May and June 2023.

The weather conditions during all surveys were optimal and any bats present would have been active during these surveys. Surveys were carried out within the optimal bat survey season and covering the maternity roosting period. Surveyors achieved a good level of coverage and were confident no bats or roosting would have been missed.

Constraints encountered were within normal limits and have been taken into account when drawing conclusions and recommendations from the survey data.

4 Recommendations and Mitigation

4.1 Mitigation

A Bat Mitigation Class Licence will be required before the re-roofing starts. This will include timing constraints and precautionary working methods to avoid impact to the local population status and to individual bats.

A Schwegler 2FN bat box will be erected in a tree close to the House (Appendix C/D) to facilitate the destructive search by providing a temporary re-location site for any bats encountered during a destructive search of the tiles at the start of the re-roofing works. The box will remain permanently for a minimum of 5 years and be retained after the licensed works are completed to enhance the site for bats by providing further roosting opportunities - this will help towards Suffolk BAP targets and enhancement, as encouraged through the National Planning Policy Framework (MHCLG, 2021). If a box is occupied by bats, it becomes a legally protected roost. Damage, disturbance, or removal of a bat box used by roosting bats could be a breach of legislation. Boxes used by roosting bats can only be internally checked or moved legally by an appropriately licensed individual.

Bat boxes in trees should be 3m to 6m above ground level, facing south-east or south-west and be sited out of reach of cats. There should be unobstructed flight access enabling entry/exit for bats, but with suitable flight-lines in close proximity. The access hole is at the base so that the box is self-cleaning and does not require any internal cleaning/maintenance however, the fixings should be checked at least annually and adjusted if necessary, to ensure that the box is safely and securely attached to the tree and kept clear of encroaching vegetation, such as Ivy and branches.

The loft-void will be reinstated and remain as a bat roost on completion of the re-roofing. The roof timbers will not be changed, however, a roofing membrane (bat-safe/bitumen felt) will be used, modifying the internal roosting conditions.

On completion of re-roofing, three access points (15-20mm wide) will be created on each of the roof-slopes, including one close to the roost egress point recorded on 25.06.23 (Plate 3.7). These will be in the form of lifted tiles (lifted by 15-20mm) with a small section of the underlining removed behind the gaps to enable bats to access the loft void. Specially designed ridge-tile or bat access tiles (see Appendix D) can be used if preferred.

Brown long-eared bats are void and hole-dwellers. They readily fly within roof voids but are often found in crevices by day. Studies have shown that tree hollow-type boxes, providing a void in which bats can cluster, are favoured by brown long-eared bats. The Schwegler 2FN bat box that mimics holes in trees, the natural roosting sites, was used by this species in a research project carried out by the Vincent Wildlife Trust (McAney and Hanniffy, 2015).

Only F1-Type Bitumen/hessian felt, (or a bat-safe membrane approved by Natural England) must be used in the loft : Most modern breathable membranes have been shown to be harmful to bats, though there is now one product which has passed the snagging propensity test and NE will allow its use in roost spaces – if approved at the licensing stage.

This is deemed appropriate and proportional mitigation, providing roosting opportunities of equivalent type and value, appropriate to the species and roost types impacted.

4.1.1 Timing Constraints

The loft/roof lacked hibernation potential due to lack of stable thermal/humidity conditions caused by lack of roof lining and significant gaps under ridge tiles and between roof tiles creating very draughty internal conditions. The implementation of the BMCL should avoid the sensitive hibernation period: Although the building has very low potential to support hibernating bats, there remains a low residual risk of bats using the building during the hibernation period. Disturbance of bats in torpor has high welfare implications and can be fatal. There was no evidence of a maternity roost therefore, the licence could be implemented at any time during the active bat season (April until October inclusive). Works should be scheduled to start no earlier than the beginning of April, and no later than late-October, to minimise the risk of disturbance to bats. Weather must be appropriate for bats to be active at the time of works (temperatures of at least eight degrees Celsius over four consecutive day/nights, and minimal wind/rain).

4.1.2 Sensitive Destructive Search (Licence Implementation)

Once a Natural England licence (BMCL) has been achieved, this must be implemented before the re-roofing starts. The destructive search will be directly supervised by the Registered Consultant (RC) on the licence, who is licensed by NE to handle bats. Safe access must be provided to all parts of the roof, internally and externally.

An exclusion will be carried out if safe and appropriate, using one-way flaps which will allow bats to leave, but not return to the loft-void. Once the exclusions have been in place for five days/nights, the destructive search (tile removal) can start. The loft void will be inspected by the ecologist prior to start of the destructive search and any bats roosting (and covered by the licence) will be removed by the RC using a cloth bag and relocated to the mitigation bat box in the adjacent tree. Once the loft void is free of bats, tile removal can begin: The ridge tiles and all areas of roof tiles surrounding access points, including verges and eaves, will be sensitively removed by hand under supervision of the ecologist. Once key high-risk areas have been searched, the remaining tiles and felt can be removed.

4.1.3 Site Induction

All contractors and site staff will receive a toolbox talk by the RC prior to the start of roof works. A copy of this report and the licence/NE approval to proceed must be kept at all times on the site, along with contact details for the RC (Appendix A). The induction of all contractors should include information on bats, as detailed in this report, including:

- The legally protected status of all bat species.
- Roosting bat presence on the House and no work to start on the roof without written confirmation from the RC (following implementation of the BMCL).
- Licensable activities.
- Measures that will be used to protect bats.
- Good working practices.
- All works to stop immediately if bats, or signs of bats, are found during works on any buildings: Site Manager and RC to be consulted for advice on how to proceed.

A written record of this should be kept, confirming that contractors have received induction relating to bats; All present should sign to confirm attendance at the toolbox talk / induction (Appendix A), confirming that they are aware of the potential presence of protected species, the implications of disturbance, and how to deal with a situation if bats are encountered during works.

4.2 Derogation Tests

Proposals would result in the temporary loss and modification of a bat roost. Therefore, a licence will be required to proceed with proposals. There are three tests which Natural England address when deciding whether to grant a licence:

1) *'The activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety'*

The Farmhouse roof is currently in a poor state and re-roofing is necessary to maintain the property and prevent future leaking/damage to the historic building.

2) *'There must be no satisfactory alternative'*

Alternative options (leaving the roof as it is) were considered and found to be untenable. The Farmhouse is of an age where maintenance and improvements are necessary: Re-roofing was considered essential to basic standard of living and maintaining the property in a sustainable and energy-efficient state.

3) *'Favourable conservation status of the species must be maintained'*

The mitigation and compensation strategy detailed within this document should enable the local conservation status of the species recorded at the site to be maintained. Brown long-eared bat day-roosts are of 'low conservation significance' (single bats of common species - Mitchell-Jones, 2004 – see Table 4.1).

Natural England advocate a 'like-for-like' strategy such that any loss is mitigated by provision of habitat/roosting opportunities of equivalent type and value. Sensitive mitigation will include timing constraints and 'like-for-like' roosting opportunities provided on completion. A toolbox talk from the licensed ecologist will be given prior to start of re-roofing which will be carried out under supervision to enable the roosts to be temporarily disturbed without harming bats. Additionally, the Local Planning Authority has an obligation under the NPPF, to enhance habitat. Recommendations suggested within this report, if implemented, could enhance the site for bats post development.

Table 4.1: Conservation Status of roosts and corresponding mitigation requirements (taken from Bat Mitigation Guidelines; Mitchell-Jones 2004): Green box: This shows the roost status, given the evidence from surveys; red box show the mitigation level which has been accommodated within the proposed plans for the re-roofing project.

Low	Roost status	Mitigation/compensation requirement (depending on impact)
Conservation significance High	Feeding perches of common/rarer species	Flexibility over provision of bat-boxes, access to new buildings etc. No conditions about timing or monitoring Provision of new roost facilities where possible. Need not be exactly like-for-like, but should be suitable, based on species' requirements. Minimal timing constraints or monitoring requirements
	Individual bats of common species Small numbers of common species. Not a maternity site	
	Feeding perches of Annex II species	Timing constraints. More or less like-for-like replacement. Bats not to be left without a roost and must be given time to find the replacement. Monitoring for 2 years preferred.
	Small numbers of rarer species. Not a maternity site	
	Hibernation sites for small numbers of common/rarer species	Timing constraints. Like-for-like replacement as a minimum. No destruction of former roost until replacement completed and usage demonstrated. Monitoring for at least 2 years.
	Maternity sites of common species	
	Maternity sites of rarer species	Oppose interference with existing roosts or seek improved roost provision. Timing constraints. No destruction of former roost until replacement completed and significant usage demonstrated. Monitoring for as long as possible.
	Significant hibernation sites for rarer/rarest species or all species assemblages	
	Sites meeting SSSI guidelines	
	Maternity sites of rarest species	

Figure 4. Guidelines for proportionate mitigation. The definition of common, rare and rarest species requires regional interpretation.

4.3 Sensitive Lighting

Lighting at the property should be minimized to encourage bats to use the site, both during the construction works, and on completion (if new external lighting is proposed). Guidance from the Institute of Lighting Professionals and the Bat Conservation Trust (IPL 2018; ILE 2012, BCT 2009) has been used to inform the following considerations:

- The boundary vegetation and mature trees within and surrounding the House should be maintained as dark corridors, with no lighting directed towards these features. The mature trees and ponds are particularly sensitive due to regular use by foraging and commuting bats.
- LED luminaires should be used where possible (No UV elements: Metal halide, fluorescent sources should not be used).
- A warm white spectrum (ideally <2700Kelvin) should be used to reduce the blue light component.
- Peak wavelengths higher than 550nm should be used to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used (See ILP 2011).
- Any external security lighting should be set on motion-sensors sensitive to large moving objects only, and short (<1 minute) timers.
- All external lighting should be kept to the minimal feasible level and be directed downward: Baffles, hoods or louvres can be used to reduce light spill and direct light only to where needed.
- Lighting should be appropriately directed to avoid illuminating the garden trees, boundary vegetation, ponds, mitigation/enhancement bat boxes, and replacement roost-entry features on the re-roofed House.
- Re-roofing works should only be undertaken during daylight hours and task lighting should not be used during building works.

5 Conclusion

An occasionally-used brown long-eared bat day roost was present in the main loft of the House which will be re-roofed. Due to the low conservation status of the roost, the site can be registered under the *Bat Mitigation Class Licence* scheme: This licence must be achieved and implemented (through ecologist supervision at the start of tile-removal) before re-roofing works start.

If a protected species licence for bats is achieved and implemented, then any impact to protected bats from the proposed works should be minimal and can be mitigated within the scope of the project.

If the project is delayed until the next bat survey season (May 2024), updating surveys may be required to inform the licence application: A licence application must be accompanied by survey data from the current, or most recent, bat survey season.

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Suffolk BAP: <http://www.suffolkbis.org.uk/biodiversity/speciesandhabitats/specieslist>

UK BAP from URL <http://jncc.defra.gov.uk/page-5717>

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Appendix A: Record of Induction

Record of attendance:

Wildlife legislation/Protected Species briefing at Park Farm, Buxhall.

NAME:	COMPANY and POSITION:	Date:	Signed:

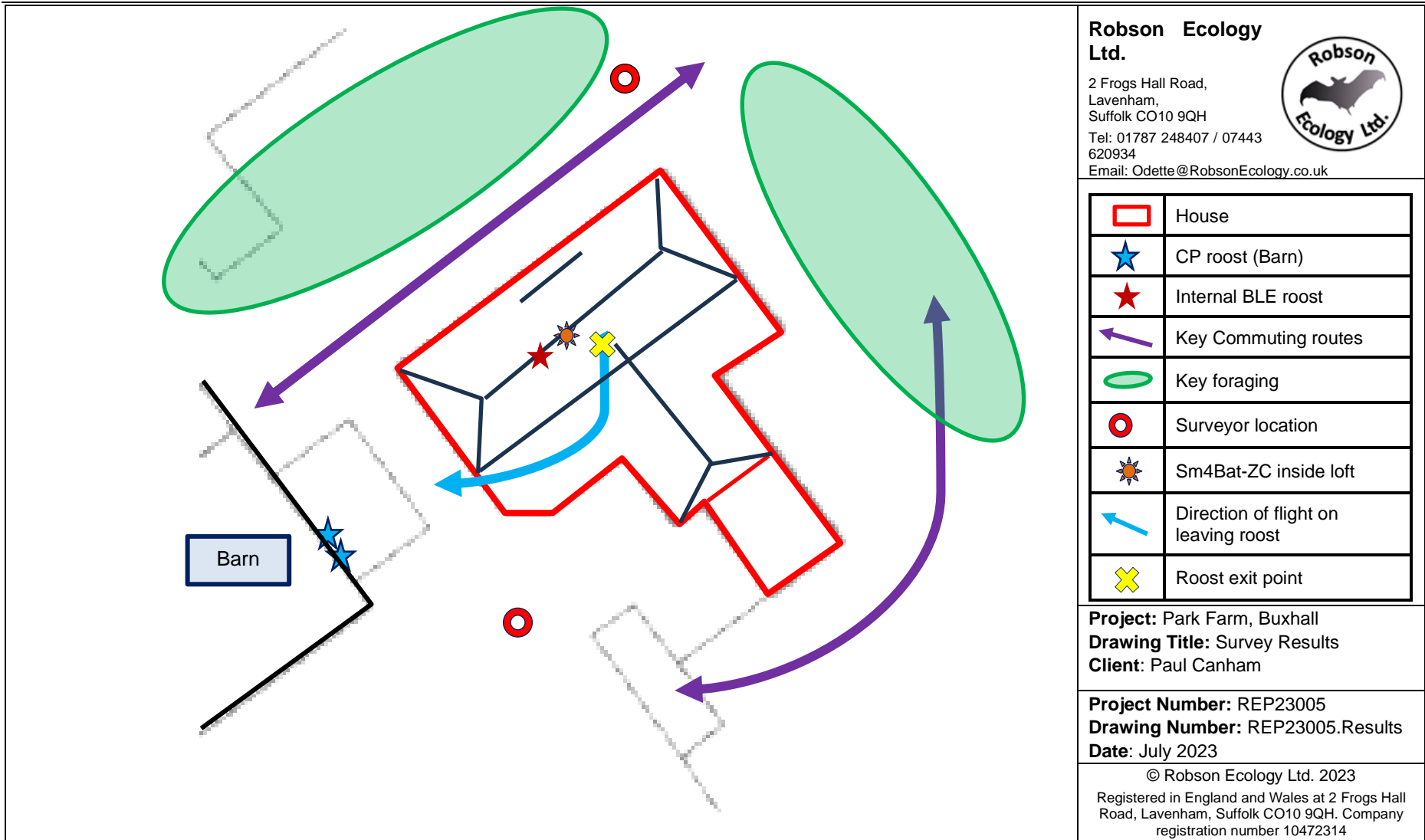
Ecology/Bat issues: If you find a bat during works, or have any other questions or concerns, please call Registered Consultant for advice on how to proceed:

Odette Robson (Licensed by Natural England to survey and handle bats under Class Licence CLS001262, bats (Level 2).


07443 620934

odette@robsonecology.co.uk

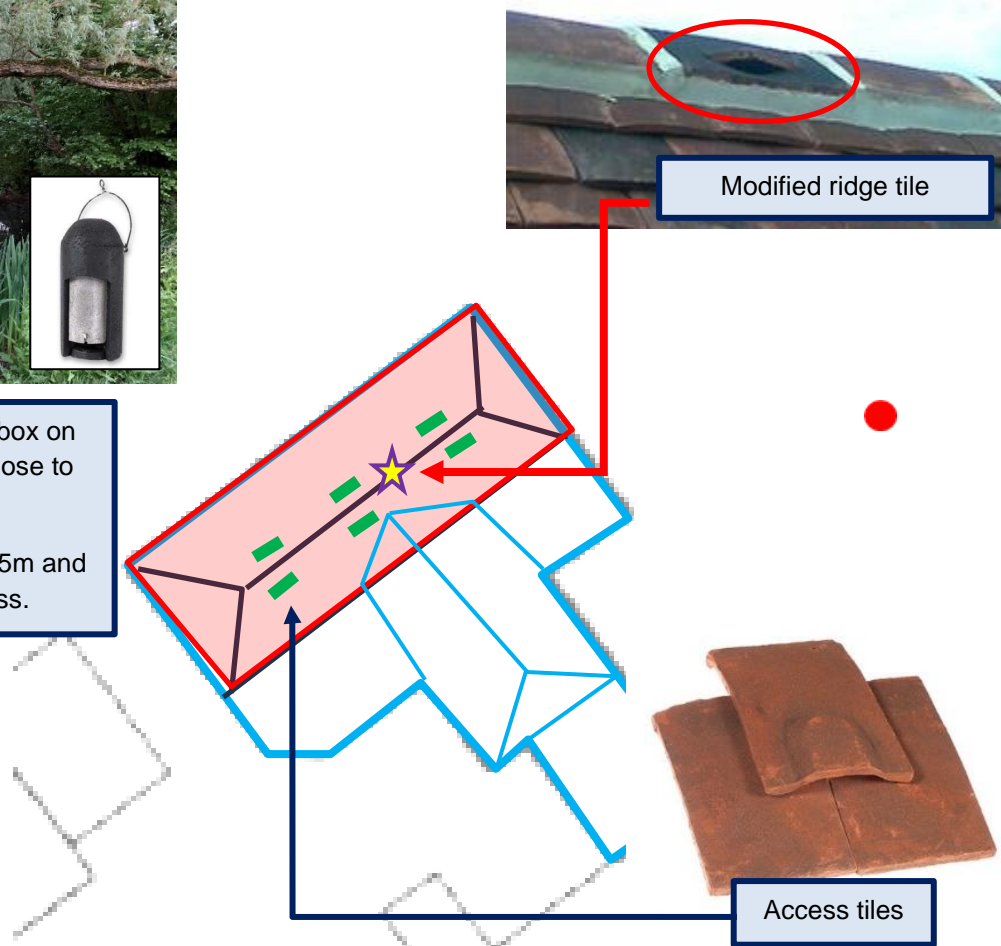
Appendix B: Bat Survey Results



Appendix C: Bat Mitigation Plan



Schwegler 2FN (x1) bat box on mature tree in garden (close to pond and House)
Facing SW or SE; above 5m and with open flight access.




Modified ridge tile

Access tiles

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●	2FN bat box (Schwegler) in tree
	Bitumen / bat safe roofing felt and supervised tile-stripping.
★	Modified ridge tile
—	Bat access tile or lifted tile with gap in felt beneath

Project: Park Farm, Buxhall
Drawing Title: Survey Results
Client: Paul Canham

Project Number: REP23005
Drawing Number: REP23005.Results
Date: July 2023

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Appendix D: Specification of Bat Box and Access Tiles

Schwegler boxes are built using wood-concrete; an exceedingly durable, rot-proof and breathable natural material designed to mimic the properties of natural nest sites.

<p>Schwegler 2FN (for brown long-eared bats)</p> <p>The 2FN bat box is for bigger bats (e.g., noctule, brown long-eared) and should be sited in trees and is best positioned at a height of between 3 to 6 metres.</p>  <p>https://www.arkwildlife.co.uk/product/schwegler-2fn-special-bat-box/ https://gardenature.co.uk/product/2fn-special-bat-box</p>	<p>Bat Access tile</p> 	<p>Modified Ridge Tile</p> 
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