



Robson Ecology Ltd.

Tel: 01787 248407 / 07443 620934

Email: Odette@RobsonEcology.co.uk



Bat Survey

of

Church Lane Cottage, Church Lane, Aldham, IP7 6NP.

Survey Commissioned by:	Mr Peter King
Project Number:	REP23007
Report issued:	15 th June 2023
Date of surveys:	Preliminary Roost Assessment: 13 th February 2023 Dusk Emergence Survey: 16 th May 2023
Project Ecologist:	Odette Robson BSc (Hons) PhD MCIEEM

Project number:	Title:	Revision:	Issued:
REP23007	Bat Survey of Church Lane Cottage, Church Lane, Aldham, IP7 6NP.	Final	15 th June 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 Mr Peter King and following the brief agreed. Robson Ecology Ltd has made every effort to meet the client's brief.

Neither Robson Ecology, nor any associated company, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or any third party's use of the report. We disclaim any responsibility to the Client and others in respect of any matters outside the scope of the above. This report is confidential to the Client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

Information supplied by the Client or any other parties and used in this report is assumed to be correct and Robson Ecology accepts no responsibility for inaccuracies in the data supplied.

Where roosting bats are recorded, a Protected Species Licence may be required: Natural England (the licensing authority in England) require data from the most recent survey season. Where a bat roost is not recorded, data will be valid for a maximum of 18 months from survey date.

Reports must not be submitted to the Local Planning Authority for a planning application until outstanding invoices have been settled.

© Robson Ecology Ltd. 2023 (Copyright of this report remains with Robson Ecology Ltd: Content must not be reproduced, in whole or part, without written consent)

1 Summary

Site:	Church Lane Cottage, Church Lane, Aldham, IP7 6NP
Grid Reference	TM 03775 44698
Report Commissioned by:	Mr Peter King
Date of Surveys:	Preliminary Roost Assessment: 13 th February 2023 Dusk Emergence Survey: 16 th May 2023

	Impacts	Recommendations
Bats	Construction Phase Impact (roosting bats).	<p>A preliminary roost assessment identified low potential for roosting bats to use the roof of the lean-to, single-storey extensions of the Cottage. There was no evidence of bats having used other parts of the property which would be impacted by proposed works.</p> <p>In line with guidelines for '<i>low roost potential</i>', a single emergence survey of the impacted parts of the property was carried out on May 16th 2023: No roosting bats were recorded and overall activity at the site was low, with sporadic common and soprano pipistrelle foraging passes.</p> <p>No further surveys or licenses are required. There are no constraints (with regards bats) to proposed works.</p>
	Operational Phase Impact (commuting and foraging bats).	<p>Negligible impact to commuting or foraging bats: No flight lines will be interrupted by proposed works. No material changes post-completion (minor extensions and addition of a new garden building).</p> <p><u>Precautions: A sensitive external lighting scheme (Appendix D) should be implemented to retain dark corridors around the enhancement boxes and garden boundary.</u></p>
Birds	Nesting bird potential.	<p>Disused bird nesting material was present in the main Cottage loft which will not be impacted by proposals. Birds could nest in the lean-to extension roof crevices which will be demolished.</p> <p>Works should be carried out outside the nesting bird season (March to August inclusive) or following a survey for nesting birds carried out immediately before the works start. If active nests are recorded, there will be a delay in that part of the site (including an exclusion zone surrounding the nest) until all young birds have fledged and left the area.</p>
Additional enhancement	A Biodiversity Enhancement Plan is provided to further enhance the property by locating bird and bat boxes on the renovated Cottage and garden trees. This would enhance the site for wildlife, in line with planning objectives for positive gains for biodiversity.	

Contents

1	Summary	3
2	Introduction	5
2.1	Background.....	5
2.2	Legislation	5
2.3	Aims and Objectives	5
2.4	Dusk Emergence Survey Methods.....	6
2.5	Site Context and Proposals.....	6
2.6	Desk Study Results.....	7
2.6.1	Status of bats in Suffolk and the UK.....	7
2.6.2	Suffolk Biodiversity Information Service - Datasearch	7
2.7	Bat activity survey	8
2.7.1	Dusk Survey 16 th May 2022	8
2.8	Nesting Birds	8
2.9	Constraints, Limitations and Assumptions.....	8
3	Recommendations and Precautionary Measures	9
3.1	Roosting Bats	9
3.2	Nesting Birds	9
3.3	Foraging/Commuting Bats - Lighting Precautions	9
3.3.1	Breathable roofing membranes.....	10
4	Biodiversity Enhancement Recommendations	10
4.1	Bat Boxes	10
4.2	Bird Boxes	10
4.2.1	Open-fronted Bird Box	10
4.2.2	House Sparrow Terraces	10
4.3	Ongoing Monitoring and Maintenance - Post-completion	10
5	Conclusions	11
6	References	12

Appendix A: Bat Survey Results.

Appendix B: Bat Box Specification.

Appendix C: Surveyor/Camera Locations and Bat Activity

Appendix D: Biodiversity Enhancement Plan and Lighting Strategy

2 Introduction

2.1 Background

A Preliminary Roost Assessment (PRA) of Church Lane Cottage carried out on 13th February 2023 identified features which could be used by roosting bats. The Cottage had low potential to support roosting bats in the cavity between roof lining and tiles on the south-eastern and north-western lean-to extensions where there were damaged and missing tiles. There was no evidence of bats having used the main Cottage loft-space, though there were potential access points (around external chimney).

The property has an increased risk of being used by bats due to being located in an area of good foraging habitat; approximately 400m to the north-west of the Church, Hall, farm buildings, associated large water-bodies (lake/ ponds), and within an area of high-quality foraging habitat (trees and small woodland - 1.3km to the north-west of RSPB Wolves Wood).

Slipped and missing tiles on two lean-to sections of the Cottage which are scheduled for demolition/rebuild had low potential to support roosting bats and consequently, a single emergence (nocturnal) survey was required to comply with guidelines. The survey was carried out on 16th May 2023, to determine the status of roosting bats at the site and to inform a Listed Building/Planning Application to renovate the currently unoccupied property.

2.2 Legislation

Bats are strictly protected under European and UK legislation (Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, and the Wildlife and Countryside Act, 1981). Four UK species are also listed under Annex II of the Habitats Directive.

Seven species are *Species of Principal Importance in England* (SPIE) - formerly UK Biodiversity Action Plan Priority (BAP): 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 bechsteinii*.

Bats are a priority species under Section 41 of the NERC Act (2000) which is a consideration under the National Planning Policy Framework - NPPF (MHCLG, 2021), placing responsibility on Local Planning Authorities to aim to conserve and enhance biodiversity and to encourage biodiversity in and around developments.

2.3 Aims and Objectives

All UK species of bats are protected under Regulation 41 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to deliberately or recklessly capture, injure, disturb or kill a bat; damage or destroy a breeding site or resting place used by a bat; or obstruct access to any structure or place used for shelter or protection.

The survey was therefore required to:

- Identify the presence, or potential presence, of any bats or birds;
- assess the potential impact of the proposals on protected species within the zone of impact;

- make recommendations for further surveys to inform the planning application and/or a protected species licence application (if required);
- detail any precautions required to protect bats and birds from impact, and/or mitigation or compensation, where necessary.

2.4 Dusk Emergence Survey Methods

A dusk re-entry survey of the property followed standard techniques and guidance, as recommended by Natural England and the *Bat Conservation Trust: Bat Surveys for Professional Ecologists: Best Practice Guidelines* (Collins, 2016).

The survey was 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).

Equipment used included full spectrum Echo Meter Touch bat detector/recorder, Sionyx night-vision camera, Nightfox Whisker, Nightfox Red, IR torches (Firefox XB5), and a FlirE4 thermal imaging camera. Direct observation was also used to record bat activity on the site.

2.5 Site Context and Proposals

The site comprises a detached residential property, detached garage, and a mature, maintained garden, mainly laid to lawn with planted shrubs and trees.

A planning application will be submitted to renovate and restore the property, including re-building the lean-to extensions (on the south-eastern and south-western elevations) largely within the footprint of the existing building. The existing garage would not be impacted and does not form part of the application. A new Garden Room is proposed on the south-western edge of the garden.

Figure 2.1: Location of the Cottage and site plan

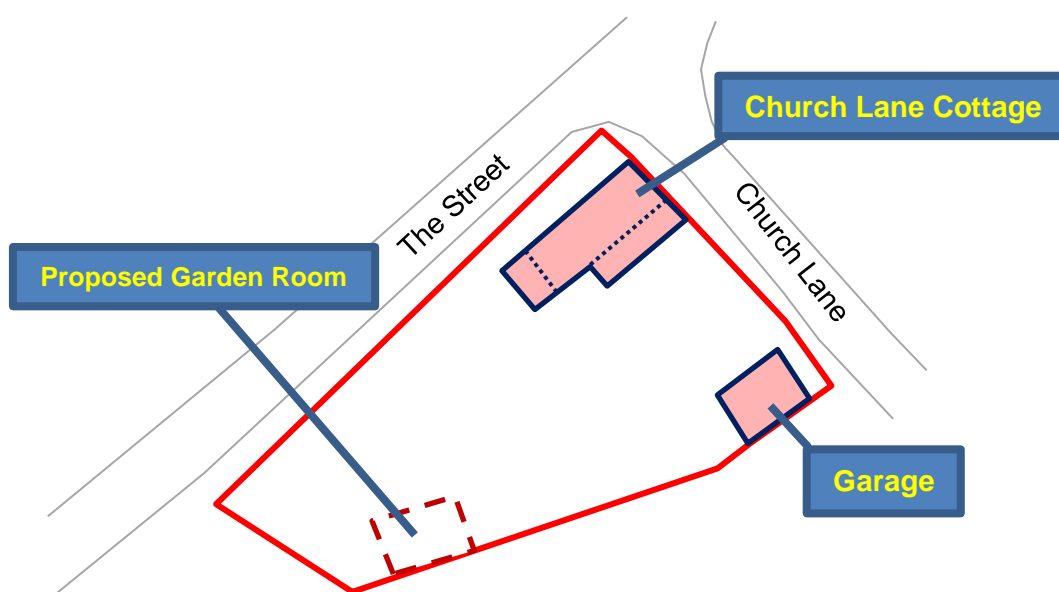


Figure 2.2: Impacted areas and roosting potential



Bat Survey Results

2.6 Desk Study Results

2.6.1 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.

Two bat species were recorded during the surveys: common pipistrelle *Pipistrellus pipistrellus*, and soprano pipistrelle. 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).

2.6.2 Suffolk Biodiversity Information Service - Datasearch

Suffolk Biodiversity Information Service (SBIS) provided results of a 2km radius search for bat records on 14th February 2023. Seven bat records were from within 2km of Church Lane Cottage:

- Four common pipistrelle records (2002 – 2018): Nearest 1.6km SW.
- Two soprano pipistrelle records (2004 and 2011): Wolves Wood – over 1.5km SE.
- A single *Nyctalus/Eptesicus* (record not species-specific): 2005. Location not specific (though over 1.5km from the site – likely Wolves Wood).

The nearest European Protected Species licence (MAGIC, 2023) was granted in 2020 to destroy a brown long-eared bat resting place at a site in the town of Hadleigh, approximately 2.3km to the south-west of Church Lane Cottage.

2.7 Bat activity survey

The dusk emergence survey was conducted in good weather conditions (mild, dry, little wind). The survey started 15 minutes before sunset and finished 1.75 minutes after sunset.

Table 3.1: Weather conditions and timing of survey

Date	Survey Type	Sunset Time	Temp.	Wind	Cloud cover
16 th May 2023	Dusk Survey (20:30 – 22:30)	Sunset: 20:46	10 - 9°C	Beaufort 1-2	10-20%

The level of general foraging and commuting activity was low, with most activity being single passes from common and soprano pipistrelles commuting along the boundary and no prolonged foraging activity. No roosting bats were recorded in the property. An overview of the survey is given below:

2.7.1 Dusk Survey 16th May 2022

The lean-to elements of the Cottage were surveyed by a single surveyor (to the south of the building) and three infra-red cameras (covering the south-eastern and south-western elevations). There was sporadic common pipistrelle and soprano pipistrelle activity throughout the survey – mainly single passes along the south-eastern site boundary which is marked by a close-board fence, with a mature tree-line in the adjacent garden beyond the fence. There was no prolonged foraging activity within the garden of the property. The first bat recorded was a common pipistrelle commuting pass at 44 minutes after sunrise, which is well beyond the typical emergence time for this species. No roosting was recorded in the Cottage.

2.8 Nesting Birds

Nesting birds and their eggs are protected under the Wildlife & Countryside Act 1981.

There were disused nests inside the loft space of the Cottage which will not be impacted under current proposals. No trees or vegetation will be removed to facilitate the development. There is a low risk of nesting birds using the lean-to extensions and these should be assessed for nesting if demolition is carried out during the nesting season. This will include works to repair the chimney (re-attaching to the gable end) – which could impact birds accessing the loft void.

2.9 Constraints, Limitations and Assumptions

The baseline conditions reported and assessed in this document represent those identified during a single daytime survey, on the 13th of February 2023, and a dusk emergence survey on 16th May 2023.

The emergence survey was carried out at the beginning of the survey season, however, bats were active throughout the survey, and the weather and season suitable.

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

3 Recommendations and Precautionary Measures

3.1 Roosting Bats

A single activity survey for bats was completed in May and there was no evidence of roosting bats in the Cottage, or immediate surrounding area. No further surveys are recommended. Demolition contractors should be made aware of the potential presence of protected species and carry out works with due diligence, contacting a suitably qualified ecologist for advice if any evidence of protected species is found during works.

3.2 Nesting Birds

A nesting bird survey of the impacted parts of the Cottage should be carried out immediately prior to start of works (on lean-to demolition, or chimney repair), if this takes place within the nesting bird season, to check for active bird nests, and avoid infringing legislation which protects all breeding birds (WCA 1981). If nesting birds are recorded, then works to that part of the site (including an exclusion zone – the extent of which would be advised by the project ecologist), would be paused until all young birds had fledged and left the nesting area.

If works start outside the main nesting period (end of August to end of February), then no pre-start survey is necessary, if contractors adopt a precautionary approach.

3.3 Foraging/Commuting Bats - Lighting Precautions

Lighting at the site should be minimized to encourage bats to use the site, both during the construction works, and on completion. 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 garden boundary to the east (tree line beyond closeboard fence) should be maintained as a dark corridor. No lighting should be directed towards this boundary, or the mature retained tree on the north-western (road-side) boundary.
- LED luminaires should be used where possible (No UV elements: Metal halide, fluorescent sources should not be used).
- A warm white spectrum (ideally <2700 Kelvin) 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.
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered (where this is feasible and meets safety standards).
- Column heights should be as low as functionally feasible to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used (See ILP 2011).
- Luminaires should be mounted on the horizontal to avoid upward tilt.
- 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 it only to where needed.

- Lighting should be appropriately directed to avoid illuminating the retained trees, boundary vegetation, and enhancement habitat boxes.
- Construction works should only be undertaken during daylight hours and task lighting should not be used during the construction phase of the development.

3.3.1 Breathable roofing membranes

Breathable roofing membranes should only be used in parts of the roof which bats cannot access: If there are gaps (over 1cm), which bats can access, then a bat-safe membrane should be used: This could be bitumen 1F felt that has a non-woven, short fibre construction or a 'bat-safe' breathable membrane. If a breathable, non-bitumen coated roofing membrane is used, this must pass a snagging propensity test to ensure that the material can stand the repeated snagging actions of roosting bats. Further clarification on this is detailed on the Bat Conservation Trust website <https://www.bats.org.uk/our-work/buildings-planning-and-development/non-bitumen-coated-roofing-membranes>

4 Biodiversity Enhancement Recommendations

These recommendations will enhance the value of the site generally for bats and birds and promote Suffolk Biodiversity Action Plan (BAP) targets, as encouraged through the National Planning Policy Framework (MHCLG, 2021).

4.1 Bat Boxes

A Beaumaris bat box (Appendix B – or similar and approved) should be erected high on the south-western gable end, close to the apex on the southern side of the chimney (location shown in Appendix D).

Woodstone boxes are durable and long-lasting. The access hole is at the base so that the boxes are self-cleaning and do not require any maintenance. Bat boxes should be left in perpetuity, and only checked or moved by individuals licenced by Natural England to survey and handle bats.

4.2 Bird Boxes

4.2.1 Open-fronted Bird Box

Song thrushes and spotted flycatchers use open-fronted nest-boxes: Schwegler 2H open-fronted nest boxes, or other specification to approved BTO-standards, will be installed in a retained mature tree on the north-western boundary of the site, to provide further nesting opportunities.

4.2.2 House Sparrow Terraces

The BoCC red-listed house sparrow has been recorded locally and will readily use nesting boxes. Sparrow terraces, such as the Schwegler 1SP (see Appendix B), are suitable for buildings. A house sparrow terrace will be installed as high as possible on the south-western elevation of the new Garden Room, where there is close access to the vegetated garden boundary.

4.3 Ongoing Monitoring and Maintenance - Post-completion

Bat and bird box fixings must be inspected regularly to ensure that they are safe, and the boxes securely fixed to the tree or building. Maintenance/cleaning is not necessary for bat

boxes. Only a bat-licensed ecologist can legally open/move a bat-roost box. Bird boxes should be cleaned out annually with boiling water, outside the nesting season and following RSPB guidance.

5 Conclusions

No roosting bats were recorded on the Cottage lean-to sections which would be impacted by proposed works.

The weather conditions during the emergence survey were optimal and bats were active throughout the survey. Surveys were carried out early in the peak survey season.

No further surveys or licences are required, however, precautions to avoid impact to nesting birds should be implemented at the start of the site works.

F1-Type bitumen/hessian-backed felt should be used in areas of the roof which can be accessed by bats (where there are gaps over 1cm wide under tiles/eaves), as most modern breathable membranes have been shown to be harmful to bats. Alternatively, there is currently one breathable membrane brand which has passed a snagging propensity test and can be licensed for use in roosts.

A sensitive lighting scheme will maintain the foraging and commuting corridors around the garden/property (Section 3.3/Appendix D), and the site could be further enhanced by installing bat and bird boxes on retained trees and the renovated Cottage, as detailed in Section 4 and Appendix D.

6 References

Bat Conservation Trust: Artificial Lighting and Wildlife. Interim guidance: Recommendations to help minimize the impact of artificial lighting. June 2014.

Bat Conservation Trust. (2009). Bats and lighting in the UK- bats and the built environment series www.bats.org.uk Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Best Practice Guidelines (3rd edn). The Bat Conservation trust, London. ISBN – 13 978-1-872745-96-1.

Bat Conservation Trust, 2021. The National Bat Monitoring Programme Annual Report 2021. Bat Conservation Trust, London. Available at: <https://cdn.bats.org.uk/uploads/pdf/Our%20Work/NBMP/National-Bat-Monitoring-Programme-Annual-Report-2021.pdf?v=1655151480>

Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Best Practice Guidelines (3rd edn). The Bat Conservation trust, London. ISBN – 13 978-1-872745-96-1.

Conservation of Habitats and Species Regulations 2017. HMSO, London.

Bullion, S. (2009). The Mammals of Suffolk.

ILP (2018). Institute of Lighting Professionals. Bats and artificial lighting in the UK Bats and the Built Environment series. Guidance Note 08/18.

IPE (2011) Institution of Lighting Engineers Guidance Notes for the Reduction of Obstructive Light

MHCLG (2021). National Planning Policy Framework. Available to download online from the Government website <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

Mitchell-Jones, A. J. (2004). Bat mitigation guidelines.

Natural Environment and Rural Communities Act (NERC Act) (2006) HMSO London.

Stone, E.L., Jones, G., Harris, S. (2012). Conserving energy at a cost to biodiversity? Impacts of LED lighting on bats. Glob. Change Biol. 18, 2458–2465

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

Suffolk Biodiversity Information Service (2023). Data-search for bat species within a 2km radius of Church Lane Cottage, Aldham TM 03775 44698. Provided on 14th February 2023.

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

Wildlife and Countryside Act (1981). HMSO, London

Appendix A: Bat Activity Results

Notes	
(HNS = heard but not seen; SP = Soprano pipistrelle; CP = Common pipistrelle.)	
Time	Dusk Survey: 16th May 2023 (Odette Robson) – south of Cottage
21:30	1 CP single commuting pass along fence line boundary to the south-east
21:40	1 SP single pass – HNS
22:00	1 SP foraging pass to the NE on SE garden boundary.
22:04	1 CP forging pass along tree-line to east/south
22:11	1 CP – brief foraging in adjacent garden to south-east

Appendix B: Specification of Bat and Bird Boxes

Beaumaris Bat Box

The box is made from durable WoodStone and has a lifetime warranty. Suitable for crevice roosting bats (e.g., pipistrelles) with a black exterior to absorb heat from the sun. WoodStone is strong and has good thermal insulation, reducing temperature fluctuations inside the box.



Schwegler 2H Open-fronted Bird Box

Should always be installed on the outside walls of houses, barns, garden sheds, etc. It is designed to be hung so that the entrance is to one side (at an angle of 90° to the wall). The front panel can be removed for cleaning. Install 2-4m high.

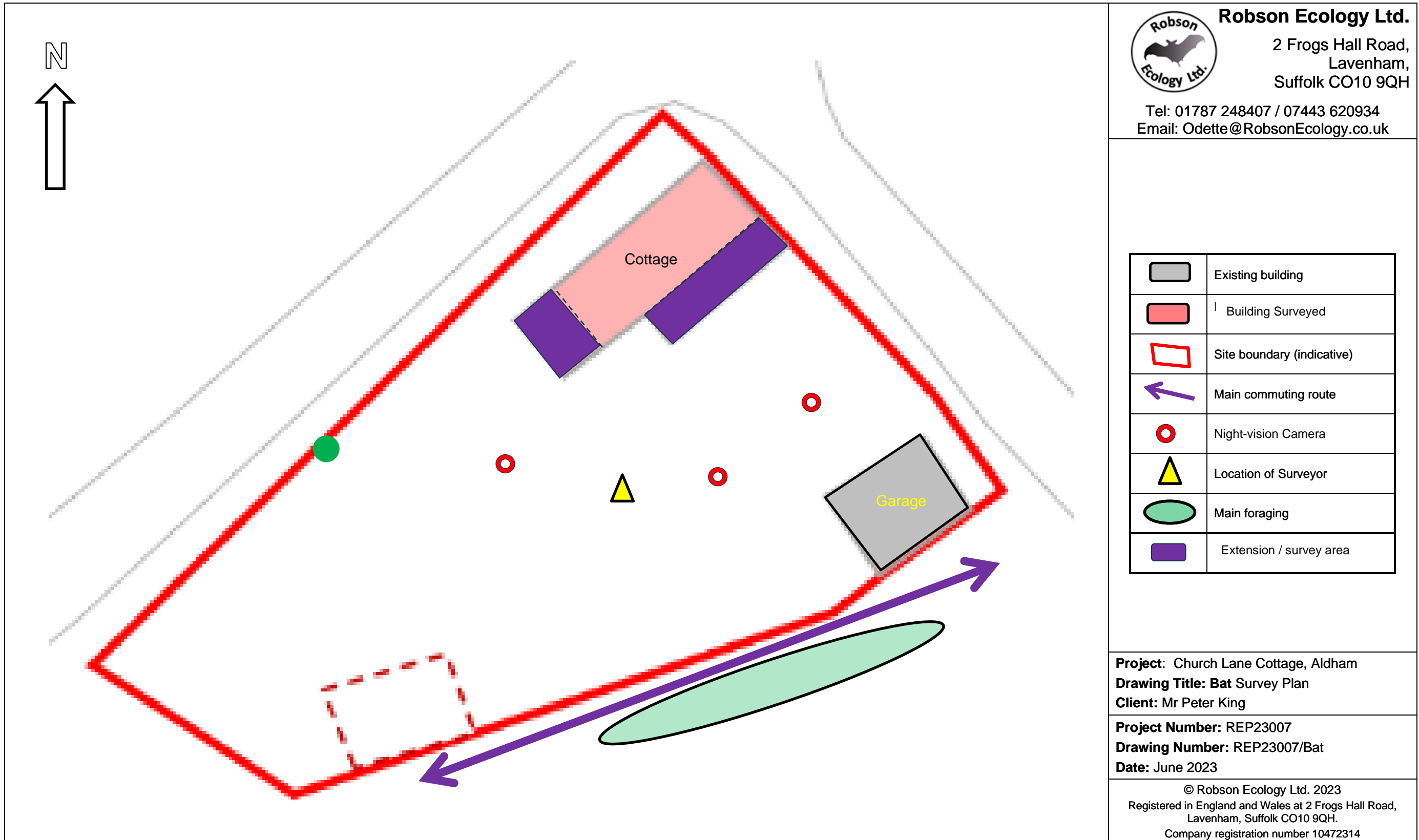


Schwegler 1SP Sparrow Terrace

This terrace provides nesting opportunities for three families. Made of wood-concrete mix, this terrace is durable, breathable and will last many decades. The terrace can be fixed on to the surface of a suitable wall or incorporated into the wall. Place the terrace two metres or more above the ground or install directly into the wall. Cleaning is advisable but not necessary. The front panel can be removed by turning the screw hook.



Appendix C: Surveyor/Camera Locations and Bat Activity



Appendix D: Biodiversity Enhancement Plan and Lighting Strategy

