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Preliminary Bat Roost Assessment

of

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

Survey Commissioned by:	Paul Pentney on behalf of Mr Peter King
Project Number:	REP23007
Report issued:	12 th March 2023
Date of survey:	13 th February 2023
Surveyor:	Odette Robson BSc (Hons) PhD MCIEEM

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REP23007	Bat Roost Assessment of Church Lane Cottage, Church Lane, Aldham, IP7 6NP.	Final	12 th March 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 Pentney on behalf of Mr Peter King, and following the brief agreed. Robson Ecology Ltd has made every effort to meet the client's brief.

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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.

The Report is not to be relied upon more than 12 months after its original date.

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Summary

Site:	Church Lane Cottage, Church Lane, Aldham, IP7 6NP
Grid Reference:	TM 03775 44698
Report Commissioned by:	Mr Paul Pentney on behalf of Mr Peter King
Date of Survey:	13 th February 2023

Activity	Impacts	Recommendations
Roosting bats	Re-roofing and re-building lean-to extensions.	<p>No evidence of bats having used the Cottage roof void.</p> <p>Potential crevice-roosting opportunities were available under lifted and damaged roof tiles.</p> <p>Due to potential roosting opportunities which could not be adequately assessed outside the active bat season, further surveys are necessary to inform any mitigation or licensing requirements. A single nocturnal survey following best practice guidelines (Collins 2016) is necessary to ascertain if bats are roosting in the parts of the Cottage roof that would be impacted by renovation works. A dusk/emergence or dawn/re-entry survey between May and August in the first instance, with additional surveys required if roosting bats are recorded.</p>
Nesting birds		<p>Disused bird nesting material was present in the main Cottage loft which will not be impacted by proposals.</p> <p>No evidence of bird-nesting in the lean-to extensions which will be rebuilt however, access for birds was available and a precautionary approach should be implemented by carrying out a pre-start nesting bird survey if the works start during the bird-nesting season (March to August inclusive).</p>
Mitigation and licensing requirements	Roost disturbance	<p>If bats are recorded using the property, a mitigation strategy can be designed once the species, location, and status of the roost is known. This is likely to involve timings constraints for roof-tile removal, and mitigation on a 'like-for-like' basis by re-creating crevice-roosting features on completion. The roosts can be recreated <i>in situ</i> (replacing the gaps under tiles), or by addition of crevice-roosting bat boxes to the property.</p> <p>If disturbance and modification of roosts is unavoidable, then a licence would be needed to proceed.</p>
External lighting	Foraging and commuting bats	Any new external lighting should be sensitive to bats and other nocturnal animals. Dark corridors around the garden boundaries should be maintained at the current level, to enable bats to commute around the property.
Additional enhancement	<p>The addition of bat and bird boxes in trees or on buildings would enhance the site on completion and comply with local and national policy for positive gains for wildlife/biodiversity through the planning system.</p> <p>Specific advice on number and locations of bat boxes (to correspond with species recorded) can be provided following Phase 2 bat survey(s).</p>	

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1 Introduction

1.1 Background

Robson Ecology Ltd carried out a Preliminary Bat Roost Assessment of a residential property at Church Lane Cottage, Church Lane, Aldham, IP7 6NP. The report is required to inform Listed Building Consent and a Planning Application to renovate the currently unoccupied property and construct a separate Garden Room.

1.2 Aims and Objectives

All UK species of bats are protected under the Wildlife and Countryside Act 1981 and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. The surveys were 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 Survey Methodology

2.1 Site Survey

The site survey was undertaken by Odette Robson BSc (Hons) PhD MCIEEM, a full member of the Chartered Institute of Ecology & Environmental Management (MCIEEM), subject to the CIEEM Professional Code of Conduct and licensed by Natural England to survey for bats (WML-CL18; Level 2).

During the survey, on 13th February 2023, the temperature was 8°C; the wind at Beaufort Scale 3, 30% cloud cover and good visibility.

2.1.1 Methodology

The survey was undertaken in accordance with *Bat Surveys for Professional Ecologists: Best Practice Guidelines* (Collins, 2016). The Cottage was assessed externally and internally, using binoculars, high-powered torch, ladder and a borescope inspection camera (Ridgid CA300) to enable investigation of deeper cavities, where necessary. Accessible cracks, holes, crevices and other potential bat roosting features were thoroughly inspected for bats themselves, or for signs (e.g., staining, droppings, scratch marks) of past bat presence.

Aerial photographs, available maps and survey of the area outside the immediate site boundary (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 works to bats using the surrounding area (foraging and/or commuting) was also assessed.

2.2 Site Context and Proposals

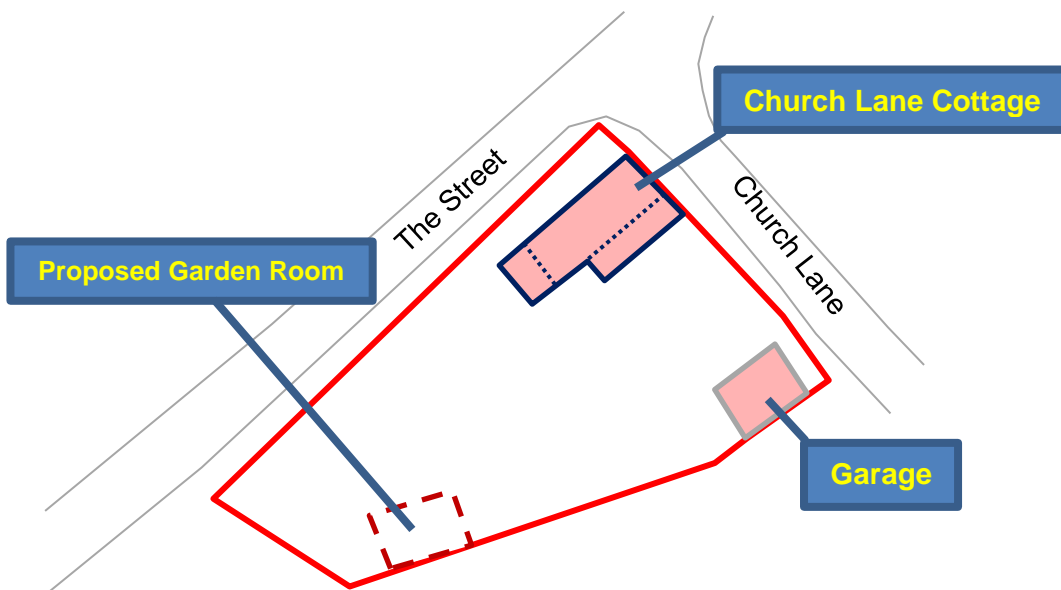
Church Lane Cottage is a detached Grade II listed property in the village of Aldham, approximately 1km to the north-east of the edge of Hadleigh, Suffolk.

The Cottage lies adjacent to roads to the north-west (The Street) and north-east (Church Lane). Garden, laid mainly to lawn, surrounds the Cottage from the south-east to south-west (Figure 2.1).

The village church is approximately 400m to the south-east, close to Aldham Hall and associated small lakes and ponds. The wider countryside is predominantly arable farmland with scattered pockets of woodland and hedged field boundaries.

An application for planning permission will be submitted to renovate and restore the property by re-building the lean-to extensions (on the south-eastern and north-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 would be constructed on the south-western edge of the garden.

Figure 2.1: Location of the Cottage and site context.



3 Results

3.1 Desk Study

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.

The property lies within a Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ). Consultation with Natural England is required for various infrastructure projects, and for residential planning applications of 50 or more units. Therefore, consultation will not be necessary for the proposed small-scale renovation works.

Hintlesham Woods SSSI is the only statutory designated wildlife site within 2km of Church Lane Cottage. The site includes Wolves Wood RSPB Reserve which lies 1.3km to the south-east (MAGIC, 2023).

The property lies within the Zone of Influence of a European designated site: The Stour and Orwell Estuary Ramsar and Special Protection Area (SPA) lies approximately 12.5km to the south-east and is designated primarily for overwintering and breeding bird assemblages.

Suffolk Biodiversity Information Service (SBIS, 2023) provided seven bat records 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).

3.2 Site Survey

Table 3.1 details parts of the property of relevance to bats roosting and bird nesting.

Table 3.1: Building assessment (Photos: O. Robson, 13.02.23).

Church Lane Cottage	
<p>Cottage - External</p> <p>Well-sealed render with no cracks or damage on upper south-western gable-end and walls on the south-eastern, north-eastern and north-western elevations.</p> <p>Weather-boarding on the north-western upper gable was well-sealed with no warped or lifted boards.</p> <p>Peg-piled main roof had numerous uneven tiles and occasional lifted tiles with gaps beneath. Internal chimney was well-pointed and intact. External chimney to the south-western gable was coming away from the wall and a gap was evident which could provide access for bats into the roof void. Open eaves (no boxing). Both gable apexes appeared sealed. Roof-tile ends at the gables were exposed (not covered with barge-boards, but well-sealed with intact render).</p> <p>Chimney apron was tiled and appeared largely intact: A tile below the chimney apron on the south-eastern slope was lifted (circled below). All windows well-sealed into their surrounds and no damaged, decaying woodwork.</p>	
 <p>Lifted tile: SE slope of main roof.</p>	
<p>Cottage - Internal roof-void: The main loft-void was approximately 2m high. Lagging insulation was intact but beginning to degrade. Historic roof timbers were largely intact and sound: No mortise joints but occasional minor crevices in woodwork. The internal bitumen felt roof lining was mostly intact with occasional torn sections exposing tiles. Cobwebbed beneath the ridge-beam. The timbers were cluttered with collar tie-beams and struts which could hinder bat-flight internally.</p> <p>No bat droppings were recorded. Old and degraded bird-nesting material was present but no evidence of recent nesting.</p>	

Lean-to - SW Elevation

Single-storey extension with well-sealed painted brickwork. Peg-tiled mono-pitched roof was mostly sealed and sparsely moss-covered. Damaged area of slipped and missing tiles which could provide access to bats to the cavity between roofing felt and tiles.



Lean-to - SE Elevation

Peg-tiled roof with occasional lifted and damaged tiles, though mostly intact. A cracked tile close to the wall-join (circled below) provided potential bat-access to the crevice between tiles and roofing felt beneath.



Garden:

The location of the proposed Garden Room was paving slabs and sparse ruderal vegetation.

No protected species issues in relation to construction of the proposed structure.



3.3 Suitability of Cottage for Roosting Bats

An assessment was made under the criteria detailed in current Best Practice Guidelines (Collins, 2016). The results detailed below show the assessment of potential roost features, with the level of further survey required to ascertain the roost status, based on level of risk.

Table 3.2: Summary of bat roosting potential.

Structure	Roosting habitat suitability	Further survey requirements to ascertain roosting status
Main Cottage	Negligible roosting potential	No further survey requirements.
Single-storey lean-to extension (SW elevation)	Low roosting potential: minor crevices under roof tiles.	Single survey*: Dusk emergence or dawn re-entry survey between May and August (inclusive).
Single-storey lean-to extension (SE elevation)	Low roosting potential: minor crevices under roof tiles.	
<p>*Note - if roosting bats are confirmed during the survey, the roost/building will need an additional two surveys to characterize the roost for the planning application and for a protected species licence-application.</p>		

3.4 Foraging and Commuting Bats

It is likely that foraging and commuting bats use the trees and garden habitats surrounding Church Lane Cottage due to the high-quality foraging habitat within and surrounding the garden (mature trees and hedges) and the wider landscape (tree-lined Church Lane, water bodies, Church, and woodland). There will be no loss of foraging habitat as a result of the proposed renovation works, and commuting bats will not be impacted if there are no changes to lighting conditions. Any new external lighting should follow the precautions detailed in Section 4.1.3. Task-lighting should not be used during the construction phase, and no building works between sunset to sunrise.

3.5 Nesting Birds

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

Timing of works, or a pre-start precautionary nesting bird survey would ensure compliance with legal obligations with regards nesting birds: The main breeding season is between March and August inclusive. Should any works be proposed during the bird breeding season, a nesting bird survey should be undertaken to confirm presence/absence of nests immediately prior to works being undertaken. If nests are identified, there may be a delay to the start of the work until all young birds have fledged.

Between September and February (inclusive), a nesting bird survey would not be required if standard due-diligence and a cautious approach is adopted by contractors.

3.6 Limitations and Assumptions

The baseline conditions reported and assessed in this document represent those identified during a single site survey, on the 13th February 2023, within the bat hibernation season. A reasonable assessment of habitats can be made during a single survey however, seasonal variations are not observed. The survey provides an overview of the likelihood of presence of roosting bats, limited by the transient use of roosting opportunities and the short-lived nature of some signs (such as droppings). Where no evidence was found, this does not mean that bats do not use the building at some stage of the life-cycle. Further surveys are only recommended if there is a significant likelihood that bats may be present and impacted by the proposals, based on the suitability of the building, surrounding habitat, and any direct evidence.

All areas of the site were accessible on the day of the survey. The main roof void of the Cottage was fully accessible. The smaller voids within the roofs of the single-storey lean-to extensions could not be accessed (no inspection-hatches), so these were surveyed externally, from ground-level only.

Constraints were within normal limits and have been taken into consideration on drawing conclusions and recommendations from the survey.

4 Recommendations

4.1 Key Recommendations and Precautions

4.1.1 Phase 2 Surveys for Bats

Church Lane Cottage is situated within an area of high-quality bat foraging habitat, and there is potential for bats to use the lean-to extensions which will be demolished and re-built. These potential roosts can only be assessed through emergence/re-entry surveys during the active bat season.

Due to the low potential risk (no bat droppings found), a single further survey is recommended (Table 3.2) in the first instance, to inform any additional survey requirements. If no bats are recorded roosting the proposed works can proceed under precautionary working methods; if bats are recorded roosting, a further two surveys (emergence and/or re-entry surveys) should be carried out to inform mitigation design, and a licence application to Natural England which would be needed to proceed with any works that would directly, or indirectly, impact or disturb a roost.

4.1.2 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>

4.1.3 Sensitive Lighting

Lighting at the site should be minimized to encourage bats to use the site, both during the building 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 boundaries and mature trees should be maintained as dark corridors. No lighting should be directed towards the hedges/trees at the garden boundary.
- 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).
- 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 hedges and tree-lines at the site boundaries and any mitigation/enhancement bat boxes.
- Construction works should only be undertaken during daylight hours (no works from sunset to sunrise) and task lighting should not be used during building works.

5 Biodiversity Enhancement

These additional recommendations would enhance the value of the property for wildlife, which is a requirement of the National Planning Policy Framework (MHCLG, 2021), and will help achieve Suffolk Biodiversity targets.

5.1.1 Building-mounted boxes

Woodcrete boxes (which are more durable and long-lasting than wooden alternatives) could be installed on the south-west facing gable end of the Cottage; e.g., low profile Chillon or Beaumaris externally mounted boxes (Figure 5.1).

5.1.2 Tree-mounted boxes





Schwegler 2F (general purpose bat boxes) and 2FN bat boxes (suitable for brown long-eared and noctule bats) could be erected within the mature retained tree on the north-western boundary of the garden. The 2F boxes should be 3m to 5m above ground level; the bigger 2FN boxes should also be installed on mature trees, fixed higher in the canopy (above 5m).

Bat boxes should face south-east, south and/or south-west (groups of three per tree to give bats a choice of thermal opportunities) 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. Schwegler (or similar woodcrete) 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. The recommended number/type of bat boxes may change following the further surveys.


Figure 5.1: Specification of bat boxes.

<p>Chillon Woodstone Bat Box (for buildings)</p> <p>A large crevice style bat box made from woodstone. The internal space can accommodate up to 15 pipistrelle bats.</p>		<p>Beaumaris Bat Box (for buildings)</p> <p>A woodstone box for crevice-dwelling bats. Can be sited on walls/buildings.</p>	
<p>Schwegler 2F Bat Box (for trees)</p> <p>Multi-purpose bat box for pipistrelles – tree-mounted. Manufactured from long-lasting Woodcrete, a blend of wood, concrete and clay which will not rot, leak, crack or warp, and will last for at least 20 - 25 years.</p>		<p>Schwegler 2FN Bat Box (for trees)</p> <p>The 2FN bat box is for bigger bats (e.g., noctule, brown long-eared). This box should be sited in trees and is best positioned at a height of between 3 to 6 metres.</p>	

5.2 Bird Boxes

Song thrushes and spotted flycatcher use open-fronted nest-boxes: The Schwegler 2H open-fronted nest boxes, or other box-types to approved BTO-standards, can be installed in retained boundary trees or the new Garden Office building (Figure 5.2).

Figure 5.2: Specification of bird box.

<p>Schwegler 2H Open-fronted Bird Box</p> <p>Should always be installed on the outside walls of houses, barns, garden sheds, or trees: 2-4m high. 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.</p>	
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5.3 Ongoing Monitoring and Maintenance - Post-completion

Bat and bird box fixings must be inspected regularly to ensure that they are safe, and the box 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.

6 Conclusion

Church Lane Cottage has 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 are damaged 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).

The current proposals do not involve any impact to the main roof, but the two single storey lean-to extensions will be re-built and re-roofed.

Further bat surveys should be undertaken, as detailed in Table 3.2, to inform any further survey or mitigation requirements. Any mitigation for crevice-roosts of this type would be through provision of bat boxes, or replacing the roost-features *in-situ* when the roofs are replaced. This would be 'like-for-like' mitigation proportional to the species and roost conservation status.

F1-Type bitumen/hessian-backed felt should be used in areas of the roof which can be accessed by bats, as most modern breathable membranes have been shown to be harmful to bats. There is currently one breathable membrane brand which has passed a snagging propensity test and can be licensed for use in roosts.

If the recommended surveys are carried out prior to start of any external works affecting the roofs, and any further recommendations following the surveys (including precautionary working methods and achieving a licence if bats are recorded roosting), then any impact to protected bats, and the local conservation status of bats, should be minimal and roost(s) can be reinstated *in situ* on completion.

7 References

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