

Preliminary Roost Assessment
2 Church Lane

Bob Humphreys
Project number 307
Version 1
14 February 2024

Report Summary

We were instructed by Bob Humphreys to undertake a Preliminary Roost Assessment of 2 Church Lane, Eakring, Newark, Nottinghamshire, NG22 0DH, (Ordnance Survey (OS) grid SK67326220).

The Site is a semi-detached house and a separate garage. The house is brick built and gable ended. The roof is clad in cement pan tiles and a bitumen felt liner with insulation foil pinned under the rafters. There is a single storey flat roof extension off the south gable and a conservatory to the rear. The garage has single skin cement slab walls and a two layered roof with corrugated sheets over OSB.

The proposals are to construct a two-storey side extension. The roof line on the north aspect will be lower than the existing but will tie into the roof on the south aspect. The extension will be over the existing flat roof area and will require removal of the garage.

The survey found that there are several potential roosting features within the Site and signs of bats were recorded in the loft. Bats are roosting at the gable end of the building.

Modifications to the proposed scheme have been suggested which will reduce direct impacts to bats and their roosts, which if combined with restrictions to the timing of works would avoid significant impacts to bats.

If the modifications and restrictions are not possible, further surveys have been recommended in line with good practice to confirm how bats roost in these features, and to inform the best approach to mitigation, compensation, and licencing.

To provide enhancement with the scheme bird, bat, and bee boxes have been recommended.

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1 Introduction, Method, and Limitations

This report outlines the results of a Preliminary Roost Assessment undertaken by Jo Pedder on 14 February 2024 at 2 Church Lane, Eakring, Newark, Nottinghamshire, NG22 0DH (called the Site from here on).

A Preliminary Roost Assessment (PRA) is an assessment of a structure for its potential value to bats, specifically when they are roosting (resting in a shelter). The aims of the survey and report are to:

1) Identify and assess Potential Roosting Features (PRF) at the Site

Different species of bat have different preferences for roosts. Some tend to roost in open spaces such as lofts, but many roost in crevices on the outside or inside of structures such as frost cracks in trees, timber joints in barns, or between roof tiles and roof membranes in houses.

2) Identify if there is direct evidence of bats roosting in the structure

This could be observed bats, faeces, or feeding remains. However, not all bat roosts have obvious signs of use, especially those in crevices on the outside of structures.

3) Assess the potential value of the structure to bats

A combination of direct signs of bats, PRF, and surrounding habitat is used to assess the potential conservation value of the structure for bats.

4) If necessary, advise on further work to be undertaken

If the Site is assessed as having potential value to roosting bats, additional surveys may be needed to inform the best approach to mitigation, compensation, and licencing. Enhancement measures are also usually included in line with planning policy.

5) Identify nesting birds

As it is a requirement of local planning authorities, the survey and report also aim to identify nesting birds, and to discuss mitigation, compensation, and enhancement for these.

A full method statement is included in Appendix 2.

Limitations

The survey was undertaken in the winter months when bats may be hibernating. They may therefore not be occupying their summer roosts. Evidence of bats that may have

accumulated on the outside of buildings or trees in summer may have been washed away by rain.

Any ecology assessment must be considered as a 'snapshot' of conditions at the time of the survey. Ecological constraints will change over time and therefore the findings of this report are valid for a period of one year, after which the report should be reviewed to assess whether the survey should be updated.

No constraints were such that they affect the overall conclusions and recommendations made in this report.

2 Results

To provide context to the Site, it is useful to consider the surrounding landscape and habitats. It is also important to identify and acknowledge protected wildlife habitats, such as Nature Reserves that are nearby.

Habitats in the region

The Site is in the Trent and Belvoir Vales National Character Area (NCA). The NCA is characterised by undulating, strongly rural and predominantly arable farmland, centred on the River Trent. It is a low-lying rural landscape with relatively little woodland cover. The area's generally fertile soils and good quality agricultural land have supported a diversity of farming over a long period but, because of this, little semi-natural habitat remains.

The River Trent and flood plain provide a strong feature running through the landscape. It is the greatest biodiversity resource, being a major corridor for wildlife moving through the area and supporting a variety of wetland habitats.

There are no designated wildlife areas within 1 km of the Site.

Table 1- Designated Areas

Designation / Location	Ecological Feature
Local Nature Reserves	
None	n/a
Sites of Special Scientific Interest	
None	n/a
Special Areas of Conservation	
None	n/a
Special Protection Areas	
None	n/a
Ramsar Sites	
None	n/a

Habitats in the area around the Site

Habitats within 500 m of the Site include (in approximate order of area):

- Arable and pasture fields
- Houses, gardens, and farm buildings
- Woodland and scrub

Figure 1, an aerial photograph of the Site, shows the Site in context with the surrounding landscape. The yellow circle has a 500 m radius.

Figure 1 – Site Location



The habitats in the area are suitable for foraging and commuting bats.

Habitats at the Site

The Site is a semi-detached house and a separate garage. The house is brick built and gable ended. The roof is clad in cement pan tiles and a bitumen felt liner with insulation foil pinned under the rafters. There is a single storey flat roof extension off the south gable and a conservatory to the rear. The garage has single skin cement slab walls and a two layered roof with corrugated sheets over OSB.

Photos taken during the survey and detailed survey results are in Appendix 3.

Bats

The house has several potential roosting features. These include:

Lifted tiles which may provide access to the cavity between roof tiles and roof felt, particularly around a flue on the front (north) aspect, and the lowest band of tiles on the north aspect.

Gaps in the roof felt under the overhanging eaves on the north aspect.

The loft space is suitable for void roosting species of bat, and there are cavities which crevice roosting species could use on the gable wall. Approximately fifty bat droppings (likely pipistrelle species) were recorded on the boiler, wall, and floor, all at the east gable wall. These droppings were also caught on cobwebs between the wall and bitumen felt, indicating that the likely roosting place is in the roof structure and not within the roof void. Bats could be roosting on the wall top, wall cavity, or between roof tiles and the roof membrane. The droppings were a mix of ages, including fresh droppings from the last 12 months.

There are gaps between the corrugated sheets and OSB of the garage roof, but these could be fully viewed with a torch, and it was clear that bats do not roost in this structure.

The house has been assessed as of high potential suitability (confirmed roost) as it meets the following criteria:

A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions¹ and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.

Birds

Bird droppings were recorded under a gap in the felt under the eaves on the north aspect of the house, indicating that birds, such as sparrows, nest or roost there.

¹ For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance

3 Discussion

Project Proposals

The proposals are to construct a two-storey side extension. The roof line on the north aspect will be lower than the existing but will tie into the roof on the south aspect. The extension will be over the existing flat roof area and will require removal of the garage.

Project Impacts and Constraints

Bats and their roosts (even when not occupied) are legally protected from disturbance and harm. Active bird nests are protected from damage and some species are protected from disturbance².

Bats

As bat roosts are present, they could be impacted by disturbance during construction, and bats and their roosts could be damaged when the roof tiles are stripped back to tie into the new roof. Bat access points could be lost, effectively destroying the roost.

Alternative Design and Mitigation

This issue was discussed with the Client after the survey and we identified that impacts could be mostly mitigated by altering the new roof line so that it does not tie into the existing roof at all. Dropping the south aspect roof by 30cm below the existing wall plate would avoid damaging bat roosts, or injuring bats.

Unlawful disturbance of bats could still be an issue if there is a maternity colony present. However, with appropriate redesign of the extension and restriction of the timing of works, significant impacts to bats can be mitigated, and therefore a licence (and additional surveys informing the licence) can be avoided. If the most disturbing activities were timed to avoid May to August inclusive, unlawful disturbance of bats could be avoided.

The most disturbing activities would be defined as the following, until the extension roof is in place and tiled:

Use of power tools within 2m of the existing roof line.

Siting and operating of noise generating equipment, including radios, within 2m of the existing roof line.

² This is a very broad generalisation – see Appendix 1 for more information. This report is not legal advice and should not be relied upon as such – for detailed interpretation of the law a specialist lawyer should be consulted.

Any works which vibrate or impact the existing wall at any level, such as breaking through between the extension and the existing exterior wall.

Further Surveys

If the scheme cannot be redesigned to avoid impacting the roost, or the works cannot be timed to avoid May to August, further surveys are required to better understand bats' use of the building and what the impacts of construction will be and to inform a licence application. Timing the works to avoid May to August may still be required as part of the mitigation.

The surveys should be designed following current best practice³ and include high-quality night vision cameras paired with recording ultrasonic bat detectors, operated by trained and experienced surveyors.

The minimum effort should be three bat roost surveys completed between May and August (the third visit can be between May and September).

These surveys will aim to confirm whether there are additional bat roosts at the property and to identify all of the roosts' size, type and the species involved. Survey design should be iterative; each stage informing the next. The effectiveness of the surveys should be considered at each stage. In some circumstances where a roost has been identified the survey effort may need to be increased to characterise the roost if insufficient data has been gathered to determine what mitigation is appropriate.

A suggested survey set up is shown in Appendix 3, with locations for observation points to cover all aspects of the building.

Mitigation and Compensation

As bats are roosting in the building the mitigation hierarchy should be followed. This is the process of identifying viable ways to mitigate or compensate for impacts:

Avoidance and Minimisation

This first stage is to avoid harm to biodiversity, for example by locating to an alternative site. It is the most important stage and can ease the consent process, whereas missing this stage can lead to criticism, objections, and refusal of planning permission.

If avoiding all adverse effects is not possible, action is taken to minimise these effects. This can be achieved, for example, by modifying the proposed layout, construction method, or altering the project timing to avoid sensitive periods.

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

This is discussed above as "Alternative Design and Mitigation".

Compensation

Addressing residual adverse effects is the final stage, considered after all possibilities of avoiding and minimising the effects have been implemented. Compensation does not prevent the effects but provides measures to offset harm that cannot be prevented. This might include providing alternative roosting features in a different location.

The mitigation and compensation scheme for this Site will be determined after the nocturnal surveys for bats has been completed. The number of bats, their species, and their use of the structure will inform details such as the number, type, and locations of new roosting features, whether the timing of works needs to be restricted, the extent of supervision required during the works, whether lighting design is required, etc.

As an example mitigation and compensation for this scheme may include:

- Avoiding the summer to undertake the most disturbing works
- Soft stripping the roof with an ecological watching brief.
- Incorporating bat boxes onto the external walls.

Licencing

If the effects of the project after applying mitigation measures may cause an offence (e.g. disturbance of bats, or damage to their roosts) then a Natural England development licence is likely to be required to allow the project to be completed lawfully. This might be either a project licence, or for certain small impacts, a class licence held by a registered ecologist (see Appendix 1 for more details on licencing).

Birds

No sign of nesting birds was observed in the area affected by the proposed works during the survey, however the possibility of nesting in the future cannot be entirely ruled out. If works are undertaken during the main breeding season (which is generally taken to run from March to August inclusive) care should be taken to avoid damaging or destroying active birds' nests.

Ecological Enhancement and Opportunities

Under the National Planning Policy Framework and the 25-year environmental plan the government has set out policies and aims to deliver a net gain in biodiversity through improved green infrastructure and increased opportunities for wildlife.

To satisfy the local authority that this development will contribute to these aims, enhancement measures should be incorporated into the proposal. These measures should go beyond those required for mitigation and compensation.

For enhancement of the proposed development, it is recommended that roosting and nesting habitat for bats, birds, and bees is provided by incorporating wildlife boxes into the scheme.

At least one bat box, one 'universal' bird box, and one bee brick should be integrated into the façade of the proposed extension.

Bat boxes should be installed at a minimum height of 4 m ground (or as high as possible) and should be south or east facing.

Bird boxes should be installed out of direct sunlight or else shaded day long beneath broad eaves. They should be 5 m or more above ground (or as high as possible). They should not be obstructed by nearby trees, cables, creepers, or aerials.

Bee bricks should be positioned in a warm sunny spot, south facing, with no vegetation in front of the fascia. Ideally placed at least 1 m from the ground with no upward limit.

Examples of wildlife boxes are presented in Appendix 4.

Conclusion and Summary

The survey found that there are several potential roosting features within the Site and signs of bats were recorded in the loft. Bats are roosting at the gable end of the building.

Modifications to the proposed scheme have been suggested which will reduce direct impacts to bats and their roosts, which if combined with restrictions to the timing of works would avoid significant impacts to bats.

If the modifications and restrictions are not possible, further surveys have been recommended in line with good practice to confirm how bats roost in these features, and to inform the best approach to mitigation, compensation, and licencing.

To provide enhancement with the scheme bird, bat, and bee boxes have been recommended.

Appendix 1 Legislation and Policy

Legislation

There are many active pieces of legislation which are aimed at protecting wildlife and habitats within the UK. These are summarised in Table 2.

Table 2 - Summary of Primary Legislation in the UK

Legislation	Description
The Wildlife and Countryside Act (WCA) 1981	<p>The WCA is the primary piece of legislation relating to nature conservation in Great Britain. The Act is supplemented by provisions in the CRoW Act 2000 and the NERC Act 2006. It provides for the notification and confirmation of Sites of Special Scientific Interest by Natural England. It also sets out, in schedules, important and invasive species which are legally protected or require active management.</p> <p>The WCA consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the conservation of wild birds (Birds Directive) in Great Britain (NB Council Directive 79/409/EEC has now been replaced by Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version)).</p>
The Conservation of Habitats and Species Regulations 2017	<p>The Conservation of Habitats and Species Regulations 2017 consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds Directive in England and Wales. The Regulations came into force on 30th November 2017 and extend to England and Wales (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters).</p>
The Countryside and Rights of Way (CRoW) Act 2000	<p>The CRoW applies to England and Wales only, received Royal Assent on 30 November 2000, with the provisions it contains being brought into force in incremental steps over subsequent years. Containing five Parts and 16 Schedules, the Act provides for public access on foot to certain types of land, amends the law relating to public rights of way, increases measures for the management and protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation, and provides for better management of Areas of Outstanding Natural Beauty (AONB). The Act is compliant with the provisions of the European Convention on Human Rights, requiring consultation where the rights of the individual may be affected by these measures.</p>
Natural Environment & Rural Communities (NERC) Act 2006	<p>The NERC places a duty on authorities to have due regard for biodiversity and nature conservation during their operations.</p> <p>The NERC Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The list replaces the UK Biodiversity Action Plans (UKBAP) and has been drawn up in consultation with Natural England, as required by the Act.</p> <p>The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of NERC Act, to</p>

	<p>have regard to the conservation of biodiversity in England, when carrying out their normal functions.</p> <p>Fifty-six habitats of principal importance (HPI) are included on the S41 list. These are all the habitats in England that were identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework. Of most relevance to the Site, they include ponds, open mosaic habitats on previously developed land and lowland heathland.</p> <p>There are 943 species of principal importance (SPI) included on the S41 list. These are the species found in England which were identified as requiring action under the UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework.</p>
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Protected Species

Bats

All species of bat in Britain are 'European Protected Species' (EPS) and are protected under the Conservation of Habitats and Species Regulations 2010, and the Wildlife and Countryside Act 1981, as amended by the Countryside & Rights of Way Act 2000. These pieces of legislation combine to give substantial protection to EPS and their habitats, making it an offence to:

Deliberately capture, injure, or kill a bat.

Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats.

Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time).

Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.

Intentionally or recklessly obstruct access to a bat roost.

The Natural Environment & Rural Communities (NERC) Act 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during their operations.

Nesting Birds

All wild bird nests are protected under The Wildlife and Countryside Act 1981 (as amended), making it an offence to:

Intentionally kill, injure, or take any wild bird or their eggs or nests (with certain exceptions).

Disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting.

Nests of golden eagle, white-tailed eagle and osprey are protected year-round.

Bird Directive

Bird Directive Annex I lists species that shall be the subject of special conservation measures concerning their habitat to ensure their survival and reproduction in their area of distribution.

Protected Species Licencing

The animal and plant species listed on Schedule 2 and 4 of The Conservation of Habitats and Species Regulations 2010 (as amended) are referred to as European Protected Species (EPS).

If a project is likely to impact a EPS and breach the Conservation of Habitats and Species Regulations 2010, and where best practice guidance avoidance measures either cannot be followed or are not applicable, licences can be obtained to allow persons to carry out activities that would otherwise be prohibited, without committing an offence. Natural England has powers to grant such licences in England if it meets three "derogation tests."

The three tests are that:

The activity to be licensed must be for imperative reasons of overriding public interest⁴ or for public health and safety ('public' can in some circumstances be interpreted as an individual or family).

There must be no satisfactory alternative.

Favourable conservation status of the species must be maintained.

There are two licencing routes available (depending on the location of the project). A Project Licence, where the developer would apply for a licence for their project and be the licensee, or a Class Licence, where a consultant is registered to use the licence and can use it for low impact activities and notify Natural England, rather than make an individual application for the project.

Low Impact Class Licence

The bat 'low impact' licence is a mitigation class licence. A consultant who is registered to use this licence can register a site and carry out certain activities that would otherwise be unlawful:

⁴ This is usually arguable where the project meets an identified planning need, i.e. social housing. 'Public' can be interpreted as an individual or family.

to disturb and capture up to three 'common or widespread' bat species (which are those listed in each annex)
to damage or destroy up to three 'low conservation status roosts' (these are: feeding, day, night, and transitional roosts)
if the action has a low or temporary impact on bats or their roosts
if sites are registered before you start work

Registration of a site under the licence is straightforward and Natural England accept registration from 3 days. Projects entered into a class licence have the same survey requirements as a project licence.

The Annexes define what are common or widespread species based on geographical area and experience of the consultant. In the counties that I work, Class Licences are available to damage and destroy no more than three low conservation status roosts. Of these roosts, you can disturb and capture, in appropriate small numbers, no more than three common species of:

common pipistrelle
soprano pipistrelle
brown long-eared
whiskered
Brandt's
Daubenton's
Natterer's

Project Licence

The licence application consists of three documents, Section one - Application details (a basic application form), Section two - Method Statement (MS) (specifying the proposals, mitigation, compensation, and schedule and demonstrating how the project meets Test 3) and Section three - Reasoned Statement (RS) (demonstrating how the project meets Tests 1 and 2). The Application form and Method Statement is usually completed by your ecologist (who is included in the application as a Named Ecologist) and the Reasoned Statement by the client or their planning consultant or environmental lawyer.

The developer is usually the applicant and licensee and is legally responsible to carrying out the method statement. To protect other people working on the project (and to legally tie them to the MS) contractors and consultants that may affect the EPS, such as demolition or construction contractors and the ecologist should be appointed as 'accredited agents' to the licence by the licensee.

Natural England aim to determine an application within thirty working days, at which point they make a Further Information Request (FIR) if there are uncertainties, or they do not agree with the MS or RS. At the end of the licensable activities the licensee is

required to submit a licence return (although this is usually completed on their behalf by the Named Ecologist), where they declare the success (or failure) of the mitigation and are obliged to report on breaches to the MS.

Policy

National Planning Policy Framework (NPPF) (2021)

Chapter 15 of the National Planning Policy Framework (NPPF) aims at conserving and enhancing the natural environment and states that planning policies and decision should contribute to and enhance the natural and local environment. In terms of biodiversity this should be achieved by:

- protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils
- recognising the intrinsic character and beauty of the countryside, and wider benefits from natural capital and ecosystem services.
- minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

The NPPF states that to protect and enhanced biodiversity, [local] plans should:

- identify and safeguard components of wildlife-rich habitats and wider ecological networks.
- promote the conservation and enhancement of priority habitats and ecological networks and the protection and recovery of priority species.

The NPPF states that when determining planning applications, local planning authorities should refuse applications which:

- cause significant harm to biodiversity which cannot be avoided, adequately mitigated or as a last resort, compensated for.
- plan to develop on land within or outside of a Site of Special Scientific Interest (SSSI) and which is likely to have an adverse effect on it (either individually or in combination with other developments).
- result in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) unless there are wholly exceptional reasons and where a suitable compensation strategy exists.

The local planning authority should support developments whose primary objective is to conserve or enhance biodiversity, especially where this can secure measurable net gains in biodiversity.

HM Government – 25 Year Environment Plan

The 25-year plan to improve the environment sets out what the government intends to do to increase biodiversity, reduce climate change and secure ecosystem services. It aims to deliver cleaner air and water, protect threatened species, and provide richer wildlife habitats.

Appendix 2 Methodology

Personnel

The survey was undertaken and reported by Jo Pedder. Jo Pedder BSc. hons MCIEEM is an ecologist with over 20 years' experience in surveying for bats. Jo holds survey licences for bats (level 2 2015-15081-CLS-CLS) and great crested newts (level 1 2018-34475-CLS-CLS) and development licences for bats and newts. Jo has experience in a range of projects from barn conversions to sites over 300 ha and has worked in the minerals, housing, and energy sectors.

Preliminary Roost Assessment

A Preliminary Roost Assessment (PRA) was undertaken on 14 February 2024. The PRA followed the Bat Conservation Trust (BCT) guidelines criteria⁵ (see Table Below).

A PRA is a detailed inspection of the exterior and interior of a structure to look for features that bats could use for entry/exit and roosting and to search for signs of bats.

The aim of this survey is to determine the actual or potential presence of bats and the need for further survey and/or mitigation. In many situations it is not possible to inspect all locations where bats may be present and therefore an absence of bat evidence does not equate to evidence of bat absence.

A PRA involves a detailed external and internal inspection of the structure to compile information on potential and actual bat entry/exit points; potential and actual bat roosting locations; any evidence of bats found and the number of ecologists that will be required for any subsequent surveys.

⁵ The Bat Conservation Trust - Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition)

BCT Roost Potential Suitability Criteria

Suitability	Roosting habitats in structures	Potential flight-paths and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible (a)	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions (b) and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats (c)).	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions (b) and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions (b) and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

a Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute).

b For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

c Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2016 and Jansen et al., 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.

Desk Study

Given the limited scale of the proposals and limited potential for impacts to arise outside the Site, a full data search was not commissioned for this stage of the project. Ordnance Survey maps and online aerial photos were used to provide site context and the online Multi-Agency Geographical Information Centre⁶ (MAGIC) was used to find any internationally and nationally statutory protected areas within 1 km of the Site.

⁶www.magic.go.uk (Accessed 14 February 2024)

Appendix 3 Results

Date: 14 February 2024

Surveyor: Jo Pedder

Location: 2 Church Lane, Eakring, Newark, Nottinghamshire, NG22 0DH

Grid Reference: SK67326220

Site Description: The Site is a semi-detached house and a separate garage. The house is brick built and gable ended. The roof is clad in cement pan tiles and a bitumen felt liner with insulation foil pinned under the rafters. There is a single storey flat roof extension off the south gable and a conservatory to the rear. The garage has single skin cement slab walls and a two layered roof with corrugated sheets over OSB.

Bats

The house has several potential roosting features. These include:

- Lifted tiles which may provide access to the cavity between roof tiles and roof felt, particularly around a flue on the front (north) aspect, and the lowest band of tiles on the north aspect.

- Gaps in the roof felt under the overhanging eaves on the north aspect.

The loft space is suitable for void roosting species of bat, and there are cavities which crevice roosting species could use on the gable wall. Approximately fifty bat droppings (likely pipistrelle species) were recorded on the boiler, wall, and floor, all at the east gable wall. These droppings were also caught on cobwebs between the wall and bitumen felt, indicating that the likely roosting place is in the roof structure and not within the roof void. Bats could be roosting on the wall top, wall cavity, or between roof tiles and the roof membrane. The droppings were a mix of ages, including fresh droppings from the last 12 months.

There are gaps between the corrugated sheets and OSB of the garage roof, but these could be fully viewed with a torch, and it was clear that bats do not roost in this structure.

Birds

Bird droppings were recorded under a gap in the felt under the eaves on the north aspect of the house, indicating that birds, such as sparrows, nest or roost there.

Suggested Phase 2 Survey Setup

To undertake roost surveys at this Site, two vantage points (VP) are suggested to cover all potential roosting features at the property. Vantage Points may be covered by surveyors and / or night vision aids⁷, assuming that best practice guidelines are followed.



⁷ NVA must be high-quality cameras with additional IR lighting, paired with recording bat detectors, and operated by trained and experienced surveyors. Depending on the situation and the limitations of the equipment, one operator could potentially cover more than one VP using cameras.

Survey Photos



1 Front – north aspect



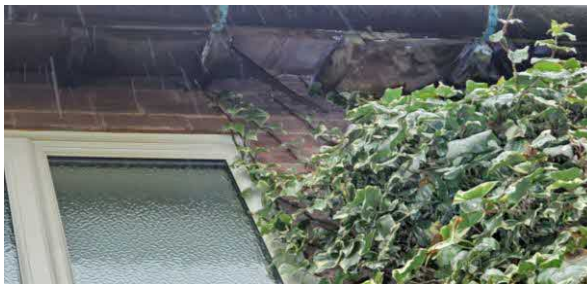
2 Side – east aspect



3 Rear – south aspect



4 Example gaps under tiles on south aspect



5 Gaps to eaves on north aspect



6 Gaps to tiles near flue on north aspect



7 Internal view of loft



9 Bat and mouse droppings on floor at gable wall



11 Garage south aspect

8 Bat droppings on purlin at gable wall



10 Garage north aspect



12 Gaps under roof corrugations

Appendix 4 Enhancement Examples

Schwegler Bat Tube

The 1FR Bat Tube is designed to be installed on the external walls of buildings, either flush or beneath a rendered surface. It can also be painted to match your building with air-permeable paint if desired.

Comprised of Woodcrete with an integrated wooden panel.

Dimensions: 200mm wide x 470mm high x 120 mm deep

Entrance Dimensions: 150 x 90 x 20 mm

Weight: Approximately 9.8 kg



Habibat Integrated Bat Box

These boxes can be built into the walls of new buildings to create purpose-built crevices for bats.

Facing products include:

- Brick
- Stone
- Granite
- Masonry
- Slate
- Terracotta
- Tile
- Timber

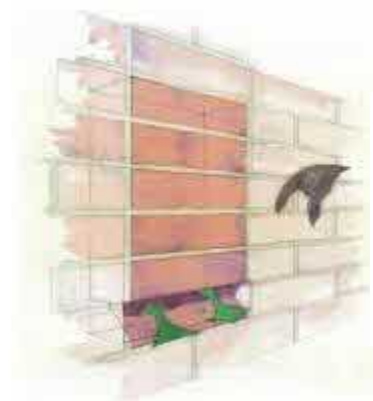


Photo courtesy of
Habibat

Dimensions: 215 mm wide x 440 mm high x 102 mm deep

Weight: Approximately 7 kg

CJ Wildlife Swift Nest Box B

Installed on or within a wall.

Dimensions: 16 x 18.5 x 33.5cm

Weight: 7kg

Woodstone



Photo courtesy of CJ Wildlife

Swift boxes are a 'universal' bird box as they are known to support all four of the red listed urban bird species (swift, house sparrow, starling & house martin) will readily take to swift bricks,

Green and Blue Bee Brick

Bee Brick™ is solid at the back and has moulded cavities where the bees will lay their eggs, sealing the entrance with mud or chewed up vegetation. Offspring emerge in the Spring and begin the process of nesting again, repeating the cycle.

Dimensions: 215 mm x 105 mm x 65 mm

Weight: 2.9 kg



Photo courtesy of Green and Blue

Appendix 5 Data for the Local Records Centre

It is a requirement under the CIEEM code of practice to provide recorded data to biological record centres. For certain records (i.e. data obtained under a government survey licence) we also have a legal obligation to forward such data.

Species	Location address	Location county	Location Postcode	Grid Reference	Roost Type	Survey date	Purpose	Number of bats observed	Additional Information
Bat – likely pipistrelle	2 Church Lane, Eakring, Newark	Nottinghamshire	NG22 0DH	SK67326220	Unknown	14 February 2024	Commercial survey	None	Approximately 50 droppings on and around the east gable wall. Droppings likely to be pipistrelle sp.

Document Control

Report Issue	Notes	Author	Date
01	Original document to client.	Jo Pedder	14 February 2024
02			
03			
04			
05			

The Ecology Surveyor and The Bat Surveyor are trading names of Jo Pedder, a freelance ecologist based in Belper, Derbyshire.

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