



Clayton Ecology

PBRA/Bat Emergence and Activity Survey

164 Markfield Road
Ratby

August 2024

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SUMMARY

This report has been prepared by Clayton Ecology Ltd for the owner Aaron Vadhia. The report provides the results of a preliminary bat roost assessment at 164 Markfield Road, Ratby, LE6 0LS.

No evidence of roosting bats was found during the visual inspection.

The PBRA survey determined that the building contained access points and features present that would be suitable for crevice dwelling bats.

The buildings were assessed as unsuitable for hibernating bats.

The PBRA determination therefore is that the main building is of "low bat roost potential" as per the Good Practice Guidelines (Collins 2023). Therefore, a further survey was required to determine presence/likely absence for bats.

To address the requirement of an emergence and activity survey was undertaken within the main bat survey period, to cover the entirety of the building on the 12th August 2024. The survey recorded low bat activity within the local area but no bats were recorded emerging or associating with sections of the structure to be impacted by the development, such as to suggest potential for bats to roost in the future.

The determination of this report is that there is no requirement for further follow-up surveys or mitigation. The work will not require a European protected species derogation licence.

Please note that although no bats were found during these surveys there is still a (however unlikely) risk of bats being present during the building activity. Therefore, a copy of section 6, Appendix 1 **must** be kept in the Site Office and be part of the induction for all workers on site.

As breeding bird evidence is present, there are seasonal constraints - works are required to take place outside of the bird breeding season of March to August. However if works are planned within the breeding bird season, an ecologist should be consulted to undertake a breeding bird survey immediately prior to the planned works.

No evidence of other protected species or invasive species was found during the visual inspection of the surrounding landscape.

No further surveys are required.

1. INTRODUCTION

This report has been prepared by Clayton Ecology Ltd for the owner Aaron Vadhia. The report provides the results of a preliminary bat roost assessment and an emergence and activity survey at 164 Markfield Road, Ratby, LE6 0LS. The survey building is located at Ordnance Survey grid reference, SK 50803 06582.

The proposal: two storey extension to the side of the property (Hinckley & Bosworth Borough Council - 24/00510/HOU).

The report provides the results of a preliminary bat roost assessment and bat emergence and activity survey.

The legislation with regard to bats *Chiroptera* is listed below.

1. Legislation applicable to bats

All species of British bat and their roosts are protected under British law by the Wildlife and Countryside Act 1981 (as amended), and bats are classified as European Protected Species under the Conservation of Habitats and Species Regulations 2017 ('the 2017 Regulations'). This has recently been amended by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations (2019) which continue the same provision for European protected species, licensing requirements, and protected areas after Brexit.

The legislation makes it an offence to kill, injure or disturb a bat and/or to damage or destroy a breeding site or resting place for a bat. It is also an offence to disturb the animals such that it impairs their ability to survive, to reproduce, to nurture their young, or such that it impairs their ability to hibernate or migrate. Under this legislation development work that could affect a bat or bat roost can only be permitted under a licence from Natural England.

Licences in respect of European Protected Species affected by development can be granted under Section 55(2) (e) of The Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations (2019), for the purpose of preserving public health or public safety or other imperative reasons of overriding public interest including those of social or economic nature and beneficial consequences of primary importance for the environment.

Under section 55(9) of the Regulations licences can only be issued if Natural England is satisfied that:

- there is no satisfactory alternative to the work specification
- and the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

Natural England aim to process EPS licence applications within 35 working days of receipt and Low Impact Class licenses are typically registered within 14 working days of receipt.

2. Legislation applicable to breeding birds

Under the Wildlife and Countryside Act 1981 (as amended), all native birds and their nests, whilst in use, are protected from harm, disturbance or destruction during the breeding season. To avoid conflict, development work that could affect breeding birds should be timed to take place outside of the breeding season, variable between March and September. Note that a nest is protected from the beginning of its construction until the young have fledged and left the nest.

2. SITE DESCRIPTION

2.1 Location of the building



Figure 1: The situation of the building, encircled in red, in relation to the surrounding landscape, courtesy of Bing Maps 2024.

The building is situated in north-west Ratby, in a residential area. Markfield Road borders the Site to the south and Martinshaw Wood Local Wildlife Site (LWS) borders the Site to the north.

The immediate surrounding landscape contains residential dwellings and woodland to the north.

Description of the building

The survey building is a red brick cavity walled two-storey residential dwelling. The roof is an unlined wooden A framework, covered in clay tiles. There is a garage extending from the eastern elevation which is well sealed. The windows and doors are UPVC and are generally well fitted to the main building. The soffits and fascia boards were generally well sealed and flush to the wall. See photographs 1 to 3 inclusive.



Photograph 1: The north elevation of the building and garage.



Photograph 2 & 3: The south elevation of the building and view of the internal roof structure.

3. SURVEY METHODOLOGY

3.1 Desktop study

The desktop study involved examining web-based resources. The following resources were examined:

- MAGIC - Multi-Agency Geographic Information website for maps of statutory designated nature conservation sites within 1km of the survey area and previously Granted European Protected Species Applications for Bats within 2km of the survey area.

3.2 Preliminary Bat Roost Assessment

A preliminary bat roost assessment was undertaken to the building on site. This survey was completed in accordance with the Good Practice Guidelines (Collins 2023), comprising a visual inspection of the building (formerly referred to as a bat scoping survey) as part of the ecological assessment of the potential development footprint.

The methodology included examining the building for potential roost features and assessing the likelihood of these features being used by bats. This included searching for evidence of bat roosting in the form of feeding remains, droppings, staining, worn surfaces and the bats themselves (alive or dead).

Equipment used included a powerful torch, collapsible ladders, camera, and binoculars.

3.3 Bat emergence survey

In order to determine the likelihood of presence/likely absence of bats within the buildings and thus provide evidence to inform the proposed works, a bat emergence and activity survey was undertaken to ensure that all aspects of the building were adequately surveyed.

The survey was completed by deploying one licenced and one experienced bat ecologists. The surveyors used Echometer Touch 2 and Pro detectors coupled to iPad Mini 5 and Samsung tablet. Ambient temperature was measured with an ETI Hygro-Therm hygrometer.

Two Canon XA20 cameras with two high powered infrared torches on each set up (Night Master NM1 CL IR LED 850) and positioned at opposite corners.

The survey commenced prior to sunset and lasted for 105 minutes.

All bat activity detected by the surveyors was documented.

3.4 Survey constraints

The PBRA survey was undertaken inside of the main bat survey season of May to September inclusive. Any evidence of bats on the external elevations may be removed by the actions of water and wind, evidence within sealed and undisturbed areas such as attic spaces would remain unaffected however.

Overall, there were no significant limitations given the aims of the survey.

There were no constraints for the emergence and activity survey.

3.5 Personnel

The preliminary bat roost assessment was undertaken by Clayton Ecology Ltd on the 19th of July. The survey was carried out by Clare Ward (Bat Licence: 2023-11740-CL17-BAT).

The emergence survey on the 12th of August 2024 was led by C Ward at position 1, supported by C Evans at position 2.

3.6 Weather Conditions

The weather conditions for the PBRA survey were dry with sufficient daylight enabling the surveyor to view the external fabrics of the building.

The weather conditions during the emergence and activity survey are shown in Table 1 below:

Table 1: Weather data for the emergence surveys.

Date	Sunset	Temperature (°C)		Cloud Cover (%)		Wind (Beaufort)		Precipitation	
		Start	End	Start	End	Start	End	Start	End
12th August 2024	20:36	23.1	19.5	20	60	1	2-3	None	None

3.7 Breeding birds scoping survey

Features that had potential to support nesting birds were recorded along with any breeding bird activity observed during the visual inspection.

3.8 Other protected species

An ecological walkover of the area immediately surrounding the building was carried out to assess the habitat for other protected species.

4. SURVEY RESULTS

4.1 Desk Study

There are no Statutory Designated Sites (Site of Special Scientific Interest (SSSI) /Special Area of Conservation SAC/ National Nature Reserve (NNR)) within 1km of the Site, though the Site does border Martinshaw Wood LWS, an ancient semi-natural woodland, on its northern boundary.

A search of the Magic Map application for previously granted (Bat) European Protected Species Derogation Licences within a 2 km radius of the Site identified the following:

- License number: EPSM2013-6361 Destruction of a resting place of Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Brown Long-eared (*Plecotus auratus*) dated 08/10/2013 approximately 1920m north-east of the Site.
- License number: 2014-3975-EPS-MIT and 2014-3975-EPS-MIT-1 Damage of a resting place of Common Pipistrelle dated 17/10/2014 and 27/04/2015 approximately 720m south-east of the Site.
- License number: 2015-14513-EPS-MIT Damage and destruction of a resting place of Common Pipistrelle, Soprano Pipistrelle and Brown Long-eared (*Plecotus auritus*) dated 21/09/2015 approximately 1920m north-east of the Site.

4.2 Preliminary Bat Roost Assessment Results

No evidence of use by bats was found during the visual inspection.

Access points into the building i.e. doors and windows were mostly sealed and well fitted, apart from one window in the upper storey. The roof was unlined and there was visible light coming through into the roof space in several areas, providing potential access points for bats. See photographs 4 and 5.

Access points into the building are:

- Gaps between the lead flashing and tiles at the front of the building.
- Gaps in the soffit and fascia boards at the front and rear of the building.
- Gap in the upper storey window at the front of the building.
- Gaps and loose mortar along the ridge tiles at the front and side of the building.
- Gaps in the mortar at the side of the building.
- Gaps in the brickwork of the chimney at the rear of the building.
- Loose mortar and raised tiles at the rear of the building.



Photograph 4: Raised tiles at the rear of the building.



Photograph 5: Gap between the lead flashing and tiles at the front of the building.

No evidence of roosting bats was found in the features of the building, however the building may be suitable for low numbers/individual bats within the local range.

Habitats of value to bats in terms of providing commuting, foraging and roosting opportunities include Martinshaw Wood that borders the Site to the north and Pear Tree Wood that is located approximately 420m south-west of the Site.

The immediate landscape is of moderate potential for foraging bats with an area of woodland directly north of the building, that may provide foraging/commuting habitat for all bat species within the local range.

The building was a heated residential building and was therefore assessed as unsuitable for hibernating bats.

In summary, the immediate area may provide moderate foraging/commuting habitat for all bat species within the local range.

The building was assessed as being of low potential for bats, based upon the geographical location of the structure against the potential bat roost features present.

4.3 Emergence and activity survey - 12th August 2024

For the emergence and activity survey, one licenced and one experienced bat ecologist were deployed, alongside night vision aids (NVA). The NVAs covered all aspects of the building. Still images of the NVA outputs at the end of the survey, are shown in Appendix 2.

The surveyor at position 1 recorded a total of 10 observation of bats during the survey period. This included Noctule bats (*Nyctalus noctula*) that were heard but not seen at 20:52, 20:54 and 21:57, Common Pipistrelles (*Pipistrellus pipistrellus*) that were heard but not seen at 21:17, 21:42 and 22:01 and those that were observed flying east to west at 21:18 and 21:26, and Soprano Pipistrelles (*Pipistrellus pygmaeus*) that were heard but not seen at 21:38 and 21:56.

The surveyor at position 2 recorded a total of 18 bat observations during the survey period. This included a Noctule bat that was observed foraging to the north-east at 20:53, 2x Brown Long-eared bats (*Plecotus auritus*) that were observed commuting north to south at 21:20 and Common Pipistrelles that flew past at 21:26, 21:57 and 22:00. Common Pipistrelles were also observed flying north to south at 21:52 and 21:55, foraging north-east of the house at 21:17, 21:33 and 21:43 and were heard but not seen at 21:05 and 21:40. Soprano Pipistrelles were heard but not seen at 21:02, 21:34, 21:36, 21:49 and were seen foraging within the area at 21:41 and 21:45.

At the close of this survey no bats were seen to emerge or associate with any parts of the building by any of the surveyors. In addition: the NVA recordings were reviewed and no bats were seen emerging from the building during the survey period.



Figure 2: The surveyor/NVA positions during the emergence survey.

4.4 Scoping survey results: breeding birds

There was evidence of bird species having utilised the structure for nesting, as bird droppings were found directly under an access point in the soffit at the front of the property. These were small droppings and were determined as Blue tit (*Cyanistes caeruleus*), however no birds were seen utilising the structure during either of the surveys.



Photograph 6: Access point in the soffit directly above the bird droppings.

4.5 Scoping survey results: other protected species

No evidence of other protected species or invasive species was found during the visual inspection of the surrounding landscape.

5. EVALUATION AND RECOMMENDATIONS

5.1 Evaluation

No evidence of roosting bats was found during any of the surveys carried out.

The building (low potential) had a bat emergence and activity survey which did not indicate current use by bats or likelihood of future use. In line with the Bat Survey Guidelines (Collins, 2023), one survey is required on buildings of low suitability to provide confidence in a negative result for the structure (P. 71, Table 7.2). Given the results of the survey, the building is not considered to support a bat roost.

The determination of this report is that there is no requirement for further follow-up surveys or mitigation. The work will not require a European protected species derogation licence.

Please note that although no bats were found during these surveys, the presence of Pipistrelle species within the area and the transient roosting behaviour of this aforementioned species, there is still a (however unlikely) risk of bats being present during the building activity.

Therefore, a copy of section 6, Appendix 1 **must** be kept in the Site Office and be part of the induction for all workers on site.

5.2 Breeding birds

Evidence of nesting birds (droppings under an access point) within the building was located during the survey.

All breeding birds are protected under the Wildlife and Countryside Act (1981) (as amended) that protects nests, whilst in use, from harm, disturbance or destruction during the breeding season.

As breeding bird evidence is present, there are seasonal constraints - works are required to take place outside of the bird breeding season of March to August. However if works are planned within the breeding bird season, an ecologist should be consulted to undertake a breeding bird survey immediately prior to the planned works.

In the event that an active bird nest is found during the planned works, it must be retained in situ undisturbed until the nest is no longer in active use. A nest is classed as active when it contains eggs or chicks and when it is being built.

5.3 Artificial lighting

Artificial lighting causes disturbance to bats; it has been shown to negatively impact upon emergence times and foraging opportunities for bats thereby reducing their fitness and ability to survive (Stone, Jones & Harris, 2009) as such all new lighting must follow the subsequent guidelines.

"The design of the lighting for the development should aim to avoid light pollution and spillage onto the existing boundary features. The external lighting on the Site should be as per 'Bats and Artificial Lighting at Night' (Institute of Lighting Professionals, 2023). Light sources, lamps, LEDs and their fittings come in a myriad of different specifications which a lighting professional can help to select. However, the following should be considered when choosing luminaires and their potential impact on Key Habitats and features. The elements of this mitigation best practice are as follows:

- All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component.
- Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012)
- Internal luminaires can be recessed (as opposed to using a pendant fitting where installed in proximity to windows to reduce glare and light spill
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.
- Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered.
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting should be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1- or 2-minute timer is likely to be appropriate.
- Use of a Central Management System (CMS) with additional web-enabled devices to light on demand
- Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely."

It is recommended that if additional lighting plans are developed that they comply with the Institution of Lighting Professionals (2023) guidelines above.

5.4 Biodiversity Enhancement Opportunity

Wherever possible, negative ecological impacts should be avoided. If this is unavoidable, then mitigation and compensation measures will be proposed for adverse ecological effects. In addition, it is best practice to seek positive biodiversity benefits through enhancement measures, in particular with regard to Priority Habitats

and Species listed on the national and local Biodiversity Action Plans and the NERC Act 2006.

IEEM (2006) endorses the following principle, recommended by the Royal Town Planning Institute (2000) for optimising the biodiversity outcomes of planning decisions:

New Benefits: seek to provide net benefits for biodiversity over and above requirements for mitigation and compensation.

Planning authorities are required to actively seek in development proposals, measures that aim to promote appropriate Priority Habitats and Species listed in the UK Biodiversity Action Plan and treat these as 'material considerations'.

The National Planning Policy Framework 2023 states in paragraph 180 section d:

"development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."

It is therefore recommended that a single integrated bat box: Integrated Eco Bat Box Crevice or Ibstock Type C (see Figure 3 below) or similar should be combined into the new building elevation, at the highest point possible, approximately 3 metres.



Figure 3: Photos of crevice type bat boxes that are available.

In addition a single bird box each of the type below should be erected within the rear garden to offset the loss/enhance nesting opportunities within the area. These are to be of a design that gives access for checking and cleaning, annually in autumn. They should not face in a southerly direction.

- 1x small robust, wooden open-fronted bird boxes to be installed into as 'inconspicuous' a position as possible within the rear boundary. Entrance space to face north-east, angled slightly downwards. These are particularly suited to Robins and Wren.
- 1x nest boxes 25mm entrance hole (suited to Blue Tits, Nuthatch and other small birds). To be mounted onto trees or poles, 1-5m above ground, at varying heights, angled slightly downwards.

- 1x nest boxes 28mm entrance hole (suited to Great Tits). To be mounted onto trees, at differing heights, angled slightly downwards, 1-5m above ground.

REFERENCES

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Royal Town Planning Institute, (2000). Planning for Biodiversity.

6. APPENDIX 1:BAT IS DISCOVERED WITHOUT AN ECOLOGIST PRESENT

If at any point in the building works bats are discovered then contractors must stop work immediately and telephone Clayton Ecology Ltd on 07473657591.

Clayton Ecology will either provide an appropriately licensed bat worker to the site or provide a member of staff who will liaise directly with the contractor. Actions will then be taken following advice given. This may include removal of bats, but only where the bat ecologist considers this to be a viable and safe option.

Bats are a protected species and there should be no attempt to handle a bat if discovered. The bat should be covered with a light material (cloth) and the bat worker called out to carry out the rescue.

Only when the bat ecologist is satisfied that the risk to bats is ceased will works recommence.

Should it transpire that the operation being carried out is of more risk to bats than was originally thought, then works will be stopped until they can be supervised by an appropriately licensed bat worker.

If a bat is found under a tile or within any other niche to the building fabric, works will stop immediately (as above). If the bat does not voluntarily fly out, then the aperture will be carefully covered over to protect the bat(s) from the elements, leaving a small gap for the bat to escape voluntarily. Any covering should be free from grease or other contaminants, and should not be a fibreglass-based material.

7. APPENDIX 2: STILL IMAGES OF NVA OUTPUTS AT END OF SURVEY

