



## **Preliminary Roost Assessment**

**The Garage to the rear of The Bell,  
The Bury, Odiham**

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**LIABILITIES:**

Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living animals and plants are capable of migration/establishing. Whilst such species may not have been located during the survey duration, their presence may be found on a site at a later date. This report provides a snap shot of the species that were present at the time of the survey only and does not consider seasonal variation. Furthermore, where access is limited or the site supports habitats which are densely vegetated, only dominant species may be recorded.

The recommendations contained within this document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to or during works.

## 1.0 Introduction

- 1.1 The Ecology Partnership was commissioned by Iconic Europe to undertake a preliminary roost assessment (PRA) of the garage which lies in the curtilage of The Bell, The Bury, RG29 1LY.
- 1.2 The key objectives of a PEA (CIEEM 2017) are to:
- Identify the likely ecological constraints associated with a project;
  - Identify any mitigation measures likely to be required, following the 'Mitigation Hierarchy' (CIEEM 2016; BSI 2013, Clause 5.2);
  - Identify any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA); and
  - Identify the opportunities offered by a project to deliver ecological enhancement.
- 1.3 This report comprises:
- The legislative and planning context (Section 1);
  - Assessment methodologies (Section 2);
  - Results (Section 3);
  - Implications for development, including an impact assessment (Sections 4 and 5);
  - Conclusions (Section 6).

### Site Context

- 1.4 The site comprises of the two storey garage building that also serves as storage set within the curtilage of the Grade II listed public house The Bell. The site lies just off the high street of Odiham, a semi-rural village that is located 9km east of Basingstoke (SU 74018 50997). With the immediate surroundings comprised of retail buildings and residential housing to the west, north and east, with All Saints Parish Church and graveyard to the south. Further afar the surroundings predominantly consist of arable land, with the village of North Warnborough situated to the northwest.
- 1.5 The approximate red line boundary of the site is shown in Figure 1 below.



*Figure 1: Approximate location of the site boundary (in red) from Google Earth Pro (Taken on: 7<sup>th</sup> June 2021)*

### **Description of Proposed Development**

- 1.6 Current proposals for the site include the internal refurbishment and redevelopment of The Bell and separate two storey garage building into flats.

### **Planning Policies**

- 1.7 The site contains grade II listed building and lies within the Odiham Conservation Area. The proposals will be assessed against policy guidance provided by the National Planning Policy Framework (NPPF, 2019) as well as relevant planning policies from the Hart District Council Local Plan 2016-2032 (2018) and the 'Odiham and North Warnborough Neighbourhood Plan 2014-2032' (2017). These policies included the following which are considered relevant to Ecology, Biodiversity and Nature Conservation:

- **Policy I2:** Green Infrastructure;
- **Policy SD1:** Sustainable Development;
- **Policy NBE10:** Design;

- **Policy NBE3:** Landscape;
- **Policy NBE4:** Thames Basin Heaths Special Protection Area; and
- **Policy NBE5:** Biodiversity;

### **Legislation**

- 1.8 Bats are covered by the following relevant legislation; the Wildlife and Countryside Act (1981) (as amended); the Countryside and Rights of Way Act, 2000; the Natural Environment and Rural Communities Act (NERC, 2006); and by the Conservation of Habitats and Species Regulations (2010).

## **2.0 Methodology**

### **Building Assessment for bats**

- 2.1 The main house on site was internally and externally assessed for its suitability for roosting bats. The remaining outbuilding was not assessed at the time of the survey. The survey was undertaken on 20<sup>th</sup> May 2021 by Natural England bat licence holder Alexia Tamblyn MA (Oxon) MSc CEnv MCIEEM FRGS and ecologist Aimee Littlechild BSc (Hons).
- 2.2 The surveyor assessed the building visually and searched for evidence such as:
- Staining beneath or around a hole caused by natural oils in bat fur.
  - Bat droppings beneath a hole, roost or resting area.
  - Bat droppings and/or insect remains beneath a feeding area.
  - Audible squeaking from within a hole.
  - Insects (especially flies) around a hole.
  - Dead bats.
- 2.3 Buildings which are considered to have a higher potential to support roosting bats would include the following:
- Agricultural buildings (e.g. farmhouses, barns and out buildings) of traditional brick or stone construction and/or with exposed beams;
  - Buildings with weatherboarding and/or hanging tiles that are within 200m of woodland and/or water;

- Pre-1960s detached buildings and structures within 200m of woodland and/or water;
- Pre-1914 buildings within 400m of woodland and/or water;
- Pre-1914 buildings with gable ends or slate roofs regardless of location;
- Buildings which are located within or immediately adjacent to woodland and/or immediately adjacent to water;
- Dutch barns or livestock buildings with a single skin roof and board and gap or Yorkshire boarding if, following a preliminary roost assessment the site appears to be particularly suited to bats.

### **Limitations**

- 2.4 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no single investigation could ensure the complete characterisation and prediction of the natural environment.

## **3.0 Results**

### **Habitat assessment**

- 3.1 The site consists of a two storey building used as a garage and storage, the Bell and outbuildings are located to the immediate south. Hardstanding was recorded in between these buildings and no biological habitats were recorded within the site perimeter.

### **Internal and external building assessment**

- 3.2 The two storey garage building on site supports external features with potential suitability for crevice dwelling bat species such as slipped, missing or curved clay tiles. Crevices were also recorded within the exposed wooden beams on the eastern elevation of the building and small gaps between the wooden beams and brickwork. Underneath the eaves, large gaps were recorded allowing access to a variety of bat species into the loft space.
- 3.3 Internally, the upper floor was divided into two sections; the eastern part contained two rooms with plasterboard type ceiling tiles creating a loft void above, with the western side open storage space with no loft void. In the eastern part, the loft void measured

approximately 5m long by 2m wide and 1m high, and some of the ceiling boards had fallen or had holes in places.

3.4 The western half, measuring approximately 3m long, 2m wide and 3m high, had an exposed roof structure and showed the southern half was lined with plastic sheeting whilst the northern elevation was unlined. While no obvious roost features were recorded, there was potential for roosting bats between the ridge and rafter wooden beams, particularly the ridge within the western half and above plaster boards in the eastern half. Evidence of bat use, consisting of five bat droppings were recorded in the southwestern corner of the building, although these were considered to be old droppings due to the amount of dust on them. Feeding remains were also recorded within a meter of the bat droppings, underneath the ridge. The droppings were collected and sent off for DNA analysis.

3.5 The DNA analysis could not identify bat DNA as it appears to have been contaminated with starling droppings, indeed evidence of birds within the roof was noted. As such, it is considered that the droppings identified are not conclusive of bat.

#### 4.0 Discussion

4.1 The development involves the internal refurbishment and redevelopment of the current building into residential flats. The works will occur on the existing building footprint and the roof structure and tiles are to be impacted. All areas of site consist of existing buildings or hard standing so no habitat will be lost during site works.

4.2 The site lies outside the 5km Special Protection Area buffer zone for Thames Basin Heaths SPA and therefore adheres to **Policy NBE4: Thames Basin Heaths SPA**.

#### Bats

4.3 Inside the garage droppings and wing cases were recorded. These were not confirmed as bat droppings, albeit it was considered that they had been contaminated by starling droppings. However, it does appear that the droppings were of some age, and only limited in number.



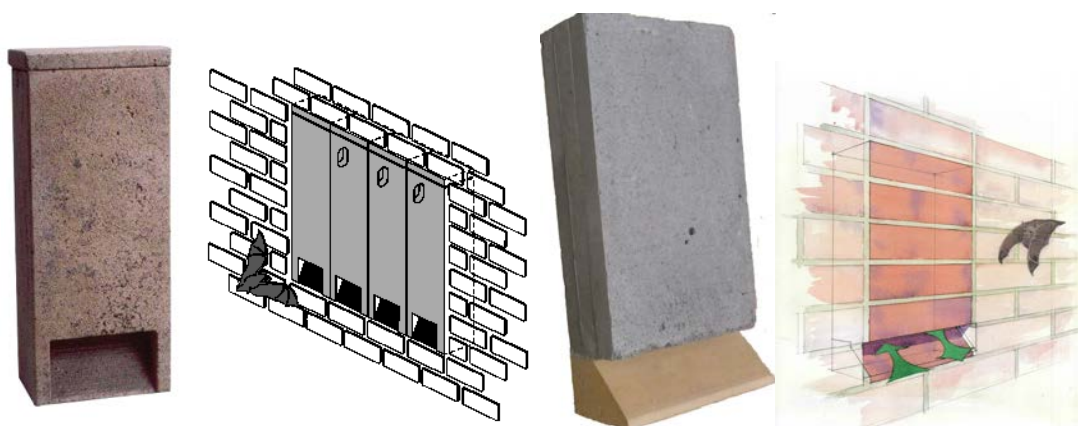
- 
- 4.4 The garage building was considered to have ‘moderate’ potential to support roosting bats, due to the external features and the internal environment. As droppings were not confirmed as bat, this can not be considered a ‘confirmed’ roost. However, as the building does support potential roosting features, further surveys have been recommended.
- 4.5 it is recommended that two dusk emergence or dawn re-entry surveys are undertaken. Further surveys may be subsequently recommended dependent on the level of bat activity on site. The aim of this survey is to determine if bats are present within this building in addition to the type and number of bats present. The results of these surveys will inform an application for a Natural England licence to legalise the loss / disturbance to bat roosts should they be present on site and appropriate mitigation.
- 4.6 Dusk emergence surveys commence at least 15 minutes before sunset until 2 hours after sunset, during which time, bats are identified and recorded. Dawn emergence surveys follow a similar methodology, commencing at least 1.5 hours before sunrise and lasting until 15 minutes after sunrise. The single survey should be conducted within the optimal time period between May and August. Bat surveys are required to be undertaken during suitable weather conditions, when conditions are relatively dry and mild with little/no wind.

***Bat Roost - Implications for Development – Appropriate Mitigation***

- 4.7 If evidence of bats is confirmed, or there is a level of uncertainty of use, further surveys should be undertaken, if recommended by a suitably qualified ecologist. This will then inform an appropriate mitigation scheme. If, after two emergence surveys, no evidence of bats is found, and the suitably qualified ecologist is happy, then no further surveys would be required. It may be recommended that areas with potential for bats are dismantled and/ or removed under ecological supervision under a method statement of works to further reduce any risks and impacts.
- 4.8 If evidence of bats is found then mitigation measures will be required and should be incorporated into the building structure. For example, bat tubes could be incorporated into the structure of the new extension to compensate for the loss of bat roosts within the external features. Recommended bat tubes include Schwegler 2FR Bat Tubes and Habitat



001 bat boxes unfaced (Figure 3). Both require no maintenance as droppings fall out of the entrance ramp. These should be placed where they will receive sunlight for most of the day as temperature is an important factor in the success of artificial bat roosts. They should also be placed as close to the eaves or gable apex as possible and not above windows to reduce the risk of cat predation.



*Figure 3: Schwegler 2FR tube (left) and Habibat 001 bat box (right)*

- 4.9 External boxes can also be used, recommended Woodstone bat Box Vivara Pro (or similar) should be used, see figure 4. The internal compartment of these bat boxes are designed for crevice roosting bats such as the common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle and myotis species which may be present in the local area. The box is made from WoodStone - a robust material composed of concrete and wood fibres, which has excellent insulating properties and provides protection from predators. This box should be installed directly under a roof edge or gutter at least 3m in height.



*Figure 4: Vivara Pro Woodstone bat box*

4.10 Any proposed lighting scheme as part of the development will have to consider bats in the surrounding area, as well as on site. All bat species are nocturnal, resting in dark conditions in the day and emerging at night to feed. Bats are known to be affected by light levels which can affect both their roosting behaviour as well as their foraging behaviour. This needs to be considered, with a sympathetic lighting scheme for the development. Recommendations include:

- Installing lighting only if there is a significant need;
- Using LED luminaries due to their lower intensity, sharp cut-off and good colour rendition – any lights with UV elements or metal halide lights should not be used;
- Lights with peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012);
- Lights with an upward light ratio of 0% and good optical control;
- Careful consideration of column height to avoid light spill;
- Any external security lights should use motion-sensors and short (1-minute) timers;
- Accessories such as baffles and hoods should be used as a last resort to reduce light spill and direct light only to where needed;

## 5.0 Conclusions

5.1 An internal and external building assessment, and a site walkover was undertaken on 20<sup>th</sup> May 2021.

- 5.2 The site was found to consist only of buildings and hardstanding. Under current proposals, site works will be limited to the redevelopment of the existing building into flats for residential use.
- 5.3 The two storey garage building on site supports external features with potential suitability for crevice dwelling bat species such as slipped, missing or curved clay tiles. Internally, there was also potential for roosting bats in the apex of the roof within the western half and above plaster boards creating a loft void in the eastern half.
- 5.4 Whilst there was no confirmed evidence of bats, the building was considered to have potential to support roosting bats. The proposed development, whilst retaining the external features, will result in the loss and replacement of the internal features and replacement and renovation work on external feature. The building is considered to have 'moderate' suitability for roosting bats and it is therefore recommended that two dusk emergence or dawn re-entry surveys are conducted between May and September. The results from these surveys will be used to produce a site-specific mitigation strategy for bats should they be present but some initial recommendations have been made within this report to be considered when designing the scheme.

## 6.0 References

Collins, J. (ed.), (2016), *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). Bat Conservation Trust, London.



Institution of Lighting Professionals., (ILP - 2018), *Guidance Note 08/18 – Bats and artificial lighting in the UK*. ILP, Rugby.



Mitchell-Jones, A.J. (2004) *Bat Mitigation Guidelines*. English Nature, Peterborough.

### *Internet resources:*

Google Maps: [www.google.co.uk/maps](http://www.google.co.uk/maps)

**Appendix 1: Photos**

<p><b>Photo 1:</b> Crevices present within the wooden beams on the eastern elevation of the two storey garage building</p>	 A close-up photograph of a brick wall. Three vertical wooden beams are attached to the wall. There are visible gaps and crevices between the beams and the bricks, particularly near the top. The bricks are reddish-brown and laid in a standard pattern. The wooden beams are weathered and greyish.
<p><b>Photo 2:</b> Showing large open gaps underneath the eaves of the two storey garage building.</p>	 A photograph showing the underside of a roof or eaves. There are large, dark, open gaps between the wooden beams and the brickwork. The bricks are visible in the foreground, and the wooden beams are dark and weathered. The background is a bright, overcast sky.

<p><b>Photo 3:</b> Showing the plaster board inside the eastern half of the two storey garage building.</p>	 A photograph showing the interior of a garage. The ceiling is made of white plasterboard, which is severely damaged and peeling away from the wooden joists above. The damage is most prominent in the upper right quadrant, where the plaster has crumbled, revealing the underlying wooden structure. The lighting is somewhat dim, with a bright spot on the left side of the ceiling.
<p><b>Photo 4:</b> Western roof space of the two storey garage building. Five bat droppings were found underneath this roof space.</p>	 A photograph looking up into the roof space of a garage. The structure consists of numerous wooden beams and joists, some of which are painted green. The roof is covered with dark, weathered wooden shingles. The lighting is dark, with a small light source visible in the lower right corner, casting a glow on the wooden structure.



**Photo 5:**  
Internal roof  
space  
towards the  
eastern end  
of the two  
storey  
garage  
building.



**Photo 6:**  
Butterfly  
feeding  
remains  
recorded  
with the  
western half  
of the two  
storey  
garage  
building.



## **Appendix 2: DNA Results**



Folio No: E10565  
 Report No: 1  
 Purchase Order: HAM9471  
 Client: THE ECOLOGY  
 PARTNERSHIP  
 Contact: Alexia Tamblyn, Chris  
 Jennings

## TECHNICAL REPORT

### ANALYSIS OF BAT DROPPINGS FOR SPECIES OF ORIGIN IDENTIFICATION

#### SUMMARY

The droppings of bats contain small amounts of DNA belonging to the organism from which they originated. By analysing droppings collected from a bat roost or colony for the presence of DNA, a robust identification of the species present can be made. Recent advancements in molecular methods including PCR (polymerase chain reaction) and DNA sequencing mean that 92% of bat species worldwide can be identified including all 17 UK resident bat species.

#### RESULTS

**Date sample received at Laboratory:** 24/05/2021  
**Date Reported:** 08/06/2021  
**Matters Affecting Results:** None

Lab Sample ID.	Site Name	O/S Reference	Genetic Sequence	Common Name	Result	Sequence Similarity
E10565	The Bell	-	NATCATAATCGGAGGCTTCG GGACTGACTAGTCCCCCTAA TAATCGGAGCCCCAGACATA GCATTCCCTCGAATAAACAA CATAAGCTTCTGACTTCTCC CCCCATCCTTCTACTACTC CTAGCCTCCTTACAGTCGA AGCAGGGGTTGGAACAGGCT GAACTGTCTACCCCTCTG GCTGGAACCTAGCC	Sturnus vulgaris/Commo n starling		98.46%

If you have any questions regarding results, please contact us: [ForensicEcology@surescreen.com](mailto:ForensicEcology@surescreen.com)

**Reported by:** Gabriela Danickova

**Approved by:** Chris Troth



## **METHODOLOGY**

Once samples have arrived in the laboratory, a single bat dropping is selected for its suitability (freshness and size). The DNA is then isolated using a commercial DNA extraction kit. Using PCR, bat DNA (if present within the sample) is amplified using bat DNA-specific molecular markers designed to amplify a short fragment of the mitochondrial gene. If amplification is successful, the resulting DNA sequence is revealed using a process known as Sanger Sequencing in order to obtain the genetic sequence. The sequence results are aligned against a library of known bat reference sequences using bioinformatics software, which enables us to determine which species the extracted DNA matches with, informing the species identity and sequence similarity (%).

If the initial analysis is unsuccessful, the entire process is repeated up to two additional times with fresh reserve droppings. If no DNA is detected after three attempts, we can be confident that any further analysis of the sample will likely also fail to result in species identification.

## **INTERPRETATION**

**Genetic Sequence:** The unique DNA sequence obtained from the sample.

**Sequence Similarity:** How closely matched the DNA sequence from your sample is to the sequences within our reference database. This can be interpreted as a score of result accuracy, with the maximum score of 100% indicating an exact match of dropping to the indicated species' reference sequence. Lower scores (80-99%) indicate some variation between the sample and reference sequence, likely due to natural variation between individual genetic sequences and/or systematic variations generated through the sequencing process. Scores below 80% similarity should be interpreted with care and can indicate part degraded or part contaminated samples.

**Inconclusive Result:**

**Degraded sample:**  
DNA degraded, unable to determine species identification due to degradation of sample DNA. This can happen either before sample collection (old droppings, exposure to UV etc.) or after sample collection if stored for long periods before analysis or not handled correctly.

**Inhibited/contaminated sample:**  
Unable to determine species identity due to contamination or the suspected presence of large quantities of PCR inhibitors. Contamination sources can come from other species which come into contact with droppings, human contamination during sample collection.

**Alternative Result:** Sometimes, other mammalian species such as rodents are detected. We find this to be a common occurrence as some bat droppings can be similar in appearance to rodent droppings. Although sometimes unexpected, repeat analyses in these cases would likely return the same results.



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Date: 09/06/2021