

Surveyor:
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Licence No:
S086667/1

Survey for Bats



September 2020

Client:
Mr & Mrs Pugh

Survey Site:
11 Hen Felin
Gellinudd
Pontardawe
SA8 3HN (Grid Reference SN 738 044)

Prepared by:
Nicholas Bunn (November 2020)

Signed: 

Executive Summary

A bat survey was carried out at the above property in September 2020 during which no evidence of a bat roost or likelihood of a bat roost was found.

The main dwelling and detached garage were assessed as very low potential for bat roosts, with no evidence of bat occupation found in the roof void and very little in the way of crevice space noted from the outside with no bats emerging from the property during the evening survey.

Two visits were made to the property and it was determined, based on lack of evidence, that neither the garage or the main dwelling has been use by bats as a roosting place.

A small accumulation of droppings were found in the garage and as a precaution were collected and sent to laboratory for DNA analysis. This was done twice with two separate samples and a DNA sequence for bats was not found for either sample. The certificates are appended to this report.

No evidence of nesting birds was found at the property.

No further action is therefore necessary in respect of licensing as the property is deemed as having a very low potential for bat roosts.

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1. Introduction

1.1 Purpose of Survey

The survey was requested and carried out to determine if the property and its current structure/features are being used by bats as a roosting place and if so to develop a mitigation plan to enable bats to re-use the updated buildings post development.

1.2 Proposed Development

The development entails a demolition of the existing garage which is to be replaced by a new garage/store slightly to the north of its current position to make way for an extension to the north-western elevation of the main dwelling.

1.3 Site Context

The property is situated at the northern edge of the village of Gellinudd approximately 1 km west of the centre of Pontardawe town centre which lies in the Swansea Valley. The survey site is primarily rural and surrounded by a mixture of mature woodland and pasture. The surrounding countryside presents ideal foraging opportunities for bats with Mynydd Marchywel and the associated Crynant Forest 1 km to the west of the site. The nearest significant water bodies are the River Tawe and disused Swansea Canal, both approximately 200 - 300 m west of the site.



Figure 1: Survey Location (arrowed)

1.4 Survey Details

The survey consisted of two main activities. The first was a physical examination of the site (main dwelling and detached garage) for bats and evidence of their presence. The second involved monitoring for live bats either using the internal spaces, leaving the property or returning to the property. Hand held bat detectors and infra-red camera were deployed during the activity survey visits with the positions plotted in the appended Survey Site Layout. The roof void of the main dwelling was inspected and it was noted that no evidence of bat use was evident in the form of guano, assemblages of moth wings, fur staining or live bats.

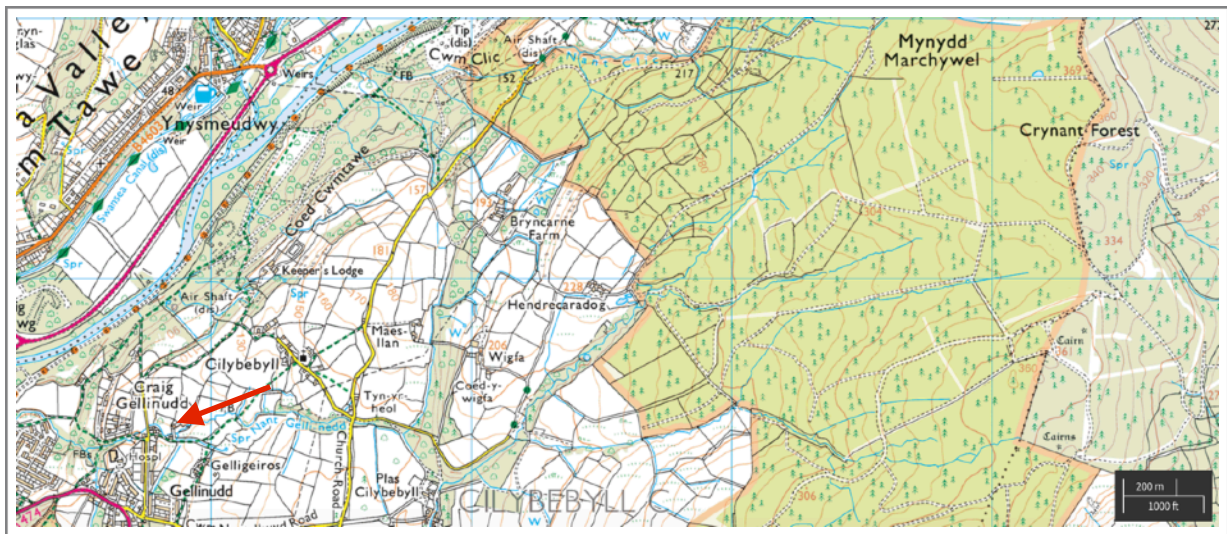


Figure 2: Survey Location (arrowed) in the wider context

1.5 Previous Reports

No previous surveys relating to this property were made available, it is therefore presumed that none have been carried out.

2. Methodology

2.1 Desk Study

The National Biodiversity Network (NBN Atlas) was perused for local records of species within a 2 km buffer and 11 species of bat have been recorded within the buffer (See section 3 for details)

2.2 Survey Methodology & Details

Survey Personnel:

- **Nicholas Bunn:** Licensed surveyor who has many years experience of bat conservation work

Equipment used:

- 2 Anabat Walkabout bat detectors, for hand held live recording
- High powered LED LENSER hand held torch (P17.2) and head torch (H14.2)
- Canon XA30 camera with infra-red capability
- Infra-red lamps
- Ladders
- Close focus binoculars
- Anemometer (Climemet CM2030) to record wind speed and temperature
- Anabatinsight & AnalookW software on PC to analyse bat sonograms recorded during survey

The survey was designed based on the geographical setting, i.e. in a rural location with nearby woodlands and water bodies.

2.3 Main dwelling inspection and evening emergence survey 8th Sept 2020

Table 1: Environmental data

Time on site	Temperature	Wind Speed	Cloud Cover	Sunset
18:30 - 21:15	14°C	Very Light	100% and occasional drizzle	19:44

The building was fully inspected, internally and then externally, the following observations were made:

- No opportunities were available for bats to enter the internal habitable parts of the building either on the ground floor or the first floor (see photo's 1 & 2)
- No evidence of bat use was found in the roof void (see photo 5)

- The small garage adjacent to the north-west elevation of the house was inspected internally and externally with no evidence of bat use found. A small accumulation of guano was noted and collected off various surfaces inside (see photo's 3 & 4) the garage



Photo 1: South-west facing elevation of the main dwelling



Photo 2: North-east and north-west facing elevations of the main dwelling with lean to



Photo 3: Detached garage



Photo 4: Guano inside garage (circled)



Photo 5: Shallow roof void of main dwelling



Photo 6: Garage roof

2.4 Garage inspection and evening emergence survey 10th Sept 2020

Table 2: Environmental data

Time on site	Temperature	Wind Speed	Cloud Cover	Sunset
19:00 - 21:15	17°C	No significant wind	50% dry and humid	19:40

- All the internal/external observations of the 8th September visit still applied on this second visit
- No fresh guano was noted in the garage
- The east and north elevations of the garage are obscured by hedgerow and overgrowth respectively



Photo 7: West facing elevation of garage

- Noctule bats (*Nyctalus noctula*), soprano pipistrelles (*Pipistrellus pipistrellus*), common pipistrelle (*Pipistrellus pipistrellus*), brown long-eared (*Plecotus auritus*) and *Myotis Sp.* were recorded/observed foraging around the property and nearby mature trees during the survey.

3. Results

3.1 Ecological Appraisal (Desk Study)

The National Biodiversity Network (NBN Atlas) was perused for local records of species within a 2 km buffer and 11 species of bat have been recorded within the buffer and the emboldened examples were observed/recorded at the site as follows:

- **Noctule (*Nyctalus noctula*)**
- **Soprano pipistrelle (*Pipistrellus pygmaeus*)**
- **Common pipistrelle (*Pipistrellus pipistrellus*)**
- **Brown long-eared (*Plecotus auritus*)**
- ***Myotis* Sp.**
- Serotine (*Epseticus serotinus*)
- Daubenton's (*Myotis daubentonii*)
- Natterer's (*Myotis nattereri*)
- Whiskered (*Myotis mystacinus*)
- Leisler's (*Nyctalus leisleri*)
- Greater horseshoe (*Rhinolophus ferrumequinum*)

3.2 Ecological Appraisal (Fieldwork)

Five species of bat were recorded commuting/foraging around the house as shown above. None were seen entering or leaving either the garage or main dwelling.

3.3 Preliminary Roost Assessment

The property surveyed comprises a mid 19th C domestic property of traditional structure and natural slate pitched roof with a sloping roof section to the rear. There is also a single storey garage with composite corrugated roof and timber walls immediately to the west of the main dwelling

The following summarises the pertinent features that have been inspected as part of this survey:

- The walls/roof of the main dwelling are in good order with very few opportunities for bats to enter. No bats were seen leaving or entering the main dwelling
- Generally speaking, the soffits are tight to the walls with very few roosting opportunities for bats
- No other signs of bat use were found during the visits to the property
- Guano was found on surfaces inside the garage (proved not to be bat guano by laboratory analysis)

3.4 Roost Characterisation

Due to the configuration of the main dwelling and the garage and the findings of the inspections, the property is deemed very low risk for potential bat roosts. No evidence was found to indicate that either building is or has been used by bats.

3.5 Bat Activity Summary

Several bats were seen foraging/commuting overhead, from approximately 5 minutes after sunset on both evenings. The species recorded were common pipistrelles (*Pipistrellus pipistrellus*), soprano pipistrelles (*Pipistrellus pygmaeus*) brown long eared bat (*Plecotus auritus*), *Myotis Sp.* and noctules (*Nyctalus noctula*)

4. Discussion

4.1 Data Evaluation

The following conclusions are based on the evidence found during the two visits to site:

- Neither the main dwelling or the garage present roosting opportunities for bats in its current state
- Guano was found in the garage with only a handful of stools present and were collected and sent to laboratory for DNA analysis and were confirmed not to be deposited by bats, although a number of the stools were bat like in their morphology, however rodent droppings can be very similar
- No bats were seen leaving either building during the evening surveys

4.2 Limitations of Survey

There were no specific limitations encountered during the undertaking of this survey. The roof was not directly accessed but viewed with binoculars from the ground to identify potential roosting locations

4.3 Relevant EU & UK Legislation

Planners and Natural Resources Wales will require that the site maintains, restores or creates such features on completion of the work that will ensure continued use of the location by bats, and that the status of the species is not jeopardised if they consent to the development proceeding.

All bats and their roosts are protected by various legislation including:

- 1. The Wildlife and Countryside Act (1981) (as amended)**
- 2. The Conservation of Habitats and Species Regulations (2017) (as amended)**

This offers comprehensive protection and the following section applies to planning:

3.2 Regulation 9(5) provides that “a competent authority, in exercising any of their functions, must have regard to the requirements of the Habitats Directive so far as they may be affected by the exercise of those functions. A Planning Authority is a competent authority for the purposes of these Regulations and is exercising a function in deciding whether or not to grant planning permission.”

Under these laws it is an offence to deliberately kill or injure a bat, to disturb a bat or to damage, destroy or block access to a roost. Bat roosts are protected under these laws whether the animals are present at the time of survey or not. Natural Resources Wales are empowered to issue licences to carry out work to bat roosts for reasons of overriding public interest.

Under the Wildlife and Countryside Act 1981, all nesting birds and their nests are protected. Once a bird places a single piece of material then it constitutes a nest. It is then an offence to cause damage to the bird, nest, eggs or chicks and immediate habitat which is likely to result in damage by causing the bird to desert its nest. This covers all bird species, with a small number of exceptions (pest species which can be controlled by special license).

5. Impact Assessment

5.1 Discussion

Even though the current configuration of the buildings does not offer bats any roosting spaces, it would be desirable, but not compulsory, to encourage bats to use the building post development by incorporating suitable accommodation for bats.

Crevices dwellers in general will typically find roosting opportunities at gable end apexes so long as suitable gaps are present. Other areas are also used i.e. behind barge boards, within soffits, beneath roof tiles and ridge tiles, around chimneys, etc., this list is not exhaustive but illustrates the diversity of locations within a building that bats will use for roosting purposes.

It will not be practical to incorporate all of these features but one or more of the following would be desirable to enhance the potential for bats to roost in the property post development:

- Gaps behind hanging tiles and/or weather boarding.
- Small gaps behind fascia boards and entrances to soffits.
- Specialist roof tiles designed to allow bats to crawl into the void between roof tile and felt.
- Specialist bat bricks to be incorporated into walls at suitable height.
- Mortar free end ridge tiles to allow access within the gaps.
- Bat boxes may be placed on the building itself or nearby trees.

5.2 Considerations for External Lighting (guidance only)

External lights can delay the timing and prolong the duration of emergence for some species. External lighting reduced the number of *Pipistrellus pygmaeus* emerging from roosts (Downs et al. 2003)¹.

¹ Downs, N.C., Beaton, V., Guest, J., Polanski, J., Robinson, S.L. & Racey, P.A. (2003) The effects of illuminating the roost entrance on the emergence behaviour of *Pipistrellus pygmaeus*. *Biological Conservation*, 111, 247-252.

Bats may miss the peak in abundance of insects that occurs at dusk, thereby reducing the quality of foraging time, impacting the fitness of individuals and the roost as a whole.

Lighting which spills directly into a roost can cause roost abandonment or death and should be avoided. Such disturbance would constitute an offence.

Illumination of a roost entrance can have consequences for predation and connectivity. Bats may be forced to use alternative exits if available. Alternative exits may be suboptimal in terms of predation risk. Alternative exits may increase predation risk due to their location in relation to the surrounding landscape (e.g., bats may be forced to fly across open areas or roads once leaving the exit) or due to their situation (e.g., located low to the ground or near a window sill enabling easy access for predators such as domestic cats)². External lighting should be kept to a minimum and not be directed at roost entrances or emergence pathways.

Lighting should be positioned below the horizontal plane of bat emergence points and have Passive Infra Red (PIR) triggers to minimise illumination.

5.3 Notes on Roofing Membranes (guidance only)

When bats and breathable roofing membranes come together, anecdotal evidence suggests it may not end well for either party. There have been some reports of bats becoming entangled in membranes and damage to membranes caused by bats. When/if roofing felt is to be installed in a roof that is used by bats then the use of bituminous roofing felt is encouraged. Bituminous felt is dark-coloured, with a rough surface that bats can grip onto and will help maintain a suitable and safe environment for bats within the roof void/structure.

Breathable Roofing Membranes (BRMs), made from spun-bond polypropylene/polyethylene filaments, should not be installed into a roof that is used by bats. The long fibres that make up BRMs have a tendency to be pulled out by roosting bats and pose an entanglement threat to the bats.

BRMs are not obligatory under any Building Regulations. Ventilation, regardless of the roofing felt or BRM used, is still required (see British Standard BS 5250:2011).

² Stone, E.L. (2013) Bats and lighting: Overview of current evidence and mitigation

6. Recommendations

6.1 Further Surveys

No further action is necessary with respect to bat monitoring of this property based on the findings of this survey.

6.2 EPS License Requirements

No licensing is required with regard to bats at this property.

Appendix 1: Survey Site Layout

Site Layout

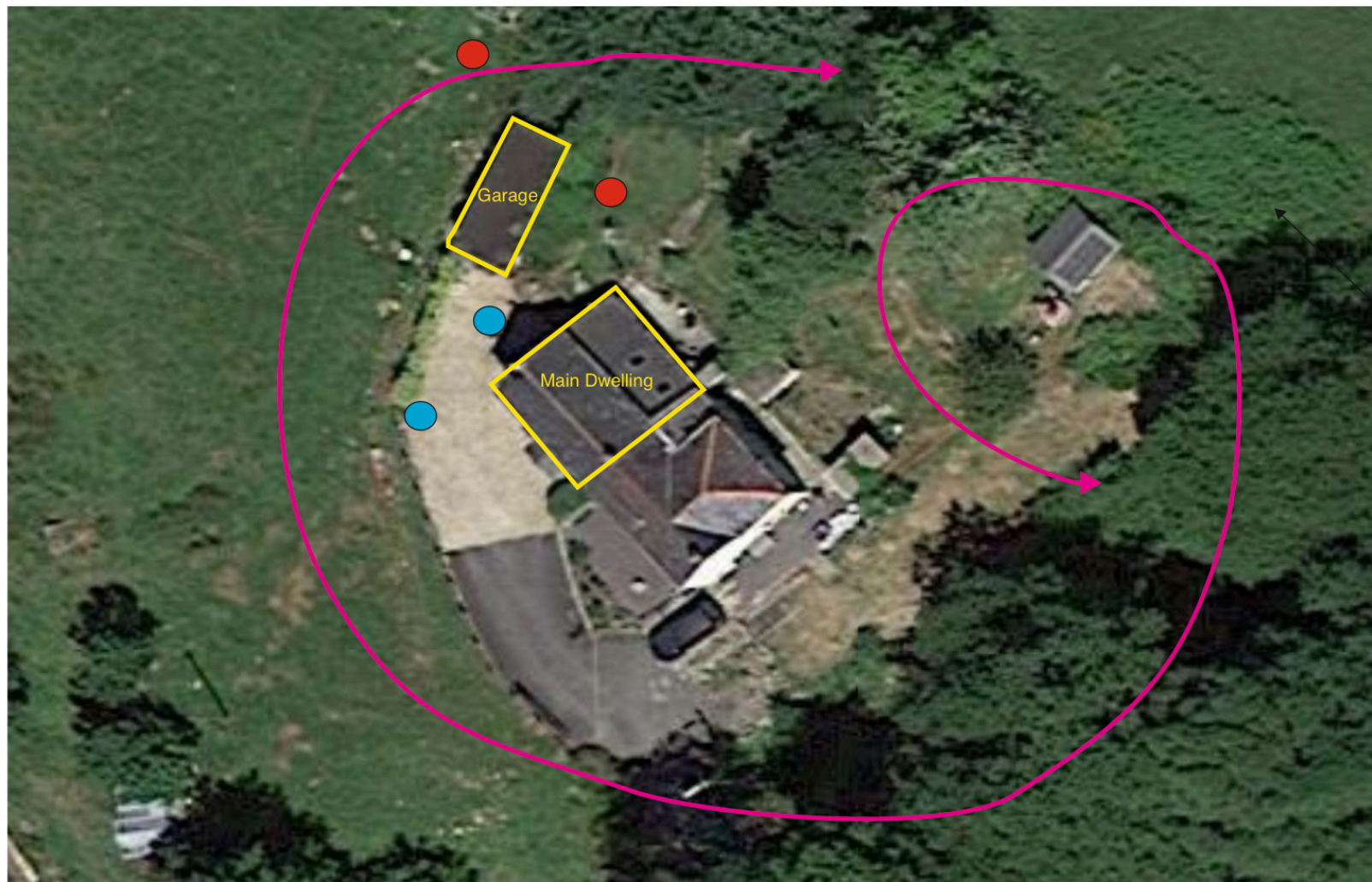


-  Infra-red camera positions
-  Surveyor positions
-  Bat foraging direction
-  Survey building outline

Location:

11 Hen Felin
Gellinudd
Pontardawe
SA8 3HN

Grid Ref: SN 738 044



10m

(Scale Bar Approximate)

Appendix 2: DNA Analysis Certificates

2 October 20

Re: Bat Identification Results for Nicholas Bunn, Bat and Barn Owl Surveying Services

Bat job number 15876, received 15 September 2020
Sample labelled: Unlabelled sample

PCR amplification unsuccessful.

Unfortunately, our analysis of this sample failed. We normally re-attempt the analysis up to three times depending on the availability of sample material sent. There are usually three possible reasons for sample failure:

1. DNA degradation has occurred to an extent beyond which we can detect it using PCR technology.
2. The sample might have an unusually high content of inhibiting substances causing enzymatic failure in the analysis.
3. The sample might not have been the target species.

Without further data we are not in a position to judge which of these possibilities is more likely correct. We are sorry to not have been able to identify this sample for you, and we make no charge for the attempt.

Best regards,

Robin Allaby
Associate Professor.

The results and conclusions in this report are based on an investigation of mtDNA sequence analysis. The results obtained have been reported with accuracy. The interpretation represents the most probable conclusion for the DNA sequence obtained rather than the sample provided given current levels of species data. It should be borne in mind that different circumstances might produce different results. Therefore, care must be taken with interpretation of the results especially if they are used as the basis for commercial recommendations.

Professor Robin Allaby

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2 November 20

Re: Bat Identification Results for Nicholas Bunn, Bat and Barn Owl Surveying Services

Bat job number 16079, received 22 October 2020

Sample labelled: Unlabelled sample

PCR amplification unsuccessful.

Unfortunately, our analysis of this sample failed. We normally re-attempt the analysis up to three times depending on the availability of sample material sent. There are usually three possible reasons for sample failure:

1. DNA degradation has occurred to an extent beyond which we can detect it using PCR technology.
2. The sample might have an unusually high content of inhibiting substances causing enzymatic failure in the analysis.
3. The sample might not have been the target species.

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