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**BAT PRESENCE / ABSENCE SURVEY**

**At**

**The Boat Inn**

Erbistock

Wrexham

LL13 0DL

**NGR: (SJ) 335505 341321**

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|---------------|----------------------------------|
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A handwritten signature in black ink, appearing to read 'Toby Hart', is positioned below the 'Approved by:' line.

|                |                           |
|----------------|---------------------------|
| Date:          | 7 <sup>th</sup> June 2019 |
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## EXECUTIVE SUMMARY

A bat presence / absence survey was undertaken at the Boat Inn, Erbistock, by United Environmental Services (UES) Ltd in May 2019.

The objective of this survey was to establish whether or not bats are using the buildings on site to roost, and if so to assess the type and importance of roosts in order to inform the planning process. The surveys were carried out to recognised guidelines, timings and weather conditions where possible, with particular reference to Bat Conservation Trust (BCT) publication.

The proposed development involves the renovation of The Boat Inn to return it to use as a public house. The Boat Inn is a Grade II listed building, formerly two 17<sup>th</sup> Century buildings remodelled in the 19<sup>th</sup> and late 20<sup>th</sup> Century. The proposed renovation works include renovation and remodelling of the interior of all buildings. Maintenance work is also required to the exterior of The Boat Inn to ensure it is water tight and fit for purpose. This includes the re-roofing of Building C and re-pointing of brickwork to building A. One new building will be constructed immediately north of the existing buildings. The new building will be detached from the existing buildings and will serve as the new kitchen.

The Boat Inn is situated in an area which provides high quality habitat for bats. The network of hedgerow and tree-lined fields, riparian vegetation along the River Dee and woodland copses will all provide good foraging opportunities, whilst the mature trees, agricultural buildings and villages will provide an abundance of suitable roosting opportunities. Furthermore, the connectivity between habitats in the local area is good due to the presence of hedgerows and tree lines and river corridor.

The buildings on site provide a number of opportunities for roosting bats, with external potential roosting features (PRFs) present such as gaps under raised roof tiles, gaps under ridge tiles, gaps under lead flashing, a single gap under the eaves and gaps in the stonework.

When undertaking the emergence survey on 2<sup>nd</sup> May 2019, it was discovered that the re-roofing works had already started on the northern aspect of building C (see Appendix 1) as part of the renovation works. The applicant was advised by UES to cease works, and the works have been put on hold until the completion of the bat surveys and obtaining of planning approval, Building C is now considered to present negligible potential for roosting bats.

Four species of bat were recorded during the survey: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula* and Daubenton's bat *Myotis daubentonii*.

A total of four roosts were found within the buildings during the surveys. Based on the survey results gathered, the site appears to be used by relatively low numbers of soprano pipistrelle bats in a day roosting capacity during the summer. No evidence was found to suggest that a higher conservation status roost, such as a maternity roost, could be present within the buildings. It is considered unlikely that bats are using the building for hibernation purposes.

**Based on nature of the proposed works, having discussed them on site with the contractors present, and the locations of the bat roosts, UES believes that direct impacts on bats are extremely unlikely to occur as a result of the works and that the potential for indirect disturbance impacts can be minimised to insignificant levels through the implementation of a method statement, which is included in section 4.3.1 of this report. The method statement includes the requirement for a further pre-**



**commencement bat survey to confirm roosting locations at that time (mitigating for the roost-switching soprano pipistrelles) and to direct works accordingly. If additional roosts are identified during this survey, works will cease, and further survey and mitigation work may be required to characterise new roosts and ensure that no impacts will be imposed on bats. If impacts cannot be avoided, a mitigation licence must first be obtained from NRW prior to the works in that area taking place.**

**Due to the presence of nesting birds in the buildings, works on site will also need to be mindful of breeding bird legislation, as detailed in section 4.3.2.**

This report should be read in conjunction with appendices 1 to 6, which provide visual representations of the survey results and statutory and planning context.

# 1 INTRODUCTION

## 1.1 Author, surveyors and qualifications

This report is compiled and written by Emily Clark BSc PGdip ACIEEM, UES Ecologist. Other surveyors include;

- Toby Hart BSc MCIEEM PIEMA, UES Managing Director. Toby is licensed by Natural Resources Wales to disturb, take and handle all species of bats under licence number 75479a:OTH:CSAB:2017.
- Suzie Whitnall BSc MSc, UES Assistant Ecologist. Suzie is licensed by Natural Resources Wales to disturb, take and handle all species of bats under licence number 75161:OTH:CSAB:2017.

All surveyors have the knowledge, skills and experience identified within CIEEM's "Competencies for Species Survey: Bats" (2013), or were under the supervision of a surveyor with the required competencies.

This report has been produced as an interim report to detail results known so far, two additional surveys will be undertaken, as recommended in BCT guidance (Collins, 2016) and a final report will be produced.

## 1.2 Survey objectives

UES was commissioned in April 2019 to conduct site surveys which include the following activities:

- Conduct internal and external building inspections to look for field signs of bats
- Confirm bat presence or likely absence by conducting emergence and re-entry surveys of the buildings
- Assess the type and importance of the roost(s), if present
- Recommend appropriate mitigation and compensation, if applicable

## 1.3 Proposed development

The proposed development involves the renovation of The Boat Inn to return it to use as a public house. The Boat Inn is a Grade II listed building, formerly two 17<sup>th</sup> Century buildings remodelled in the 19<sup>th</sup> and late 20<sup>th</sup> Century. At present, the public house comprises two two-storey buildings (**A** and **B**), a single storey modern extension (**C**) and a single storey connecting section (**D**). See Appendix 1 – Site Plan. The proposed renovation works include renovation and remodelling of the interior of all buildings and removing the kitchen to create additional seating. The first floor of building B is currently a small one bedroom flat, which will be remodelled to remove the kitchen and living area and will be renovated to provide one bedroom and bathroom accommodation for staff or guests.

Maintenance work is required to the exterior of The Boat Inn to ensure it is water tight and fit for purpose. This includes the re-roofing of building C and re-pointing of brick work to building A.



One new building will be constructed immediately north of the existing buildings. The new building will be detached from the existing buildings and will serve as the new kitchen.

#### **1.4 Structure of the report**

This report sets out the methodology, results, and recommendations in relation to a specific bat survey. Recommendations are in line with statutory legislation and planning policy objectives.

The report should be read in conjunction with the bat scoping survey report for the site (March 2019, ref: UES02603/02) and appendices 1 to 6, which give visual representations of the survey results.



## 2 METHODOLOGY

### 2.1 General

All surveys were carried out to recognised guidelines, timings and weather conditions, with particular reference to Natural England and BCT publications (see references for further information).

The habitats on site and in the surrounding area were assessed during a walkover survey and through studying aerial photographs, in order to gauge their suitability to support roosting, foraging and commuting bats.

### 2.2 Building inspections

The buildings on site were searched both externally and internally for bat presence and features associated with bat activity, as detailed in BCT guidance (Collins, 2016).

#### 2.2.1 External inspection

The external inspections of the buildings were carried out from ground level using binoculars, and also using ladders and an endoscope to investigate suitable gaps. The objective of the survey was to find and record any signs of bat use, for example:

- Bat droppings
- Feeding remains
- Grease staining / urine marks
- Corpses or skeletons

The bat signs listed above are visible from the outside of a building. The following areas were searched, where present:

- |                           |                                                 |
|---------------------------|-------------------------------------------------|
| • Roof and ridge tiles    | • Gaps under felt                               |
| • Lead flashing           | • Cracks / holes in woodwork or behind cladding |
| • Eaves                   | • Gaps in brickwork and mortar                  |
| • Boxed soffits           | • Air bricks                                    |
| • Fascia and barge boards | • Grills                                        |
| • Window sills and panes  | • Vents                                         |
| • Walls                   |                                                 |

#### 2.2.2 Internal inspection

The internal inspections covered all of the accessible rooms and roof spaces within the buildings.

Bats regularly utilise specific areas within roof spaces, which were searched for any field signs of bats using high-powered torches and an endoscope, where considered necessary by the licenced ecologist. The following features were searched, where present:

- Roof beams and junctions
- Gaps under felt

- Dividing walls
- Chimney breasts
- Gaps in brickwork and mortar
- Cracks / holes in woodwork
- Floor or other surfaces on which droppings could accumulate

## 2.3 Emergence and re-entry surveys

Potential roost access points were identified during the building inspections. These points were covered by a surveyor during the dusk emergence and dawn re-entry periods.

Bat echolocation, flight and habitat characteristics were recorded where possible, in order to determine the species. The level and type of bat activity was also recorded to establish how bats are using the site.

### 2.3.1 Equipment

BATLOGGER M bat detectors and recorders were used during the surveys. This device records bat echolocation calls across the full spectrum, with a sensitivity range of 10 – 150 kHz. The integrated heterodyne live monitoring also allows the observer to hear the echolocation calls in real time, with automatic tuning. The recordings are individually time/date, GPS and temperature stamped, and are of high enough quality to produce time expansion quality sonograms.

An Anabat Walkabout bat detector was used during the surveys. This allowed the observer to hear bat echolocation calls and see the sonograms in real time, aiding identification. All registrations were automatically recorded onto a memory card and time/date stamped. The device can record and display both zero crossing and full spectrum bat echolocation calls and has a built-in GPS and mapping system.

### 2.3.2 Weather conditions

*Table 1 - Weather conditions and survey timings*

| DATE     | SURVEY TYPE | TIMINGS       | SUNSET / SUNRISE | TEMP. | WIND  | RAIN | CLOUD COVER |
|----------|-------------|---------------|------------------|-------|-------|------|-------------|
| 02/05/19 | Emergence   | 20:28 – 22:38 | 20:43            | 12°C  | Still | Dry  | 50%         |
| 24/05/19 | Re-entry    | 03:30 – 05:15 | 05:00            | 9°C   | Still | Dry  | 50%         |

## 2.4 Survey limitations

When undertaking the emergence survey on 2<sup>nd</sup> May 2019, it was discovered that the re-roofing works had already started on the northern aspect of building C (see Appendix 1) as part of the renovation works. The applicant was advised by UES to cease works, and the works have been put on hold until the completion of the bat surveys and obtaining of planning approval. Building C is now considered to present negligible potential for roosting bats.



A dawn re-entry survey was originally scheduled for 3<sup>rd</sup> May 2019, however due to cold overnight temperatures this could not be carried out. This limitation has been taken into account when preparing the conclusions and recommendations following the survey.

## 3 RESULTS

### 3.1 Habitat assessment

The Boat Inn is located in Erbistock, a rural village on the outskirts of Wrexham. Habitats within the curtilage of the proposed development site include the former public house buildings surrounded by areas of hardstanding, including a back yard, driveway and car park, amenity grassland, scrub and scattered mature trees. The southern boundary lies on the Afon Dyfrdwy / River Dee SSSI<sup>1</sup>.

The immediate surrounding area comprises the Grade II listed St Hillary's Church directly east, the River Dee and associated riparian vegetation, woodland including Llan-y-Cefan wood, farmland with associated farm buildings, as well as hedgerow and tree-lined fields. These habitats provide highly suitable foraging, commuting and roosting habitats for bats.

The wider surrounding area (within 2km) is similar in composition with a rural landscape comprising a network of hedgerow and tree-lined fields, woodland, and the River Dee. These habitats provide excellent foraging, commuting and roosting opportunities.

In summary, the local area surrounding The Boat Inn is of high quality for foraging, commuting and roosting bats.

### 3.2 Building inspections

The buildings on site were searched both externally and internally for bat presence and features associated with bat activity, as detailed in BCT guidance (Collins, 2016). This was conducted on 4<sup>th</sup> February 2019 by Suzie Whitnall as part of UES' bat scoping survey. An additional internal inspection was conducted on 24<sup>th</sup> May 2019 by Toby Hart.

#### 3.2.1 External inspection

The Boat Inn is a Grade II listed building, formerly two 17<sup>th</sup> Century buildings remodelled in 19<sup>th</sup> and late 20<sup>th</sup> Century. At present, the former public house comprises two two-storey buildings (**A** and **B**), a single storey modern extension (**C**) and single storey connecting section (**D**). See Appendix 1 - Aerials for locations. These buildings are summarised in the below paragraphs.

**A.** The former cottage has a sandstone wall and pitched, slate roof construction (See Appendix 3 – Photo 1). The roof contains two dormers with hipped roofs and three chimneys. The roof tiles are in a relatively good condition, however there are a couple of PRFs under raised lead flashing and gaps in the ridge tiles (Photo 2). The roof overhangs at the eaves with a small gap present at the eastern corner leading into a small cavity under the tiles (Photo 3).

There are two gable ends (west and east) which contain no suitable features due to well-sealed end tiles and well-pointed stonework.

To the rear (north) there are a couple of 19<sup>th</sup> and 20<sup>th</sup> Century extensions (Photo 4), including a two-storey brick built section and single storey sections with breezeblock and concrete walls and flat roof. No PRFs were identified in these sections.

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<sup>1</sup> Site of Special Scientific Interest



The stone work on the southern elevation contains several gaps between the stones which lead into small cavities (Photo 5). A number of the cavities, where accessible, were closely inspected with the use of an endoscope. Evidence of bird nests and mice were found, however there are no current field signs of bats.

**B.** The two-storey 17<sup>th</sup> Century building has a sandstone wall and pitched, slate roof construction (Photos 6 and 7). The roof and slate tiles are generally in good condition with no raised, slipped or missing tiles.

There are two gable ends (north and south) which contain no suitable features due to well-sealed end tiles and well-pointed stonework.

The stonework is well-pointed and window frames well-sealed with no gaps.

**C.** The single storey modern extension is connected to the western wall of Building B (Photos 6 and 8). It has a brick wall with pitched roof construction. The roof is clad with slate tiles which is in poor condition with a number of raised and slipped tiles and gaps at the ridge, particularly on the northern aspect (Photo 9).

There are a couple of bay windows with flat roofs on the front (south) elevation and a single storey extension to the rear (north). The extension has a felted flat roof with timber barge board which is slightly raised on the northern aspect. No evidence of bats was found under the gap.

**D.** A single storey section connects Building A and B (Photo 10). It has a stone wall with pitched glass roof. The roof overhangs at the eaves with a large timber boxed soffit over the entrance. No suitable gaps were present at the eaves.

The stonework is in good condition and well-pointed.

In summary, the Boat Inn contains a number of external PRFs, including:

- Gaps in stonework of Building A
- Gaps under lead flashing and roof tiles of Building A
- Gap in the eastern corner under the eaves of Building A
- Gaps under roof and ridge tiles of Building C

**No bat droppings or other field signs of bats were found during the external building inspection.**

### **3.2.2 Internal inspection**

**A.** The southern section of the former cottage has been converted into office and storage space for the public house (Photo 11), as such, most of the ceiling is vaulted and no loft space is present. There is a small loft space remaining in the northern section of the building, this is trussed and lined with bitumen felt and insulation. No bats or evidence of bats was identified during the internal inspection.

**B** The first floor has been converted into a small one bedroom flat. There is a small loft space that has been used for storage. The roof is pitched and trussed, lined with bitumen felt and blanket loft insulation. The loft space is cluttered and small and considered unsuitable for loft-dwelling species but is suitable for crevice dwelling bats.



**C and D.** There are no loft spaces present (Photos 12 and 13).

**No bat droppings or other field signs of bats were found during the internal building inspection.**

### 3.3 Emergence and re-entry surveys

Table 2 – Survey results

| DATE     | SURVEY TYPE                                                                                   | SPECIES             | NUMBER OF INDIVIDUALS | ROOST LOCATION                            | ACCESS POINT                                                                                                                                                                                                                       | TIMINGS |
|----------|-----------------------------------------------------------------------------------------------|---------------------|-----------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| 02/05/19 | Emergence (focusing on southern aspect of buildings A-D)                                      | Soprano pipistrelle | 5                     | Southern aspect of building A ("Roost 1") | Small gap in the brick work on southern elevation (grid reference; SJ 35519 41315).                                                                                                                                                | 20:45   |
| 24/05/19 | Re-entry (focusing on northern aspect of buildings A-D and the southern aspect of building A) | Soprano pipistrelle | 5                     | Southern aspect of building A ("Roost 2") | 5 soprano pipistrelles entered into lifted flashing of dormer window SJ 35527 41318.                                                                                                                                               | 04:30   |
|          |                                                                                               |                     | 1                     | Southern aspect of building A ("Roost 3") | A soprano pipistrelle bat 'tested' a crack in mortar on building A (SJ 35529 41317). The bat flew up to the crack and away three times before flying away from the building to the north. It is considered to be a probable roost. | 05:00   |
|          |                                                                                               |                     | 1                     | Eastern aspect building B. ("Roost 4")    | A soprano pipistrelle bat entered under the fourth ridge tile from the north apex (SJ 35498 41325).                                                                                                                                | 04:45   |



### 3.4 Activity summary

Table 3 – Bat activity summary

| DATE     | SURVEY TYPE                                                                                   | SPECIES             | NOTES                                                                                                                                                                                                                                                                                                                                                                         |
|----------|-----------------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 02/05/19 | Emergence (focusing on southern aspect of Buildings A-D)                                      | Soprano pipistrelle | Soprano pipistrelle bats were recorded frequently throughout the survey, foraging and socialising along the west of the buildings and along the River Dee to the south.                                                                                                                                                                                                       |
|          |                                                                                               | Noctule             | Noctule bats were recorded periodically throughout the survey, commuting and foraging at high altitude over the site.                                                                                                                                                                                                                                                         |
|          |                                                                                               | Daubenton's         | Daubenton's bats were recorded frequently throughout the survey, foraging and socialising along the River Dee to the south of site.                                                                                                                                                                                                                                           |
| 24/05/19 | Re-entry (focusing on northern aspect of buildings A-D and the southern aspect of building A) | Common pipistrelle  | Common pipistrelle bats were recorded occasionally throughout the survey, foraging and commuting                                                                                                                                                                                                                                                                              |
|          |                                                                                               | Soprano pipistrelle | Soprano pipistrelle bats were recorded frequently throughout the survey, foraging, commuting and socialising. Approximately 20 bats were observed socialising and swarming to the south-east of Building A, before 5 bats finally entered Roost 2. The remaining bats flew in different directions, towards the churchyard to the east and some along the river to the south. |
|          |                                                                                               | Daubenton's         | Daubenton's bats were also recorded along the river.                                                                                                                                                                                                                                                                                                                          |



## 4 EVALUATION AND RECOMMENDATIONS

### 4.1 Evaluation of results

The Boat Inn is situated in an area which provides good quality foraging habitat for bats. The surrounding network of hedgerow and tree-lined fields and the River Dee, with minimal lighting, all provide excellent foraging and commuting opportunities, whilst the farm buildings and residential properties within the villages provide numerous roosting opportunities.

Externally, Buildings A and C on site provided a number of roosting opportunities for crevice-dwelling bat species, including gaps under roof and ridge tiles, gaps under lead flashing, a gap at the eaves and gaps in the stonework. Buildings B and D have limited external roosting opportunities.

Internally, the buildings provide some roosting opportunities for crevice dwelling bats within the loft spaces. The loft spaces are small and cluttered therefore do not provide opportunities for loft- or void-dwelling bat species due to the lack of loft spaces present.

When undertaking the emergence survey on 2<sup>nd</sup> May 2019, it was discovered that the re-roofing works had already started on the northern aspect of building C (see Appendix 1) as part of the renovation works. The applicant was advised by UES to cease works, and the works have been put on hold until the completion of the bat surveys and obtaining of planning approval, Building C is now considered to present negligible potential for roosting bats.

Four species of bat were recorded during the bat presence / absence survey: common pipistrelle, soprano pipistrelle, noctule and Daubenton's bat. Activity was generally high, with soprano pipistrelles foraging and socialising throughout the surveys, especially to the south of the buildings and along the river. Other bat species were recorded to a lesser extent, but still frequently, particularly along the river.

No bats or field signs of bats were found within the loft space of any buildings during the internal inspections of The Boat Inn, nor were any external field signs discovered. This included a close inspection using an endoscope of the gaps in the stone/brickwork on the south aspect of Building A, where accessible.

During the surveys, the following roosts were identified:

- **Roost 1:** Located in a small gap in the brickwork on southern elevation of building A. Five soprano pipistrelle bats emerged on 02/05/19, however none returned to roost on 24/05/19.
- **Roost 2:** Located under lifted lead flashing on dormer window of southern elevation of Building A. Five soprano pipistrelle bats returned to this roost on 24/05/19, however none emerged from it on 02/05/19.
- **Roost 3:** Considered to be a probable roost based on the behaviour of a single soprano pipistrelle bat, behaving as though it was about to enter the roost, before flying off in another direction. Located in a crack in the mortar on the southern elevation of Building A
- **Roost 4:** Located on the eastern aspect of the roof of Building B, under the fourth ridge tile from the north apex. Used by a single soprano pipistrelle bat.



Evidence of nesting birds was also observed during the surveys, nesting within the cracks in the brickwork of building A.

## 4.2 Roost assessment

Based on the fact that five soprano pipistrelles used Roost 1 during the first survey but not the second, and five soprano pipistrelles used Roost 2 during the second survey but not the first, it is considered reasonably likely that these are the same bats, displaying roost-switching behaviour.

Based on the survey results gathered, the site appears to be used by relatively low numbers of soprano pipistrelle bats in a day roosting capacity during the summer. No evidence was found to suggest that a higher conservation status roost, such as a maternity roost, could be present within the buildings. Bats present within the roosts are likely to be males, non-breeding females or juveniles. The environmental conditions (humidity, temperature etc.) and roosting features within the buildings are of poor suitability to support hibernating bats. It is considered unlikely that bats are using the building for hibernation purposes.

## 4.3 Mitigation and compensation measures

### 4.3.1 Bats

Based on the proposed works, having discussed them on site with the contractors present, UES believes that direct impacts on bats are extremely unlikely to occur as a result of the works. There is a very low risk of indirect disturbance of bats as a result of the activities on site, however this can be minimised down to insignificant levels through the implementation of a method statement and it should also be noted that bats are still using the site despite the presence of contractors already on the site. If compliant with the method statement, a European protected species (EPS) mitigation licence from Natural Resources Wales (NRW) is not considered to be necessary as the risk of direct and indirect impacts on bats will be reduced to minimal levels.

The below method statement must be adhered to during the works. It should be noted that a further survey visit has been included within the method statement to mitigate for the fact that soprano pipistrelles are known to roost switch. The gaps in the stonework of Building A still present opportunities for crevice-dwelling bats and therefore this precautionary approach will detect whether any new roosting locations are being used immediately prior to the works taking place. If bats are found to be using any of these features, the works in that area must cease and UES must be contacted as a mitigation licence will be required if the works cannot be avoided.

- When planning external lighting, consideration is to be given to the commuting and dispersal routes used by bats. External lighting is to be directed away from the confirmed roosting locations within the buildings and the River Dee. See Appendix 5 – External lighting guidance for further information.
- Night working (defined as 30 minutes before sunset to 30 minutes after sunrise) will not take place during the construction phase to avoid disturbance to commuting or foraging bats.



- The project ecologist will deliver a toolbox talk to the contractors responsible for the works, including re-pointing of brickwork, prior to commencement. The talk will cover bat ecology, bats and the law, and what to do if bats or field signs of bats are found during the works. This will include the ecologist establishing an exclusion zone from the known roost locations to avoid impacting the roosts directly or indirectly. The ecologist will continue have a presence on site to supervise ongoing works and ensure the method statement is followed.
- A pre-commencement emergence / re-entry survey is to be undertaken immediately prior to the re-pointing works. The survey will monitor the current activity on site and occupied roosting locations to direct works accordingly. If additional roosts are identified during this survey, works will cease, and further survey and mitigation work may be required to characterise new roosts and ensure that no impacts will be imposed on bats. If impacts cannot be avoided, a mitigation licence must first be obtained from NRW prior to the works in that area taking place.
- Immediately prior to the start of the re-pointing works, the gaps in the brickwork in Building A will be inspected by a licensed bat ecologist. The ecologist will use an endoscope and torch where necessary to examine inside features, to check for the presence of bats.
- Scaffolding is not permitted near Roosts 1, 2 or 3, an exclusion zone will ensure all roost access points are not blocked or cluttered by scaffolding. The exclusion zone will also ensure that roost 3 and adjacent cracks are not be included in the re-pointing works, this will ensure that no bats or roosts are impacted by the works.
- In the event that a bat or additional roosts are discovered during the works, the works will stop immediately, and the current method statement will be reviewed. The requirement for an EPS mitigation license will be reviewed. If a license is required, then works will not continue until an EPS mitigation license has been granted from NRW.
- UES will remain on call throughout the development in case any further advice is needed or bats are encountered. **UES can be contacted directly on 01565 757788.**

#### 4.3.2 Birds

Due to the presence of breeding birds in the buildings on site, it is recommended that the initial site clearance (including vegetation) and re-pointing works take place outside of the breeding bird season and should not be undertaken from March to August inclusive. If this is not possible, a breeding bird nest survey should be undertaken prior to the commencement of works by a suitably experienced ecologist and an ecological clerk of works appointed if considered necessary.



## 5 CONCLUSION

The Boat Inn is situated in an area which provides high quality foraging and commuting habitats for bats, and also contains several PRFs.

A total of four roosts were found within the buildings during the surveys. Based on the survey results gathered, the site appears to be used by relatively low numbers of soprano pipistrelle bats in a day roosting capacity during the summer. No evidence was found to suggest that a higher conservation status roost, such as a maternity roost, could be present within the buildings. It is considered unlikely that bats are using the building for hibernation purposes.

Based on the proposed works, having discussed them on site with the contractors present, UES believes that direct impacts on bats are extremely unlikely to occur as a result of the works and that the potential for indirect disturbance impacts can be minimised to insignificant levels through the implementation of a method statement, which is included in section 4.3.1 of this report. The method statement includes the requirement for a further pre-commencement bat survey to confirm roosting locations at that time (mitigating for the roost-switching soprano pipistrelles) and to direct works accordingly. If additional roosts are identified during this survey, works will cease, and further survey and mitigation work may be required to characterise new roosts and ensure that no impacts will be imposed on bats. If impacts cannot be avoided, a mitigation licence must first be obtained from NRW prior to the works in that area taking place.

Due to the presence of nesting birds in the buildings, works on site will also need to be mindful of breeding bird legislation, as detailed in section 4.3.2.



## 6 REFERENCES

Chartered Institute of Ecology and Environmental Management (2013). *Competencies for Species Survey: Bats*.

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Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. (3<sup>rd</sup> ed.) The Bat Conservation Trust, London.

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

Mitchell-Jones, A.J. & McLeish, A.P. (2004). *The Bat Workers Manual*. (3<sup>rd</sup> ed.) JNCC



## **APPENDICES**

### **Appendix 1 – Site plan**



## The Boat Inn, Wrexham

### Site plan

— Development boundary

A – D Buildings



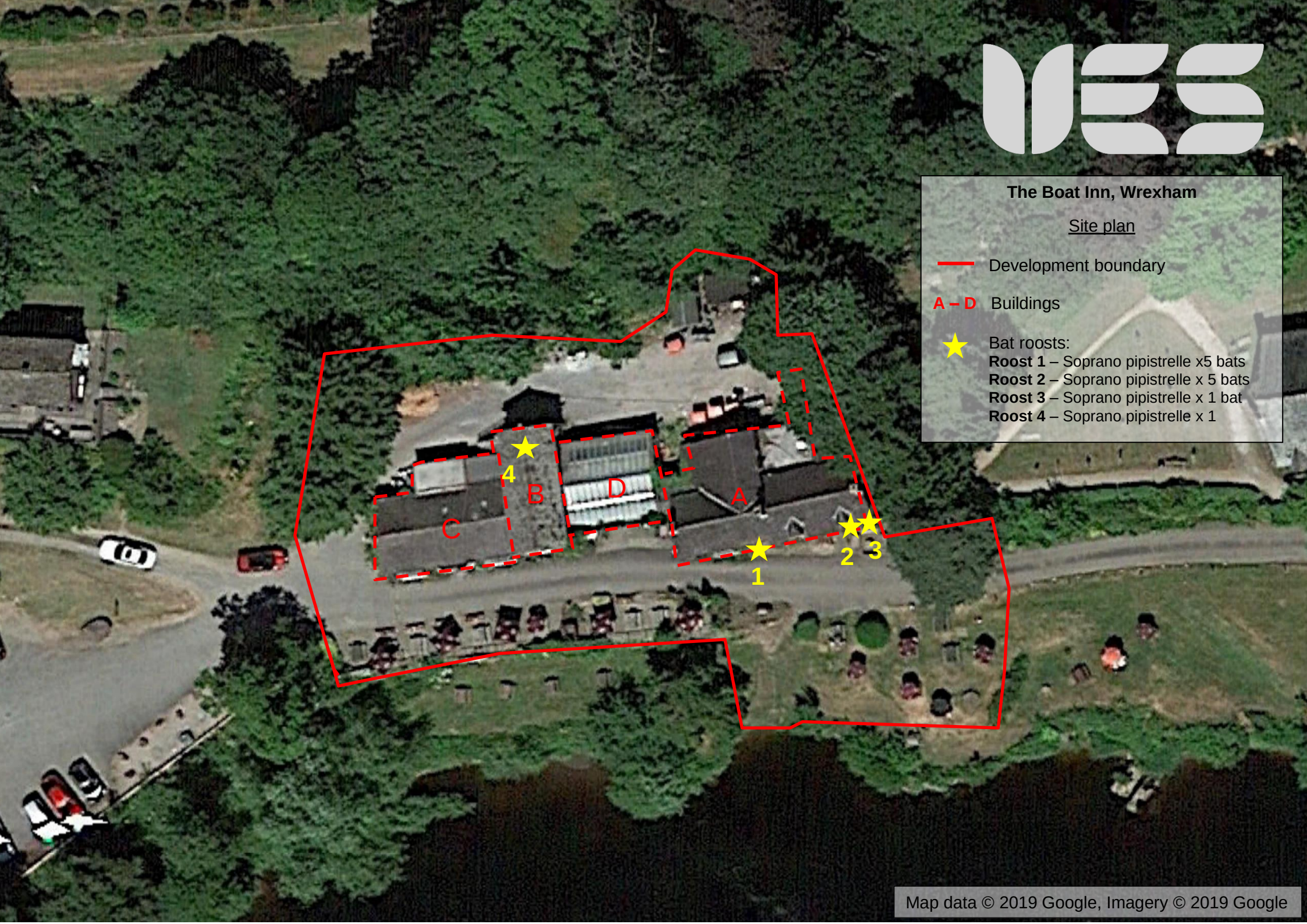
Bat roosts:

**Roost 1** – Soprano pipistrelle x5 bats

**Roost 2** – Soprano pipistrelle x 5 bats

**Roost 3** – Soprano pipistrelle x 1 bat

**Roost 4** – Soprano pipistrelle x 1





## Appendix 2 – Aerial photographs



**The Boat Inn, Wrexham**

Close aerial photograph

— Development boundary

A - D Buildings





The Boat Inn, Wrexham

Wide aerial photograph



Site location



## Appendix 3– Photographs



Photo 1. The Boat Inn – Building A southern elevation facing the River Dee.



Photo 2. Gaps under ridge tiles of Building A.



Photo 3. Gap at the eastern corner eaves - Building A.



Photo 4. Gaps in the stonework on the southern elevation of Building A.



Photo 5. Rear (north) of Building A.



Photo 6. Front (south) elevation of Building B and Building C.



Photo 7. Rear (north) gable end of Building B.



Photo 8. Rear (north) of Building C with small extension.



Photo 9. Raised and slipped roof tiles - Building C.



Photo 10. Front (south) elevation of Building D connecting A and B.



Photo 11. Upper floor of Building A.



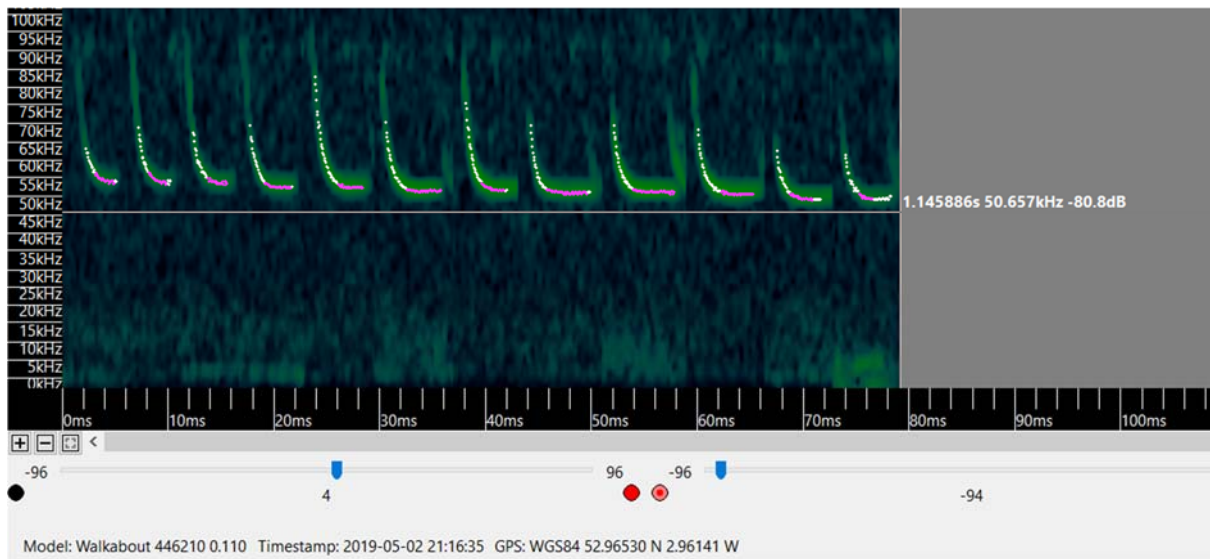
Photo 12. Interior of Building C.



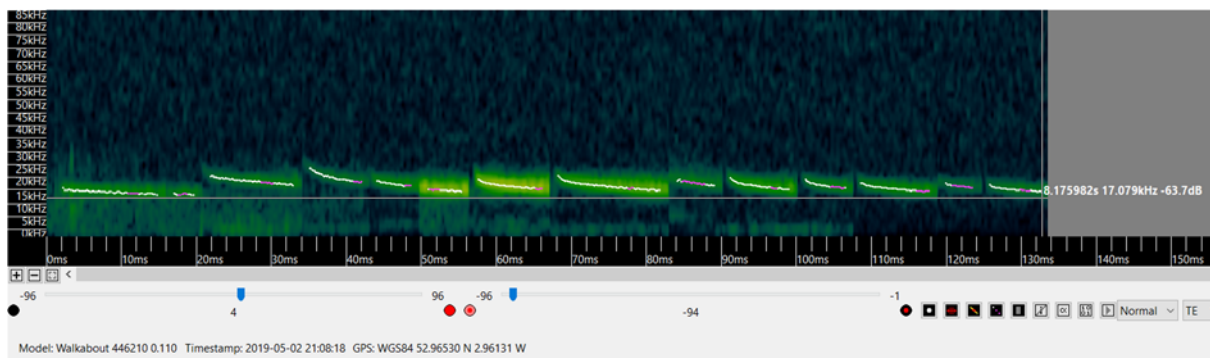
Photo 13. Interior of Building D.



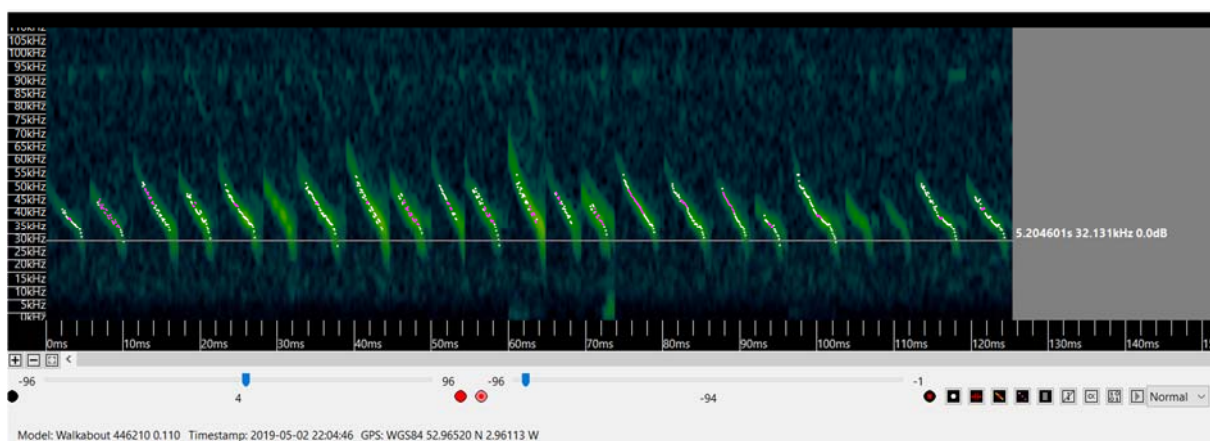
## Appendix 4 – Results



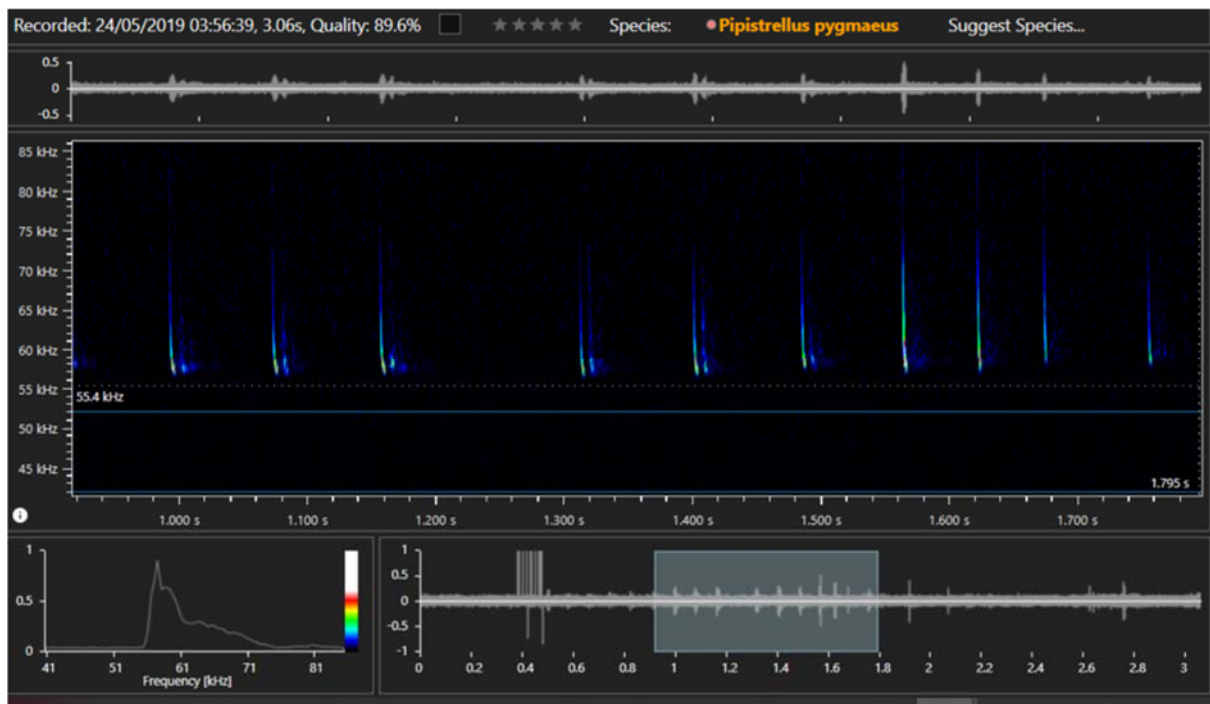
Sonogram 1 – Soprano pipistrelle pass recorded at 21.16.35 pm on the 2<sup>nd</sup> May 2019.



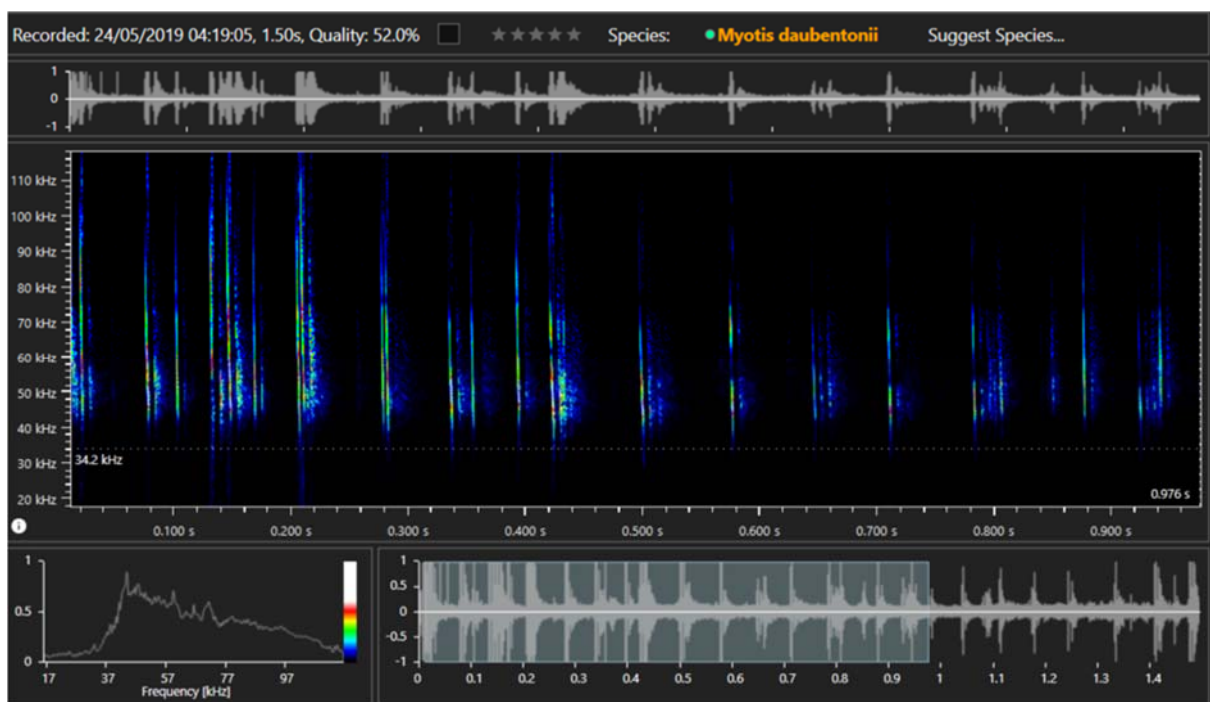
Sonogram 2 – Noctule pass recorded at 21.08.18 pm on 2<sup>nd</sup> May 2019.



Sonogram 3 – Daubenton's bat pass recorded at 22.04.46 pm on 2<sup>nd</sup> May 2019



Sonogram 4 – Soprano pipistrelle bat pass recorded at 03.56.39 am on 24<sup>th</sup> May 2019



Sonogram 5 - Daubenton's bat pass recorded at 04.19.05 am on 24<sup>th</sup> May 2019



Sonogram 6 – Common pipistrelle bat pass recorded at 04.33.50 am on 24<sup>th</sup> May 2019



## **Appendix 5– External lighting guidance**

# Lighting scheme in relation to bats

The two most important features of street and security lighting with respect to bats are:

1. The UV component. Low or zero UV installations are preferred to reduce attraction of insects to lighting and therefore to reduce the attraction of foraging bats to these areas.
2. Restriction of the area illuminated. Lighting must be shielded to maintain dark areas, particularly above lighting installations, and in many cases, land adjacent to the areas illuminated. The aim is to maintain dark commuting corridors for foraging and commuting bats. Bats avoid well lit areas, and these create barriers for flying bats between roosting and feeding areas.

UV characteristics:

## Low

- Low pressure Sodium Lamps (SOX) emit a minimal UV component.
- High pressure Sodium Lamps (SON) emit a small UV component.
- White SON, though low in UV, emit more than regular SON.

## High

- Metal Halide lamps emit more UV than SON lamps, but less than Mercury lamps
- Mercury lamps (MBF) emit a high UV component.
- Tungsten Halogen, if unfiltered, emit a high UV component
- Compact Fluorescent (CFL), if unfiltered, emit a high UV component.
- Variable
- Light Emitting Diodes (LEDs) have a range of UV outputs. Variants are available with low or minimal UV output.
- Glass glazing and UV filtering lenses are recommended to reduce UV output.

## Street lighting

- Low-pressure sodium or high-pressure sodium must be used instead of mercury or metal halide lamps. LEDs must be specified as low UV. Tungsten halogen and CFL sources must have appropriate UV filtering to reduce UV to low levels.
- Lighting must be directed to where it is needed and light spillage avoided. Hoods must be used on each lamp to direct light and contain spillage. Light leakage into hedgerows and trees must be avoided.
- If possible, the times during which the lighting is on overnight must be limited to provide some dark periods. If the light is fitted with a timer this must be adjusted to reduce the amount of 'lit time' and provide dark periods.

## Security and domestic external lighting

The above recommendations concerning UV output and direction apply. In addition:

- Lighting should illuminate only ground floor areas. Light should not leak upwards to illuminate first floor and higher levels.
- Lamps of greater than 2000 lumens (150 W) must not be used.
- Movement or similar sensors must be used. They must be carefully installed and aimed, to reduce the amount of time a light is on each night.
- Light must illuminate only the immediate area required, by using as sharp a downward angle as possible. Light must not be directed at or close to bat roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit.
- Wide angle illumination must be avoided as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.
- Lighting must not illuminate any bat bricks and boxes placed on buildings, trees or other nearby locations.



## Appendix 6 – Statutory and planning context

## Ecological assessments

Ecological assessments play an important part within the planning context; they include an initial assessment which highlights any specific interests of a site. From the initial site assessment, the surveyor assesses the suitability of habitats within the site to support protected species and makes recommendations for further survey works if required. The following paragraphs provide a brief interpretation of the legislative protection that is relevant to the findings of this report.

## Bats

In the United Kingdom, all species of bat and their roosts are afforded full protection under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (known as the “Habitats Regulations”). The Wildlife and Countryside Act is the domestic implementation of the Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) and was amended by the Countryside and Rights of Way Act 2000. This makes it an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture a bat
- Deliberately, intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection
- Deliberately, intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection (even if the bat is not present at the time)
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead bat, any part of a bat or anything derived from a bat

Under UK law, a bat roost is *any structure or place which any wild [bat] ... uses for shelter or protection*. As bats often reuse the same roosts, legal opinion is that a roost is protected whether or not the bats are present at the time of the activity taking place.

Penalties for offences include fines of up to £5000, plus up to six months imprisonment, for each offence committed.

If an activity is likely to result in any of the above offences, a licence can be applied for to derogate from the protection afforded. These licences must provide appropriate mitigation and are issued by National Resources Wales (NRW).

The Natural Environment and Rural Communities (NERC) Act 2006 lists the following bat species as species of principle importance under Section 41:

- Barbastelle *Barbastella barbastellus*
- Bechstein's bat *Myotis bechsteinii*
- Noctule *Nyctalus noctula*
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Brown long-eared bat *Plecotus auritus*
- Greater horseshoe *Rhinolophus ferrumequinum*
- Lesser horseshoe *Rhinolophus hipposideros*

Section 40 requires every public body in the exercising of its functions ‘have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity’ (all biodiversity and not just section 41 species and habitats); therefore making these bats a material consideration in the planning process and requiring a detailed ecological bat survey before planning permission can be granted.