United Environmental Services Ltd
1 Booths Park,
Chelford Road,
Knutsford,
Cheshire
WA16 8QZ

www.ues.org.uk
enquiries@ues.org.uk
01565 757788

BAT HIBERNATION SURVEY

At

The Oaks
Wrexham Industrial Estate
Wrexham
LL13 9RG

NGR: SJ 38806 49238

Prepared for:	Emily Armstrong, FI Real Estate Management
Written by:	Josh Howard, UES Graduate Field Ecologist
Approved by:	Tom Kenwright, UES Senior Ecologist

Tom Kenwright

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EXECUTIVE SUMMARY

A bat scoping survey of all buildings on site was previously undertaken by United Environmental Services (UES) Ltd in April 2023 (see report reference UES03918/19). Subsequent bat presence / absence surveys were undertaken of buildings assessed as having low or moderate potential to support roosting bats by UES in August and September 2023 (see report reference UES03918/36).

The bat scoping survey assessed 21 of the buildings as having some potential to be used by hibernating bats. All other buildings were considered to be unsuitable for use by hibernating bats, due to a lack of suitable features and sheltered roosting locations, or due to the conditions within the building being unsuitable e.g. significant light ingress.

UES were commissioned to undertake hibernation surveys of relevant buildings between December 2023 and March 2024. The objective of this survey was to determine whether bats are using the buildings to hibernate, and if so, to identify the species and number of bats. The surveys were carried out to recognised guidelines and timings, with particular reference to Natural Resources Wales and Bat Conservation Trust (BCT) publications. No detailed development proposals are available to UES at the time of writing.

The Oaks Site is located within Wrexham Industrial Estate, south-east of Wrexham. The surrounding area consists of commercial, office and warehouse buildings. In addition, there is an extensive area of arable land to the south of the site, with Redwither Brook and the River Clywedog demarcating the southern and part of the western site boundary. These habitats will likely support an abundance of invertebrates and provide foraging and commuting opportunities for bats.

The surveys found a minimum of four species of bat to be active within the buildings on site during the survey period: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared (BLE) *Plecotus auritus* and an unidentified myotis *Myotis sp.* Although bat activity was recorded within the buildings during the survey, it was inconsistent and very low level. No bats were found to be hibernating within any of the buildings during the building inspections and all bat activity is considered to be from foraging or commuting bats, passing over or through the buildings.

As such, the buildings on site are not considered to be used as hibernation roosts, and no further mitigation or compensation measures are required regarding hibernating bats.

It should be noted however that due to the presence of bat summer roosts within numerous buildings on site, mitigation and compensation measures are required for works to some of the buildings, as detailed within the bat presence / absence survey report that has been prepared for the site (see report reference UES03918/36).

This report should be read in conjunction with appendices 1 to 6, which give visual representations of the survey results. This report should also be read in conjunction with the other bat survey reports prepared for the site by UES (see reports reference UES03918/19 and UES03918/36)

1 INTRODUCTION

1.1 Author, surveyors and qualifications

This report is compiled and written by Josh Howard BSc, UES Graduate Field Ecologist. Other surveyors included:

- Toby Hart BSc MCIEEM PIEMA, UES Managing Director. Toby is licensed by Natural Resources Wales to disturb, take and handle all species other than greater or lesser horseshoe under licence number S086508/01.
- Daniel Smith BSc MScRes, UES Ecologist. Daniel is listed as an accredited agent on the bat survey licence of Toby Hart. As such, he has been deemed competent to undertake licensable activities such as using a torch and endoscope to survey for bats.
- Robert Mooney MSc, UES Ecologist.
- James Stubbs BSc MRes, UES Graduate Ecologist.
- Ben Cowell MEng, UES Trainee Ecologist.

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.

1.2 Survey objectives

UES was commissioned in July 2023 to conduct site surveys which include the following activities:

- Conduct visual building inspections to search for evidence of hibernating bats
- Deploy static detectors to monitor the use of buildings by bats during the hibernation period
- Assess the relative importance of areas and habitats within the site for bat hibernation.
- Recommend appropriate mitigation and compensation, if applicable.

1.3 Proposed development and previous survey information.

The development proposals are currently being finalised and detailed proposals are not available at the time of writing.

A bat scoping survey of all buildings on site was previously undertaken by United (UES) Ltd in April 2023. Subsequent bat presence / absence surveys were undertaken of buildings assessed as having low or moderate potential to support roosting bats by UES in August and September 2023.

During the scoping survey, 21 of the buildings on site were considered to have the potential to be used by hibernating bats, as they are unheated, likely have areas with cool and constant

temperatures during the winter and contain either sheltered cavities that could be used by crevice-dwelling species or sheltered rooms / larger open spaces that could be used by hibernating horseshoe bats. In most cases, the hibernation potential is very limited to a single feature or area. The following buildings were considered to have some potential to be used by hibernating bats: 2, 3, 4, 5, 6, 7, 8, 9, 13, 15, 16, 20, 22, 23, 24, 25, 26, 27, 30, 31 and 32. All other buildings were considered to be unsuitable for use by hibernating bats, due to a lack of suitable features and sheltered roosting locations, or due to the conditions within the building being unsuitable e.g. significant light ingress.

During the bat scoping survey and the subsequent bat presence / absence surveys, a minimum of three species of bat were found roosting across the following nine roosts, all of which are considered to be day roosts used on an occasional basis by a single or very low number of bats

- Roost 1 – Building 3 – 1x *Myotis sp.*
- Roost 2 – Building 8 – 1x *Pipistrelle sp.*
- Roost 3 – Building 8 – 1x *Pipistrelle sp.*
- Roost 4 – Building 9 – 1x *Pipistrelle sp.*
- Roost 5 – Building 20 – 1x soprano pipistrelle
- Roost 6 – Building 13 – 1x common pipistrelle
- Roost 7 – Building 16 – 1x unknown species
- Roost 8 – Building 20 – 1x common pipistrelle
- Roost 9 – Building 13 – 1x common pipistrelle

Full details are provided within the bat scoping and bat presence / absence survey reports (see reports reference UES03918/19 and UES03918/36).

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.

This report should be read in conjunction with appendices 1 to 6, which give visual representations of the survey results. This report should also be read in conjunction with the other bat survey reports prepared for the site by UES (see reports reference UES03918/19 and UES03918/36).

2 METHODOLOGY

2.1 General

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

The habitats on site and in the surrounding area were assessed during a walkover survey, in order to gauge their suitability to support hibernating bats.

2.2 Building inspections

All 20 buildings on site assessed as having potential to be used by hibernating bats were subjected to comprehensive internal and external inspections to search for evidence of roosting / hibernating bats, as detailed in BCT guidance (Collins, 2023), using ladders, binoculars, torches and an endoscope where required. Surveys were undertaken on the following dates:

- 15th December 2023
- 16th January 2024
- 15th February 2024
- 18th March 2024

These dates were allocated to spread survey effort across the winter months, but also to ensure that deployed static detectors (see Section 2.3) remained operational.

The objective of the survey was to search for any signs of recent use by bats and to search for any hibernating bats using the buildings.

Building 25 was originally assessed as having bat hibernation potential, however it has since been removed from the potential development area and hence was not included within the scope of the hibernation surveys.

2.3 Static detector monitoring

Anabat Swift and Anabat Express static detectors were deployed within Buildings 2, 4, 16, 20, and 30 between 15th December 2023 and 18th March 2024 (for exact locations, see Appendix 1 – Site plan). Static detectors were not deployed in the remaining buildings as all features could be fully inspected from ground level via endoscope and by torch. As such, they were subject to monthly inspections instead.

The Anabat Swift device uses frequency division technology with a frequency range of 5 – 250khz and records echolocation calls in full spectrum and zero crossing format.

The Anabat Express device uses frequency division technology with a frequency range of 5 – 250khz and records echolocation calls in zero crossing format only.

Both detectors have an integrated GPS receiver which automatically sets the internal clock, calculates sunset and sunrise times and records the location. All bat recordings were automatically recorded onto an SD card and time, date and temperature stamped.

Each detector was checked monthly to change the batteries, retrieve the data and to ensure the detectors remained fully operational.

Additionally, an EasyLog USB-2 Relative Humidity and Temperature logger was deployed within Buildings 2, 4, 16, 20, and 30, to monitor temperature and humidity conditions within the buildings.

2.4 Survey limitations

Static detectors and dataloggers both experienced malfunctions resulting in loss of some data. This included defective equipment and damage through extreme weather conditions. Furthermore, several detectors were disturbed by human interference which also resulted in data loss, this included manually switching equipment off, knocking the detectors off the ledge they were installed on, and relocating them to sub-optimal positions. However, any defective equipment was replaced, and sufficient survey data is available from all buildings. Furthermore, all buildings with static detectors were also subject to monthly visual external and internal inspections, during which the majority of potential hibernation features could be fully inspected. As such, it is considered that the survey information available is sufficient to form a robust conclusion on the use of the buildings by hibernating bats.

3 RESULTS

3.1 Habitat assessment

The Oaks is located within Wrexham Industrial Estate, south-east of the city of Wrexham. The proposed development site is dominated by dense scrub with scattered trees, ponds and derelict buildings. Small stands of more mature scrub and broadleaved woodland are present within the southern section of the site. Small areas of disturbed ground and semi-improved grassland are also present across the site. Redwither Brook flows along part of the western site boundary and the Clywedog River demarcates the southern site boundary.

The surrounding area consists of commercial, office and warehouse buildings with well-lit roads which may cause noise and light pollution for commuting bats. However, there is an extensive area of arable land with hedge-lined fields and tree lines to the south of the proposed development site. These habitats provide low-moderate quality foraging and commuting opportunities for bats.

The wider surrounding areas consists of further industrial estate buildings to the north and arable fields bordered by hedgerows and tree lines to the south of the site. There are additional woodland habitats within the surrounding areas which may provide commuting, foraging and roosting opportunities for bats, all of which are connected to the site by hedgerows and tree lines.

3.2 Building inspections

Buildings have been numbered for the purposes of this report. The building numbers are consistent with the other ecological survey reports prepared for the site by UES; the buildings surveyed are shown at Appendix 1 – Site plan.

Building 2 varies in height and is open floor to ceiling with no loft void. It has a flat roof constructed from concrete with an external bitumen lining supported by metal beams. The building is constructed from redbrick which contains cavities and gaps within the mortar (Appendix 3 - Photograph 1). These features may be suitable for individual roosting bats. There is also superficial damage within the brickwork.

There is open access into the building due to the open door and window frames. A window on the northern aspect of the building has been partially boarded that may provide a potential roosting feature (PRF) for bats if there is a gap between the wooden boards. However, due to the height of the feature it could not be fully inspected during the survey but the wooden frame surrounding the window appears well-sealed to the brick.

Building 3 has been partially demolished and consists of the external redbrick walls, with no roof or internal structure. Several gaps and cracks were identified within the mortar which increase in width as they extended upwards, to a maximum width of 4cm. In addition, there is a gap around the concrete lintel. A single Myotis sp. bat was identified, day roosting within a crack in the brickwork during summer surveys, but no evidence was identified during hibernation inspections.

Building 4 varies in height and has a flat roof constructed from concrete with a bitumen cover. Several gaps were identified between the concrete and timber on the flat roof. The building is constructed from redbrick which contains several superficial cavities and a large hole within the brickwork with no associated PRFs. However, there is a crack on the eastern aspect of

the building and several holes associated with metal pipework which provide suitable PRFs for bats (Photograph 2).

There is open access into the building from open door and window frames. The internal walls are constructed from redbrick and contain minor gaps in the mortar and pipework. In addition, a crack was identified within the brickwork which is narrow at the base and extends to a maximum width of approximately 2cm.

Building 5 is a single storey building with no loft void. The roof is constructed from unlined concrete and the walls are constructed from redbrick. There is open access into the building due to the presence of open windows and doors. The building contains no internal PRFs for crevice dwelling bat species. However, the building has been assessed as having hibernation potential for horseshoe bat species *Rhinolophus sp*.

Building 6 is a single storey building with a flat roof constructed from concrete with a bitumen cover and a narrow roof void that contain tubular cavities measuring approximately 15cm x 7cm (Photograph 3). The features were fully inspected with an endoscope and contain no evidence of roosting bats. The walls are constructed from redbrick and contains several gaps within the mortar on the southern aspect. In addition, a gap was identified between the timber doorframe and the brick wall on the northern aspect of the building which may provide a suitable PRF for bats.

Building 7 is a tower with a flat roof that is constructed from concrete with a metal chimney on the southern aspect (Photograph 4). The walls are constructed from redbrick which contains superficial gaps. Additionally, it has no loft void and is open floor to ceiling, measuring approximately 10m in height. The roof is lined with wooden panels and metal support beams. The internal walls are constructed from redbrick which contain several PRFs for bats: including a gap between the wall and the rigid steel joist on the northern and southern aspects of the building. There is open access into the building due to the presence of open windows and doors.

Building 8 is a single storey building with no loft void. The roof is constructed from unlined concrete and the walls are constructed from redbrick. Several cracks were identified within the redbrick walls on the eastern aspect of the building, which provide suitable PRF for bats, however, most were heavily cobwebbed. There is open access into the building due to large areas of degradation to the brickwork.

Building 9 consists of two tunnels (which feature dense scrub above them) that are constructed from smooth concrete. The tunnels are located on the western and southern aspects of the building and measure approximately 2m height and 2m width. The tunnels lead to an open area with concrete walls that measure approximately 5m in height, and a pit located at the centre, which measures approximately 4m in depth. The concrete walls are in good condition with mostly superficial gaps in the mortar, however, several gaps provide low potential PRFs. In addition, the eastern aspect of the building is covered in dense ivy which provides a PRF.

Building 13 varies in height and has a flat roof constructed from concrete with a bitumen cover. There are wooden barge boards at the eaves on the south-eastern and north-western aspects. There is a wall located directly adjacent to the southern aspect of the building which contains cavities within the brickwork and mortar.

Building 15 is a single storey building with a flat roof constructed from concrete and external redbrick walls. The walls contain cluttered ivy which has extended from the roof of the building

(Photograph 5). Numerous cracks were identified within the mortar and there is a dense ivy covering which provides a PRF for bats. There is open access into the building due to the presence of open windows and doors.

Building 16 varies in height and has a flat roof that is constructed from concrete with a bitumen cover. The walls are constructed from redbrick, with a dense ivy covering on the eastern aspect which may provide a suitable PRF for bats. In addition, numerous gaps were identified within the brickwork and the mortar. There is a concrete wall surrounding the northern aspect of the building, which contains holes associated with pipework that extends approximately 5-10m northwards. In addition, there are deep cracks within the concrete wall which also provide a suitable PRF (Photograph 6).

Building 20 varies in height and has a flat roof constructed from concrete with a bitumen cover. Trees and scrub are growing from the eaves of the building, which may lead to the formation of cracks within the brickwork and concrete (Photograph 7). The walls are constructed from redbrick, with cluttered ivy on the southern aspect which is not considered sufficiently mature to provide a PRF for bats. There are gaps within the mortar of the brickwork and doorframes, and the northern aspect of the building is surrounded by a concrete wall which features a horizontal crack that provides a suitable PRF for bats.

Building 22 consists of three flat-roofed tunnels that are constructed from smooth concrete. The tunnel located on the northern aspect of the building measures approximately 2m high and 1m wide, and the tunnels located on the eastern and western aspects of the building measure approximately 2.5m high and 2.5 wide. The tunnels lead into an open area with concrete walls and a pit located at the centre, which contains scattered scrub. A crack was identified within the concrete wall on the northern and western aspects of the building, which provides a suitable PRF for bats (Photograph 9).

Building 23 is a single storey building with a flat roof that is constructed from concrete. The walls are constructed from redbrick with concrete lintels above the door and window frames. A gap was identified between the concrete lintel above the door frame and the redbrick wall on the northern aspect of the building (Photograph 10). In addition, several gaps were identified within the mortar and the brickwork which may provide suitable PRFs for bats.

Building 24 is a single storey building with a flat roof that is constructed from concrete with a bitumen cover. The walls are constructed from redbrick and contain suitable PRFs for bats, including a gap between the wooden window frame and the redbrick wall on the eastern aspect of the building. In addition, there are cavities within the mortar and degraded brickwork which may be suitable for a single roosting bat (Photograph 11). There is a porch located on the eastern aspect of the building which consists of a concrete roof and redbrick pillars. Several cavities were identified between the concrete roof and pillars, and there is a crack within the concrete roof on the eastern aspect of the porch.

Building 26 is single storey, with a flat roof that is constructed from concrete with a bitumen cover. Several gaps were identified between the sections of concrete which form the structure of the roof (Photograph 12). These features provide suitable PRFs for bats. The walls are constructed from redbrick with two entrances on the northern aspect of the building and cluttered ivy. Numerous gaps were identified within the mortar of the brickwork, and between the brickwork and concrete lintels. In addition, there is a crack within the external wall on the southern aspect of the building.

Building 27 is a single storey building with a flat roof that is constructed from concrete with a bitumen cover. The walls are constructed from redbrick and contain small, narrow-slit concrete

windows. There is one external PRF on the building, which is a gap between the south-western corner of the building and an ash tree *Fraxinus excelsior* (Photograph 13).

Building 30 varies in height and is surrounded by dense scrub. It has a flat roof that is constructed from concrete with a bitumen cover. The walls are constructed from redbrick, which contain several PRFs including gaps within the mortar (Photograph 15). In addition, there is a concrete wall surrounding the northern aspect of the building which contains a horizontal crack.

Building 31 is a partially demolished building which is surrounded by scrub on the eastern and south-western aspects. The building consists of the external redbrick walls with no roof, windows or doors (Photograph 16). Several PRFs were identified within the building, including cracks and gaps within the mortar.

Building 32 is single and is surrounded by dense scrub. The building has a flat roof that is constructed from concrete, with redbrick walls and small, narrow-slit concrete windows (Photograph 17). The brickwork is in relatively poor condition and contains PRFs including cracks within the mortar and a horizontal crack within the brickwork which extends along the whole length of the northern aspect.

No evidence of hibernating bats was found within any of the buildings during the monthly building inspections.

3.3 Static detector monitoring surveys

Detailed survey results are provided at Appendix 4 – Static detector results. Temperature and relative humidity data are also provided at Appendix 5.

3.3.1 Building 2

Activity was limited to a low number of common and soprano pipistrelle recordings during the last few days of the survey period in March. No other species were recorded.

During the monitoring period, average internal temperatures were 6.3ºC with an average humidity of 96%. Humidity levels stayed relatively consistent, whereas average temperatures varied throughout the months, from 4.3ºC to 8.5ºC.

3.3.2 Building 4

No bat activity was recorded during the survey period.

Average internal temperatures during the surveys were 6.3ºC with temperatures dropping to 0ºC in January. Humidity levels were generally consistent with an average of 99%.

3.3.3 Building 16

No bat activity was recorded during the survey period.

Average temperature during the monitoring period was 6ºC. Humidity levels dropped with warmer temperatures but remained high throughout, with average levels of 98%.

3.3.4 Building 20

During the monitoring period, the static detector recorded low levels of activity, limited to a single common pipistrelle on the 15th of December 2023. On this day, internal temperatures averaged 6.5ºC with 97% humidity.

The average internal temperature throughout the survey was 6ºC with the lowest temperatures recorded during the middle of January. Average humidity remained primarily consistent at 99%, only varying with higher temperatures.

3.3.5 Building 30

Common pipistrelle, soprano pipistrelle, an unidentified *Myotis sp.,* and a BLE were recorded, with peak activity in February when temperatures and humidity levels were 7ºC and 95% respectively.

During the monitoring period, the average internal temperature was 6ºC with an average 96% humidity.

4 EVALUATION AND RECOMMENDATIONS

4.1 Evaluation of results

No bats were identified hibernating within any of the buildings during the building inspections.

Soprano and common pipistrelles were recorded on static detectors in Buildings 2, 20, and 30. Additionally BLE and a *Myotis sp.* were recorded in Building 30. However all recordings were individual and no hibernating bats or evidence of bats, such as droppings were identified during the monthly building inspections

Humidity levels remained consistent throughout all buildings monitored during the survey period. All buildings had an average temperature of 6ºC, with the lowest temperatures recorded in January. The temperature standard deviation was between 3-4ºC within each building. As hibernating bats require consistent temperatures, this could explain the lack of activity during the surveys.

Although very low levels of bat activity were recorded within some of the buildings during the survey, it was inconsistent and a very low level. No bats were found to be hibernating within any of the buildings during the building inspections and all bat activity is considered to be from foraging or commuting bats, passing over or through the buildings.

4.2 Mitigation and recommendations

The buildings on site are not considered to be used by hibernating bats. As such, no further mitigation or compensation measures are required regarding hibernating bats.

It should be noted however that due to the presence of bat summer roosts within numerous buildings on site, mitigation and compensation measures are required for works to some of the buildings, as detailed within the bat presence / absence survey report that has been prepared for the site (see report reference UES03918/36).

5 CONCLUSION

The Oaks Site is located within Wrexham Industrial Estate, south-east of Wrexham. The surrounding area consists of commercial, office and warehouse buildings. In addition, there is an extensive area of arable land to the south of the site, with Redwither Brook and the River Clywedog demarcating the southern and part of the western site boundary. These habitats will likely support an abundance of invertebrates and provide foraging and commuting opportunities for bats.

20 of the buildings on site have been as having potential to be used by hibernating bats. Static detectors were deployed within 5 of the buildings on site and all 20 buildings were subject to monthly inspections during the hibernation period.

Although very low levels of bat activity were recorded within some of the buildings during the survey, it was inconsistent and a very low level. No bats were found to be hibernating within any of the buildings during the building inspections and all bat activity is considered to be from foraging or commuting bats, passing over or through the buildings.

As such, the buildings on site are not considered to be used as hibernation roosts, and no further mitigation or compensation measures are required regarding hibernating bats.

6 REFERENCES

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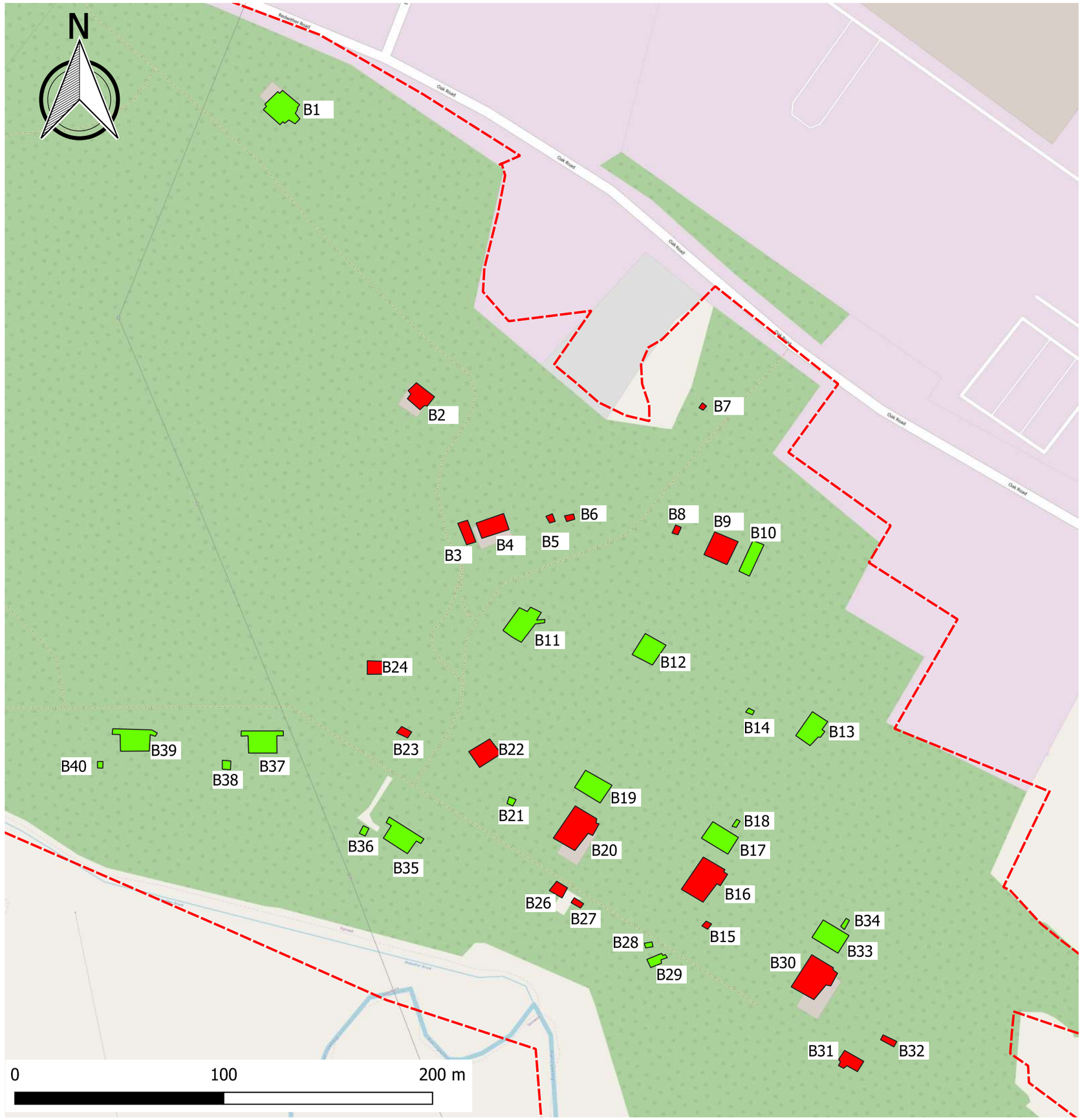
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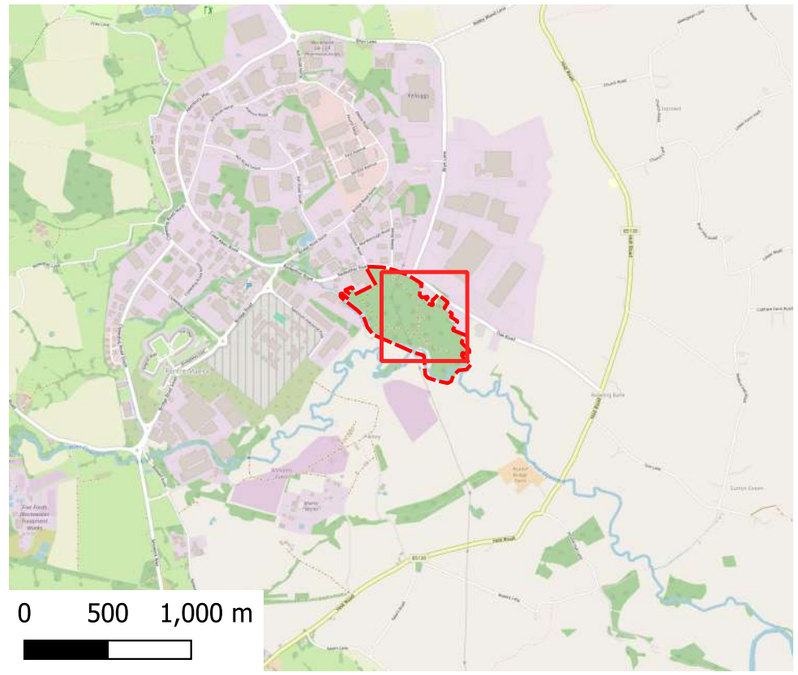
APPENDICES

Appendix 1 – Site plan

Bat Hibernation Survey

Site: The Oaks, Wrexham
NGR: SJ 38786 49263
Author: Ben Cowell
Date: 01/12/2024





Key

- Hibernation potential
- Negligible potential
- Survey boundary

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Appendix 2 – Aerial photographs


The Oaks, Wrexham Industrial Estate
Close aerial photograph
Survey boundary
Map data © 2023 Google, Imagery © 2023 Google


The Oaks, Wrexham Industrial Estate
Wide aerial photograph
Site location
Map data © 2023 Google, Imagery © 2023 Google

Appendix 3 –Photographs



Photograph 1 – Gaps present within the mortar of Building 2.



Photograph 2 – A cavity associated with pipework in Building 4.



Photograph 3 – Tubular cavities within the ceiling of Building 6.



Photograph 4 – External view of Building 7.



Photograph 5 - External view of Building 15.



Photograph 6 – Large cracks present within the concrete wall surrounding Building 16.



Photograph 7 – External view of Building 20.



Photograph 8 – External view of Building 21.



Photograph 9 – Building 22.



Photograph 10 – Cracks present within the redbrick wall and stone lintel of Building 23.



Photograph 11 – Damage to the mortar and gaps present within the brickwork of Building 24.



Photograph 12 – Gaps present between the concrete slabs of Building 26.



Photograph 13 - A gap between the south-western corner of Building 27 and an ash tree which is growing into the corner of the brickwork.



Photograph 14 – External view of Building 28.



Photograph 15 – Gaps and cracks within the brickwork of Building 30.

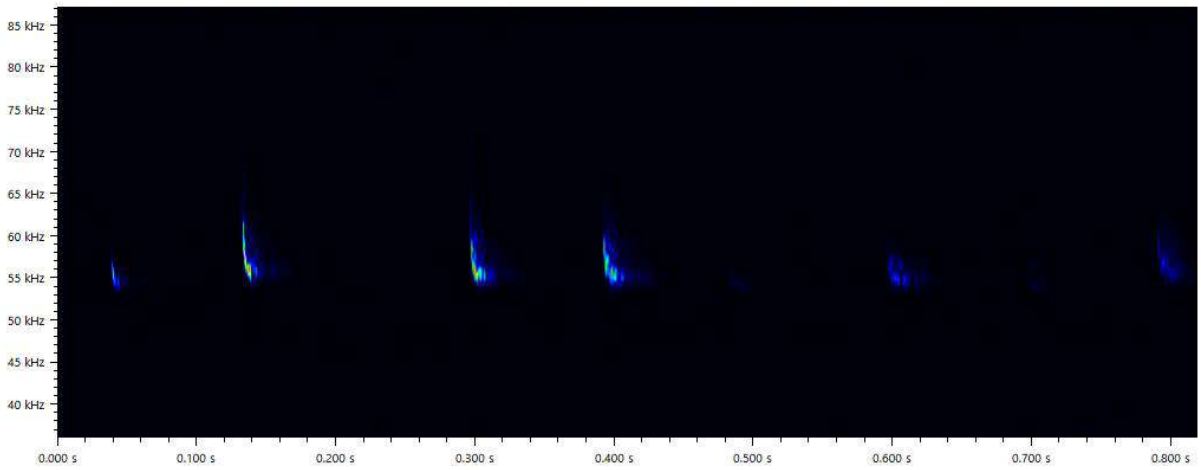


Photograph 16 – Interior of Building 31, cracks within the brickwork present.

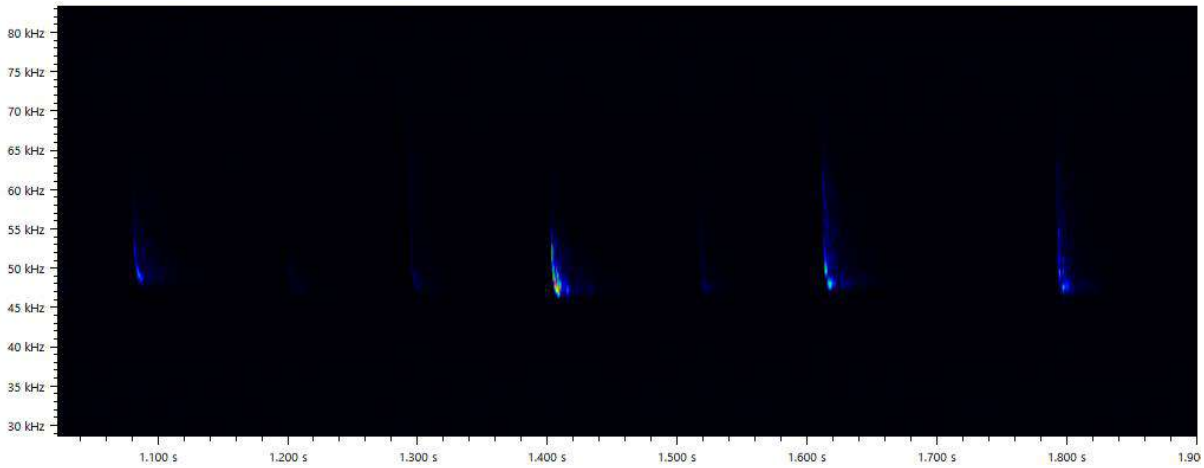


Photograph 17 – Exterior view of Building 32. Cover of vegetation and gaps within brickwork present.

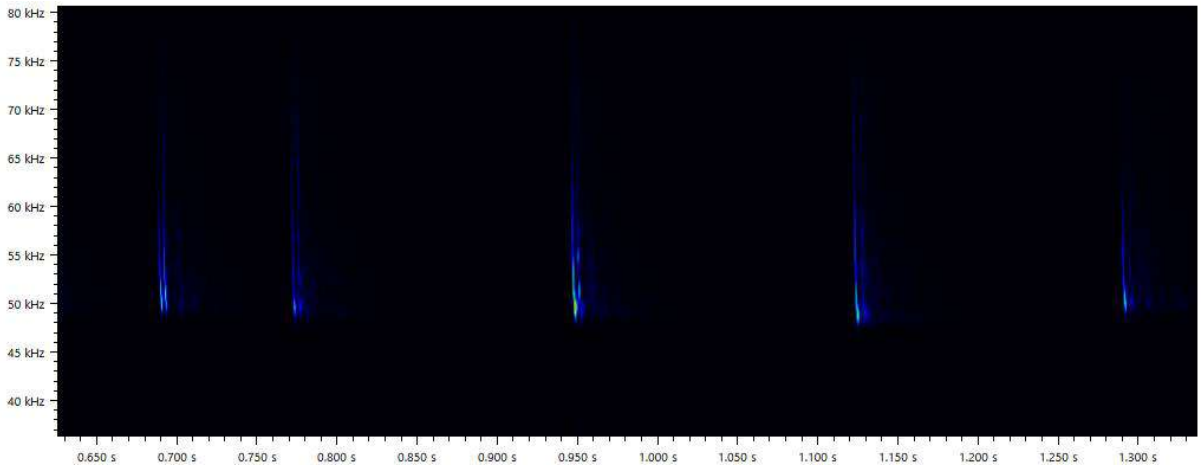
Appendix 4 – Static detector results



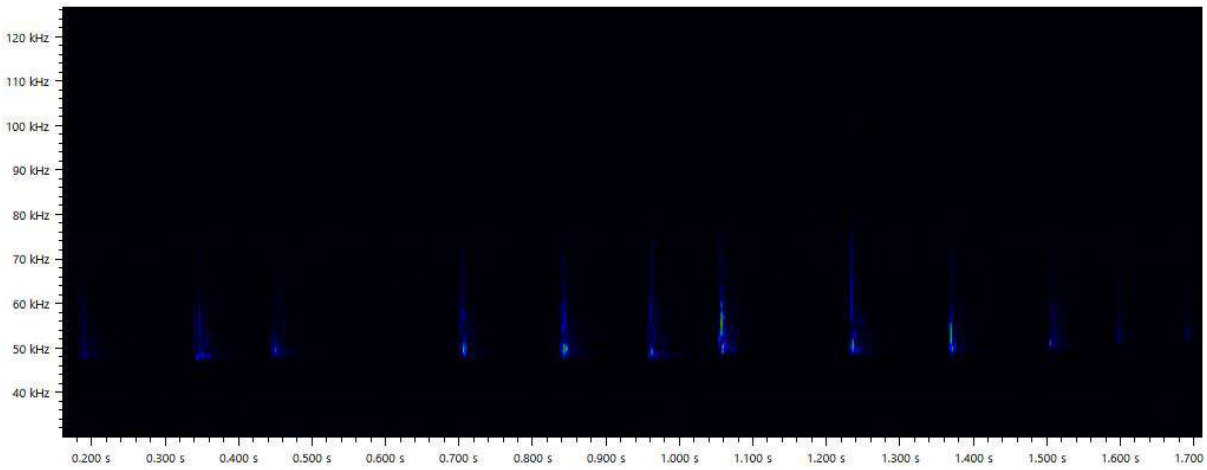
Sonogram 1 – Soprano pipistrelle recorded in Building 2 at 19:27 on 19th March 2024.



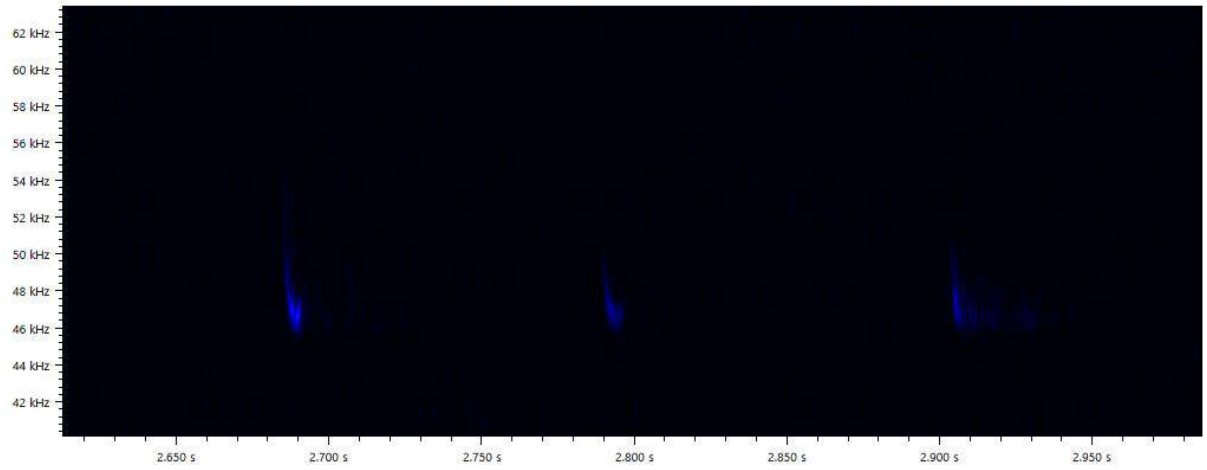
Sonogram 2 – Common pipistrelle recorded in Building 2 at 21:06 on 21st March 2024.



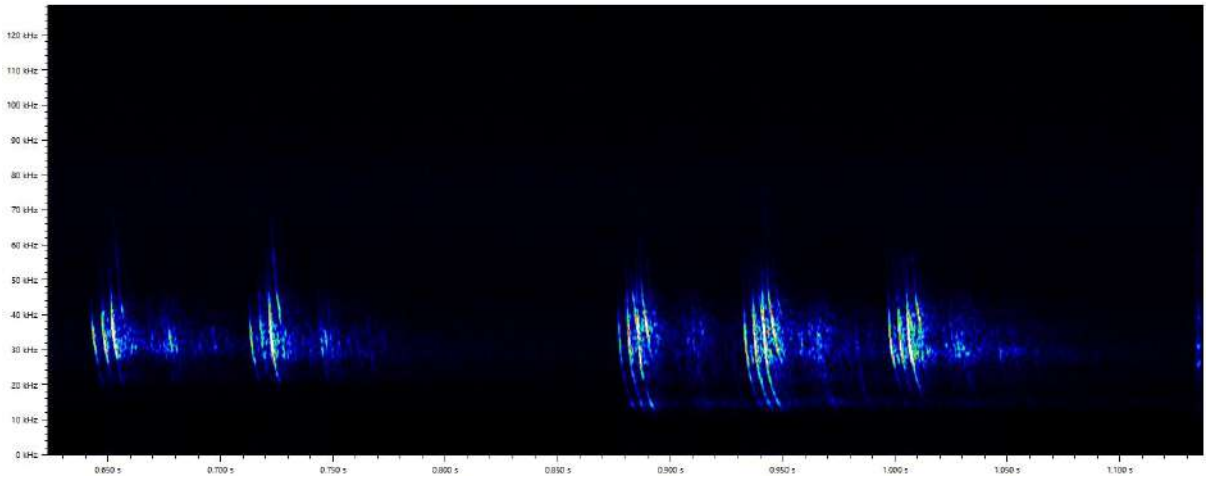
Sonogram 3 – Common pipistrelle recorded in Building 16 at 19:06 on 19th February 2024.



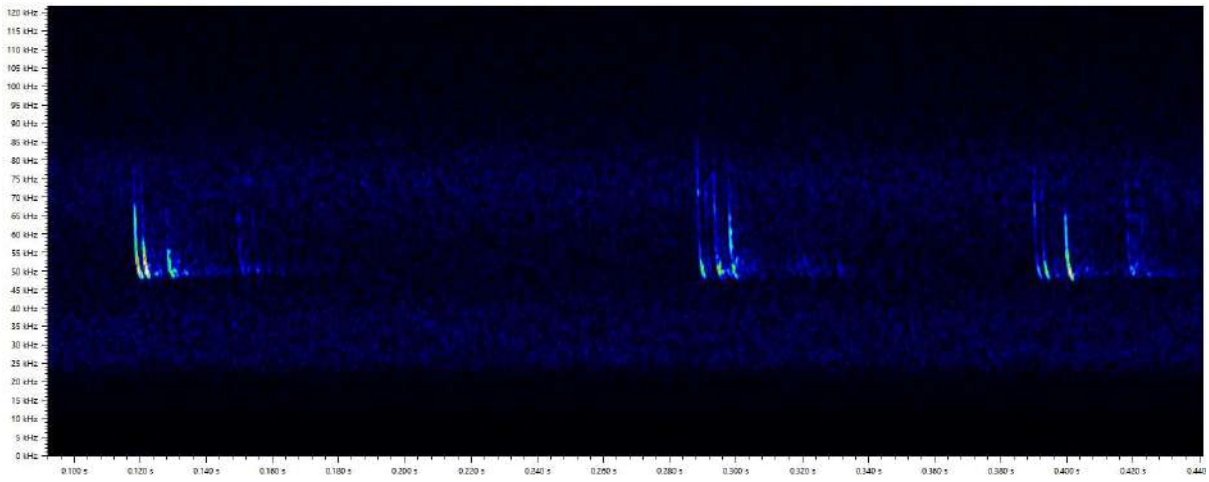
Sonogram 4 – Common pipistrelle recorded in Building 16 at 19:21 on 19th March 2024.



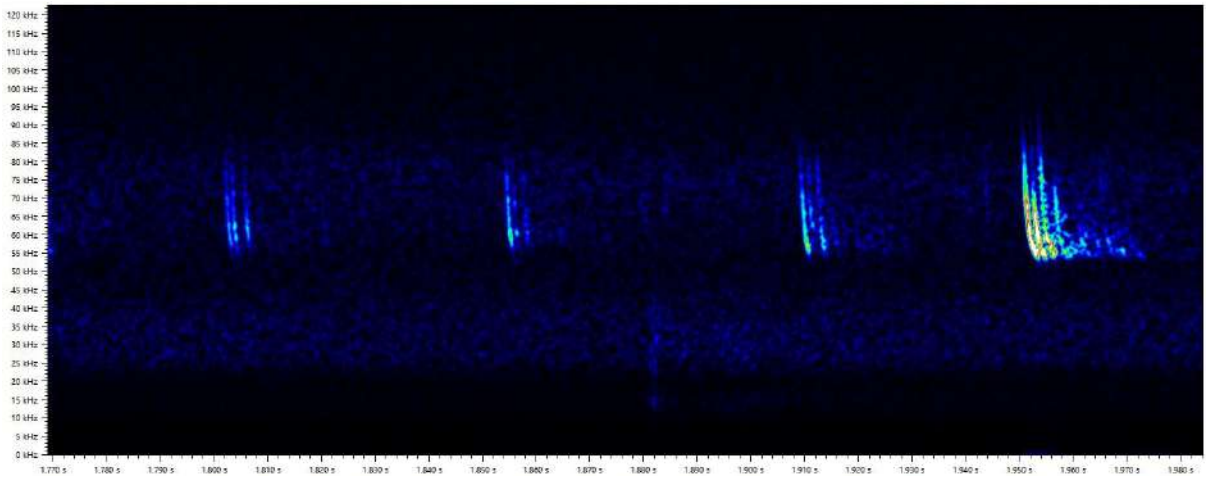
Sonogram 5 – Common pipistrelle recorded in Building 20 at 22:02 on 15th December 2023.



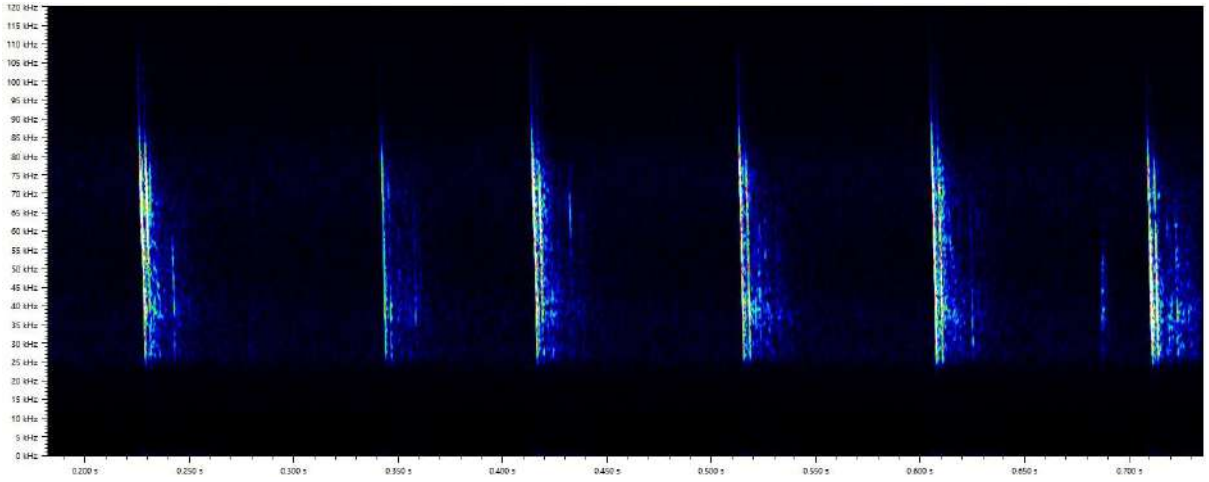
Sonogram 6 – BLE recorded in Building 30 at 17:34 on 18th December 2023.



Sonogram 7 – Common pipistrelle recorded in Building 30 at 19:00 on 18th January 2024.

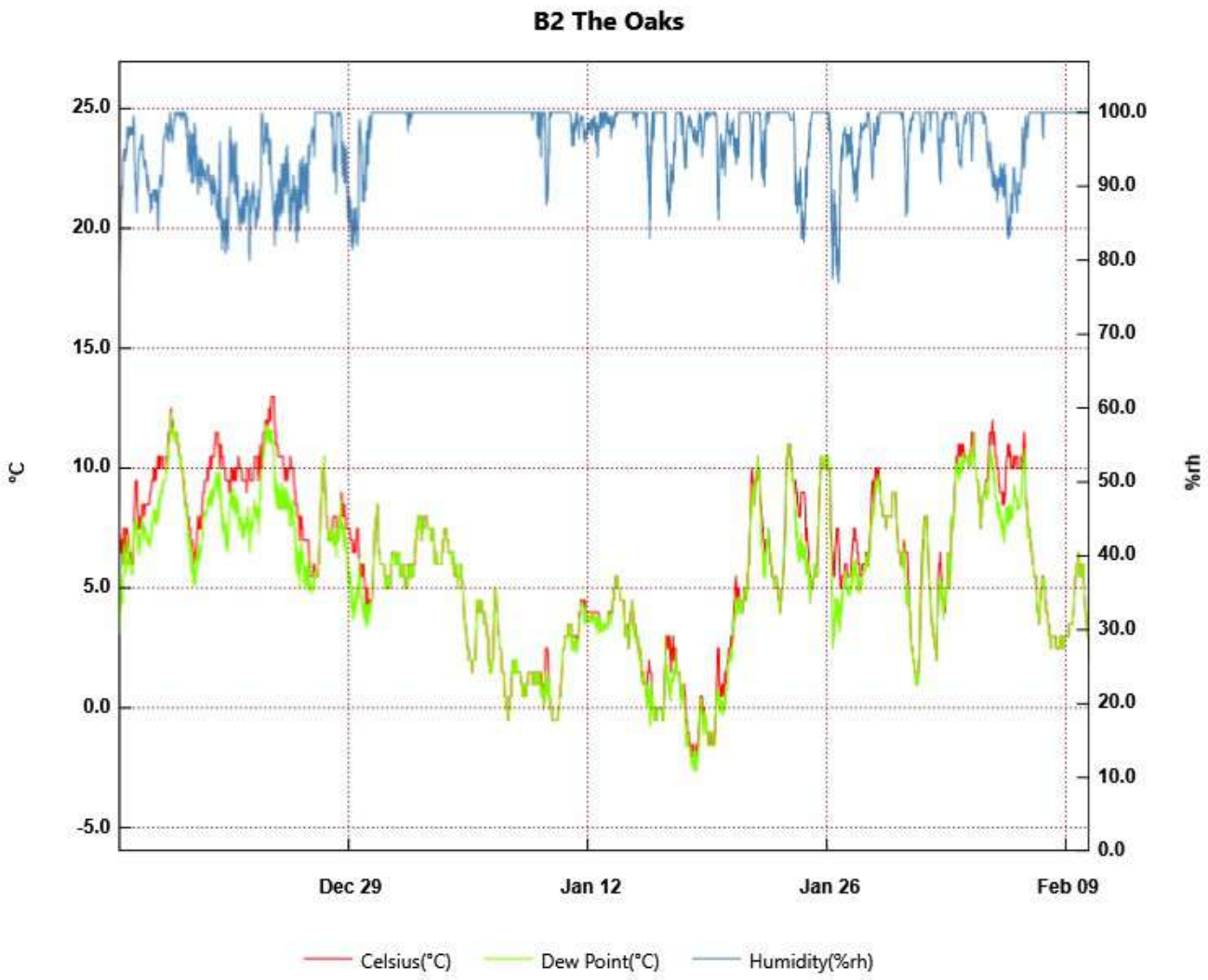


Sonogram 8 – Soprano pipistrelle recorded in Building 30 at 18:32 on 14th February 2024.



Sonogram 9 – *Myotis* species recorded in Building 30 at 23:50 on 9th March 2024.

Appendix 5 – Temperature and relative humidity results

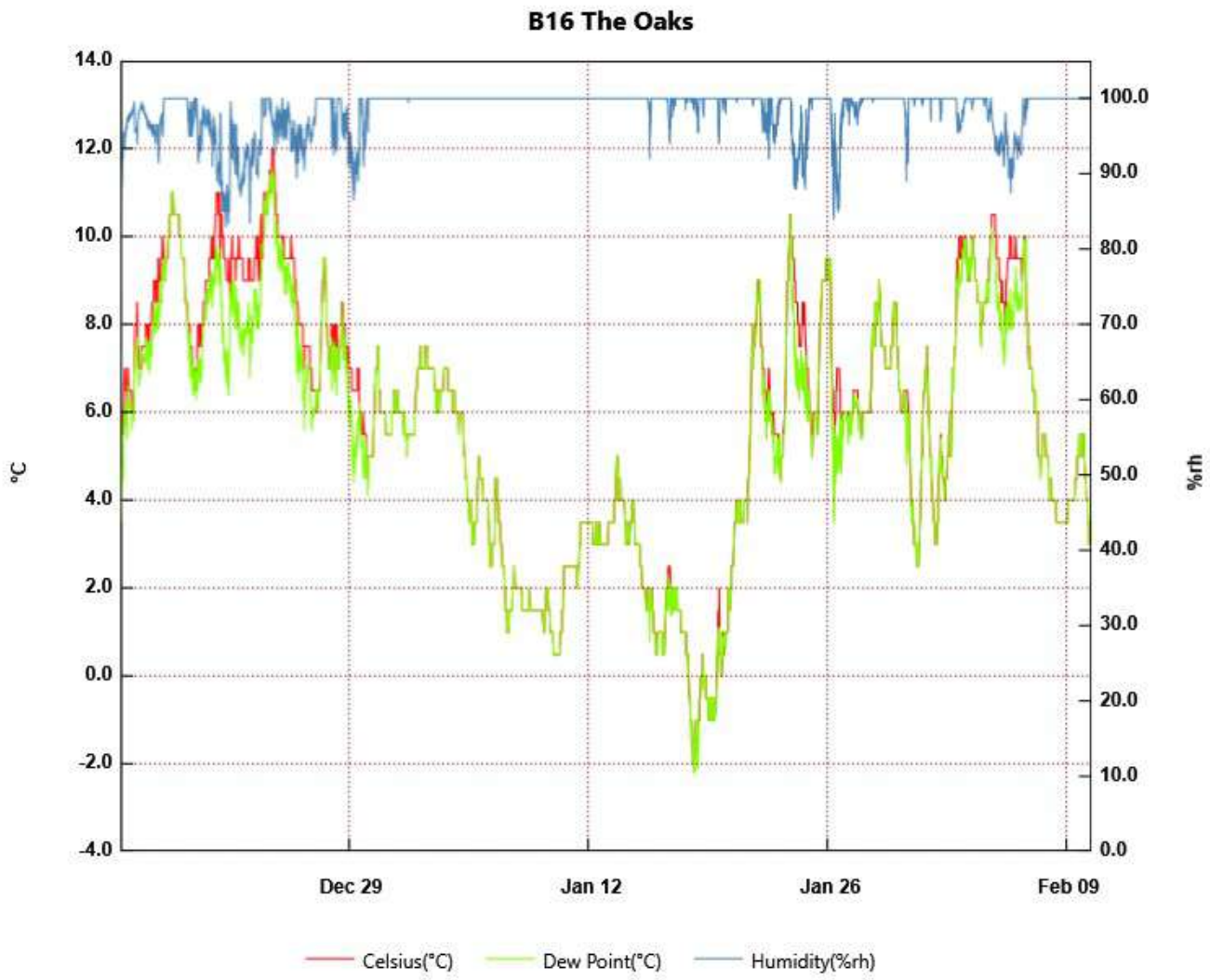


From: 15 December 2023 12:41:06 - To: 10 February 2024 09:46:06

Celsius(°C)	
Max: 23.5	Min: -2
Avg: 6	Std: 3.4

Dew Point(°C)	
Max: 12.3	Min: -2.6
Avg: 5.4	Std: 3.1

Humidity(%rh)	
Max: 100	Min: 38
Avg: 96.5	Std: 4.9

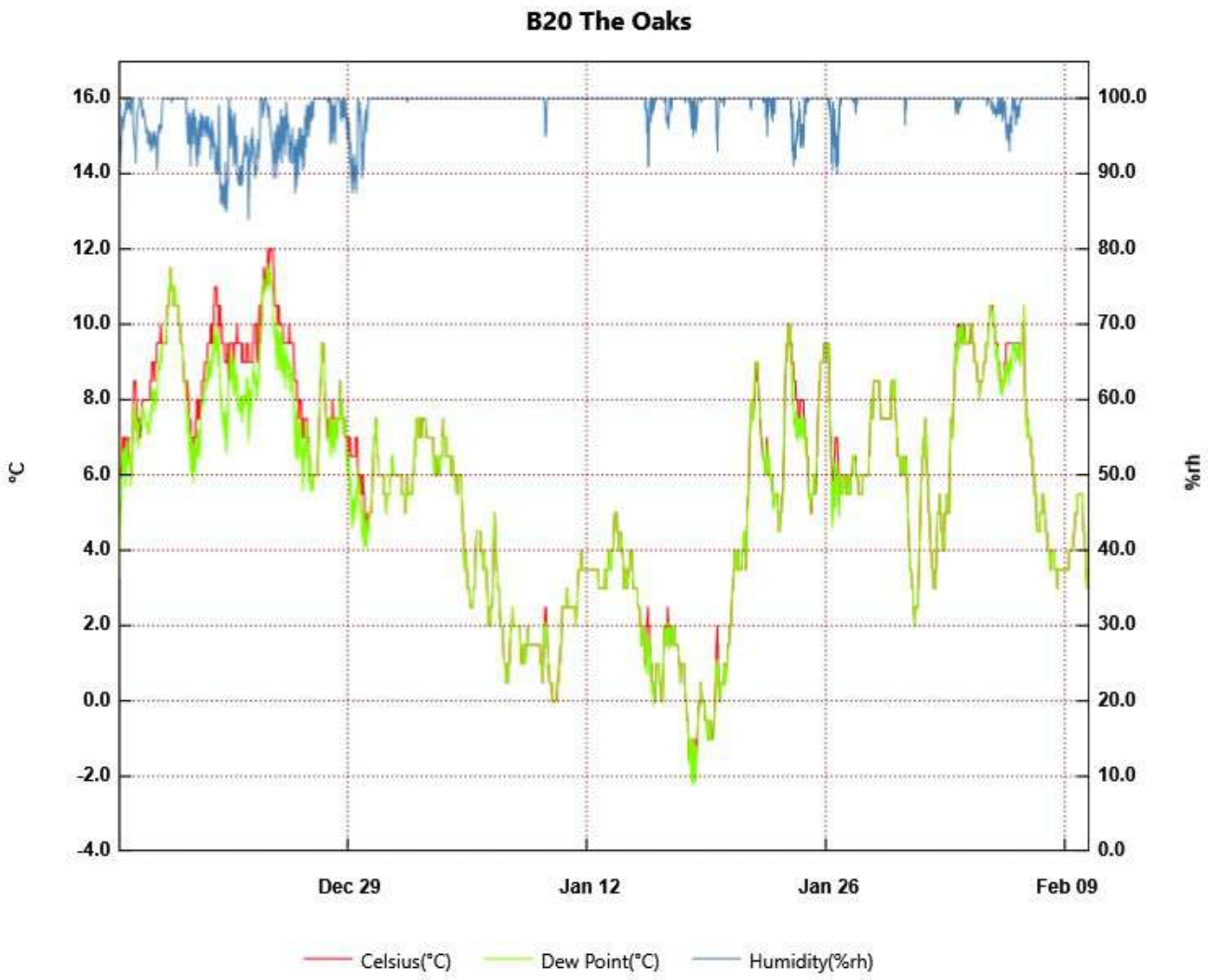


From: 15 December 2023 14:35:02 - To: 10 February 2024 11:40:02

Celsius(°C)	
Max: 12	Min: -2
Avg: 5.8	Std: 3

Dew Point(°C)	
Max: 11.5	Min: -2.2
Avg: 5.5	Std: 2.8

Humidity(%rh)	
Max: 100	Min: 58
Avg: 98.3	Std: 3.1

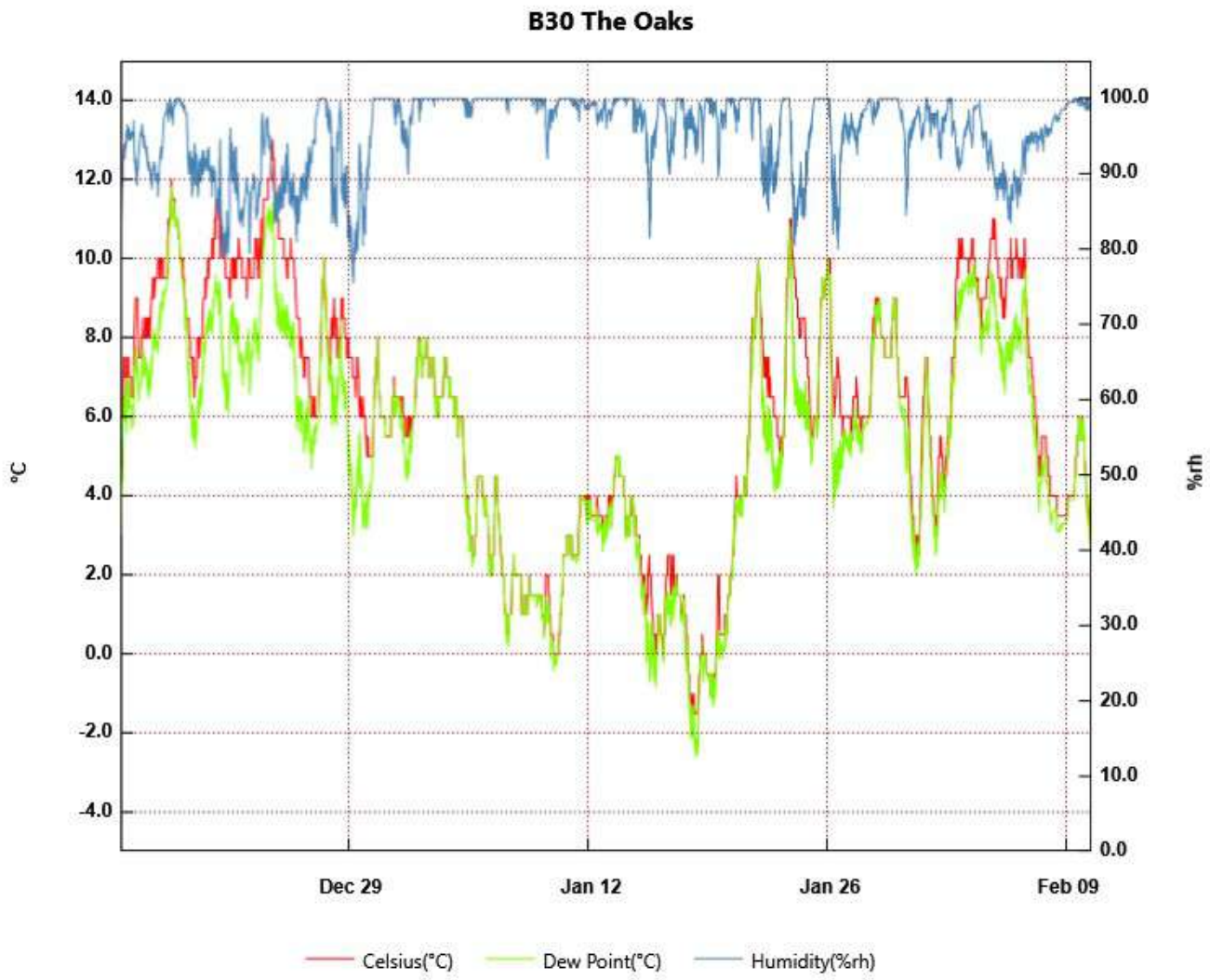


From: 15 December 2023 14:04:52 - To: 10 February 2024 11:09:52

Celsius(°C)	
Max: 14.5	Min: -1.5
Avg: 5.8	Std: 3

Dew Point(°C)	
Max: 11.6	Min: -2.2
Avg: 5.6	Std: 2.9

Humidity(%rh)	
Max: 100	Min: 57
Avg: 98.7	Std: 2.8



From: 15 December 2023 15:02:15 - To: 10 February 2024 12:07:15

Celsius(°C)	
Max: 13	Min: -1.5
Avg: 6	Std: 3.2

Dew Point(°C)	
Max: 11.8	Min: -2.6
Avg: 5.3	Std: 2.9

Humidity(%rh)	
Max: 100	Min: 55
Avg: 95.5	Std: 5.1

Appendix 6 – Statutory and planning context

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.

Habitats

Section 7 of the Environment Act (Wales) places a duty on Welsh Ministers to publish, review and revise lists of types of habitats and species in Wales which they consider are of key significance to sustain and improve biodiversity. The Welsh Ministers must also take all reasonable steps to maintain and enhance the habitats published in these lists, and encourage others to take such steps.

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 unlimited fines (formerly 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 NRW.

The Environment (Wales) Act 2016 also lists the following bat species as species of principle importance under Section 7:

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

Birds

All wild birds, their nests and young are protected throughout England and Wales by the Wildlife & Countryside Act 1981 (as amended). It is illegal to kill, injure or take any wild bird, or damage or destroy the nest or eggs of breeding birds. The legislation applies to all bird species, common and rare.

In addition to the protection afforded to all wild birds, more vulnerable species listed on Schedule 1 of the Act receive enhanced protection when breeding. Schedule 1 species, including their dependent young, are protected from intentional or reckless disturbance whilst at or near the nest, in addition to the protection afforded the more common species.

The Environment (Wales) Act 2016 offers further protection to the nests of some species that regularly re-use their nests, even when the nests are not in use.

The leading governmental and non-governmental conservation organisations in the UK have reviewed the population status' of 244 UK bird species. "Birds of Conservation Concern 4: the Red List for Birds" is the most recent publication summarising their findings. Three lists, Red, Amber and Green, have been produced based on the most up-to-date evidence available and criteria include conservation status at global and European levels and, within the UK: historical decline, trends in population and range, rarity, localised distribution and international importance. These lists are a valuable resource when considering conservation priorities.

Planning Policy

National planning guidance is issued in the form of Planning Policy Wales (PPW - 2018). The most relevant sections are included in Chapter 6: Distinctive and Natural Places. This chapter details the policies on issues such as the protection of trees, woodlands, species, and designated sites. The document is free and available to view online