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BAT PRESENCE / ABSENCE SURVEY

At

The Oaks
Wrexham Industrial Estate
Wrexham
LL13 9RG

NGR: SJ 38806 49238

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EXECUTIVE SUMMARY

A bat presence / absence survey was undertaken of buildings at The Oaks, Wrexham Industrial Estate by United Environmental Services (UES) Ltd in August and September 2023.

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, with particular reference to Natural Resources Wales and Bat Conservation Trust (BCT) publications.

The site is dominated by dense scrub and provides mostly moderate-quality habitat for foraging and commuting bats. Pockets of higher quality habitat are present throughout and include numerous ponds (most of which are ephemeral), areas of woodland and watercourses at the southern and western site boundaries. These habitats will provide an abundance of foraging opportunities, and the site is well connected to the wider landscape to the south and east via watercourses, tree lines and hedgerows, providing high-quality commuting routes. Alternative roosting opportunities are available within the buildings on site and within trees and buildings within the wider industrial estate and surrounding landscape.

Forty buildings / structures are present on site, all of which were previously subject to a bat scoping survey by UES in April 2023 (see report reference UES03918/19). The quality of roosting habitat within the building ranges from negligible to moderate. Potential roosting features (PRFs) within the buildings include crevices in brickwork, cracks internally and externally and gaps in doorways and window frames.

At least six species of bat were recorded during the presence / absence surveys: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared (BLE) bat *Plecotus auritus*, noctule *Nyctalus noctula*, lesser horseshoe *Rhinolophus hipposideros* and a *Myotis* sp. bat.

A total of nine separate roosts were found during the bat scoping and presence / absence surveys. These were recorded across five buildings: B3, B8, B9, B13, B16 and B20. A minimum of three species were found to be roosting within the buildings: soprano pipistrelle, common pipistrelle and a Myotis species. All roosts are considered to be day roosts used by individual or low numbers of bats that are likely to be males or non-breeding females.

Due presence of roosting bats, any works that will impact Buildings 3, 8, 9, 13, 16 or 20 will need to be completed under a European Protected Species (EPS) mitigation licence, issued by Natural Resources Wales. This licence can only be applied for once planning permission has been granted, but needs to secured prior to the commencement of any licensable works to these buildings that could impact roosting bats. Natural Resources Wales aim to process applications within 30 working days of receipt.

If a licence is required due to proposed works to a building containing a bat roost, a bat method statement will need to be produced for submission with the planning application. This document will need to outline the mitigation and compensation measures required in order to safeguard bats throughout the duration of development.

Due to the roost switching behaviours that have been shown and identified during the bat presence / absence surveys, there remains a risk that buildings that have not been found to be in use during the surveys may still be used on an occasional basis by roosting bats. As such, a licenced and suitability qualified ecologist should be present

to act as an ecological clerk of works (ECoW) and to an undertake a pre-commencement endoscope inspection of any buildings that are to be subject to demolition and destructive works.

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

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 Ysobella Cox BSc MBiol, UES Graduate 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 S092789/1.
- Tom Kenwright BSc MSc ACIEEM, UES Senior Ecologist. Tom is licensed by Natural Resources Wales to disturb, take and handle all species other than greater or lesser horseshoe under licence number S094176/1.
- Paul Cassidy ACIEEM, UES sub-contractor. Paul is licensed by Natural Resources Wales to disturb, take and handle all species of bats under licence number S088256/1.
- 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.
- Noah Fulton BSc, UES Graduate Ecologist
- Josh Howard BSc, UES Graduate Ecologist
- Bethan Beeston BA, UES Trainee Ecologist
- Ben Cowell, UES Sub-contractor.
- Paula Llewellyn, UES sub-contractor
- Vanessa Singh, UES Sub-contractor
- Ella Wilding, UES Sub-contractor
- Jenny Gibbs, UES Administrator

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 reviewed and approved by Tom Kenwright.

1.2 Survey objectives

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

- Confirm bat presence or likely absence by conducting emergence and re-entry surveys or detailed endoscope inspection (where possible) 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

At this stage, no detailed proposals have been submitted to UES.

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 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 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 and through studying aerial photographs to gauge their suitability to support roosting, foraging and commuting bats.

2.2 Building inspections

Detailed building inspections were conducted as part of the bat scoping survey, which was undertaken on 28th April 2023 by Alasdair Grubb and Ysobella Cox. The buildings were searched both externally and internally for bat presence and features associated with bat activity, as detailed in BCT guidance (Collins, 2016). See the bat scoping survey report prepared for the site by UES for full details (report reference UES03918/19).

2.2.1 External inspection

The external inspections of the buildings were carried out from ground level using binoculars and 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
- Lead flashing
- Eaves
- Boxed soffits
- Fascia and barge boards
- Windowsills and panes
- Walls
- Gaps under felt
- Cracks / holes in woodwork or behind cladding
- Gaps in brickwork and mortar
- Air bricks
- Grills
- Vents

2.2.2 Internal inspection

The internal inspections covered all 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, to determine the species. The level and type of bat activity was also recorded to establish how bats are using the site.

Where the initial bat scoping survey identifying the presence of roosting bats within a building, a further emergence / return roost survey was conducted to assess and characterise the identified roosts, as specified in BCT guidance (2016).

Buildings 14, 15, 23, 26, 27, 31 and 32 have low potential and only contain PRFs that are limited to shallow cavities that can be fully inspection from using an endoscope from the ground or ladders. As such, instead of a bat presence / absence survey, a detailed endoscope inspection of all PRFs within these buildings was undertaken on the 13th August 2023 by Toby Hart and Bethan Beeston.

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.

ANABAT SCOUT full spectrum bat detectors were used during the survey. This device records bat echolocation calls across the full spectrum, with a sensitivity range of 10 – 160 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.

Anabat Walkabout bat detectors were 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.

Batbox Duet dual-mode bat detectors were also used during the surveys. Whilst this device does not record echolocation data, it allows the observer to hear the bat calls and scan through different frequencies, aiding identification.

Canon XA11 Professional Video Cameras were used in conjunction with infra-red LED illuminators to monitor PRFs on buildings during the presence / absence surveys. Footage from the survey was recorded and reviewed post-survey. This enabled a more thorough assessment of the use of the buildings throughout the entirety of the survey and ensured that any bats using the buildings were identified, even when ambient light levels may have prohibited surveyors from observing bats.

2.3.2 Weather conditions

Table 1 - Weather conditions and survey timings

DATE	SURVEY TYPE	TIMINGS	SUNSET / SUNRISE	TEMP.	WIND	RAIN	CLOUD COVER
04.08.23	Re-entry (Buildings 3 and 8)	04:03 – 06:03	05:33	13ºC	Still	Dry	80%
04.08.23	Emergence (Buildings 1, 2 and 9)	20:45 – 22:30	21:00	14ºC	Still	Dry	100%
07.08.23	Re-entry (Buildings 16, 20 and 22)	04:07 – 06:07	05:37	10ºC	Still	Dry	0%
07.08.23	Emergence (Buildings 4, 7, 24 and 30)	20:41 – 22:26	20:56	13ºC	Still	Dry	40%
08.08.23	Emergence (Buildings 13 and 25)	20:39 – 22:24	20:54	15ºC	Light breeze	Dry	10%
13.08.23	Emergence (Buildings 5, 6 and 26)	20:29 – 22:14	20:44	17ºC	Still	Light rain, intermittent, throughout survey	100%
29.08.23	Re-entry (Building 26)	04:46 – 06:46	06:16	11ºC	Light breeze	Dry	70%
11.09.23	Re-entry (Building 8)	05:08 – 07:08	06:38	16ºC	Light breeze	Dry	70%
14.09.23	Emergence (Buildings 3, 16 and 20)	19:14 – 21:01	19:31	16ºC	Still	Dry	100%
15.09.23	Re-entry (Building 13)	05:15 – 07:15	06:45	13ºC	Still	Dry	90%

2.4 Survey limitations

Buildings 2, 4, 7, 8, 20, 25, 26 and 30 were covered by dense vegetation, which limited visibility of certain aspects of the buildings.

A technical error was also encountered during the emergence survey on 7th August 2023, which caused a camera to stop recording for the duration of the survey. A surveyor was also surveying the building, and no bats were recorded from that position during the survey.

The infrared lights on a camera faulted during the emergence survey on 7th August 2023, therefore no visual footage was available from the second half of the survey for that camera. However, the footage covered the peak emergence period and bats were recorded as active prior to the camera fault.

These are not considered to be significant limitations and the recommendations of the report have taken all limitations into account, to ensure that bats are protected from impacts associated with the proposed development.

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

3.2.1 Internal and external inspections

A bat scoping survey was undertaken by UES on 28th April 2023 (see corresponding report UES03918/19). Following the survey, the buildings onsite were assessed as follows:

Table 2 – Summary of previous bat scoping survey results

Negligible bat roosting suitability	Low bat roosting suitability	Moderate bat roosting suitability	Confirmed to contain bat roost
Buildings 10, 11, 12, 17, 18, 19, 21, 28, 29, 33, 34, 35, 36, 37, 38, 39 and 40	Buildings 1, 2, 4, 5, 6, 7, 9, 15, 22, 23, 24, 25, 26, 27, 30, 31 and 32	Buildings 13, 16 and 20	Buildings 3 (single *Myotis sp.* bat) and Building 8 (two *Pipistrellus sp.* bats)

Many of the buildings on site are considered to have the potential to be used by hibernating bats, as they are all 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 are 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 are 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.

Buildings 14, 15, 23, 26, 27, 31 and 32 have low potential and only contain PRFs that are limited to shallow cavities that can be fully inspection from using an endoscope from the

ground or ladders. As such, instead of a bat presence / absence survey, a detailed endoscope inspection of all PRFs within these buildings was undertaken on the 13th August 2023.

Building 14 could not be located / accessed during the initial scoping survey due to the surrounding dense scrub. However, the building has since been subject to a detail internal and external inspection to determine its suitability to support roosting bats. The building is single-storey, with a flat roof and external walls constructed from brick. Narrow-slit concrete windows are present which would allow direct access into the building. However, the building is surrounded by dense willow *Salix sp.,* and blackthorn *Prunus spinosa* reducing its accessibility for bats. PRFs identified during the survey are all associated with the brickwork and are shallow and can all be thoroughly inspection with an endoscope. As such, the building has been assessed as having low potential to support roosting bats.

Building 15 contains a small number of PRFs such as a crevice on the southeastern external wall and a feature between the brickwork and ceiling on the northeastern internal wall (Photograph 4). Both features were fully inspected with an endoscope and no evidence of roosting bats was found. A wren nest was identified within the building during the survey.

Building 23 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 window and door frames. Gaps were identified between the brickwork on the southwestern aspect of the building due to missing mortar. In addition, there is a chamber within the brickwork that measures approximately 15cm high and 3cm wide that leads 15cm both directions within the brickwork. Small weep holes were also identified within the brickwork due to missing mortar. Similar features were identified on the northern aspect, which were also fully inspected. A PRF is also present on the northern internal wall and a ceiling feature on the southern side of the building were also inspected during the survey. All features were fully inspected with an endoscope and contained no evidence of roosting bats.

Building 26 is a single storey building with no loft void. The roof is constructed from unlined concrete and the internal walls are constructed from redbrick. Numerous cracks were identified within the walls, including above the wall plate and at the point where the two walls connect. There is open access into the building due to the presence of windows and doors. A robin *Erithacus rubecula* nest and eggs, was identified within the building during the initial scoping survey. No evidence of roosting bats was observed during the scoping survey and the building was assessed as having low potential to support roosting bats.

During the detailed endoscope inspection, Bat droppings were identified on the wall beneath a crack within the brickwork in the northwestern room. The feature measures approximately 2m wide, 2cm high and extends backwards into the wall (Photograph 6). A similar feature is present in the adjacent room; however, it is cluttered with cobwebs and ivy *Hedera helix*, with no evidence of bat activity. Following the finding of bat droppings, the building was subject to two further presence / absence surveys.

Building 27 is a single storey building with no loft void. The roof is constructed from unlined concrete and the internal walls are constructed from redbrick. There is open access into the building due to the presence of windows and doors. The building contains no internal PRFs for crevice dwelling bat species. Although the building has some limited potential to be used by horseshoe bats for summer roosting, the conditions within the building during the summer are suboptimal as it is not heated, subject to light ingress and is draughty. No bats or other evidence of roosting bats was identified within the building during the detailed endoscope inspection.

Building 31 is a partially collapsed building with no roof or loft voids. The walls are constructed from redbrick, which contains numerous cracks and gaps within the mortar and the brickwork. In addition, there is an area of dense ivy within the building which may provide a suitable PRF for bats. No evidence of roosting bats was found during the initial bat scoping survey. All PRFs were fully inspected during the detailed endoscope inspection and no evidence of roosting bats was observed.

Building 32 is a single storey building with no loft void. The roof is constructed from unlined concrete, which contains a shallow crack. The internal walls are constructed from redbrick, which also contain cavities within the mortar and a crack within the brickwork. There is open access into the building due to the presence of open window and door frames. All PRFs were fully inspected during the detailed endoscope inspection and no evidence of roosting bats was observed. Herald moths *Scoliopteryx libatrix,* were observed within the building during the survey.

3.3 Emergence and re-entry surveys

Table 3 – Survey results

DATE	SURVEY TYPE	SPECIES	NUMBER OF INDIVIDUALS	ROOST LOCATION	ACCESS POINT	TIMINGS
04.08.23	Re-entry (Buildings 3 and 8)	N/A – No roosting bats were observed				
04.08.23	Emergence (Buildings 1, 2 and 9)	*Pipistrellus sp.*	1	**Roost 4** Building 9 – Within the entrance tunnel on the western aspect		21:31 and 21:40
07.08.23	Re-entry (Buildings 16, 20 and 22)	Soprano pipistrelle	1	**Roost 5** Building 20 – cavity beneath the capping stone on the upper roof, southwestern aspect of the building		05:06
07.08.23	Emergence (Buildings 4, 7, 24 and 30)	N/A – No roosting bats were observed				
08.08.23	Emergence (Buildings 13 and 25)	Common pipistrelle	1	**Roost 6** Building 13 – Internally within the building (Due to the size of the building and access points, the exact roost is location unknown)	Building 13 – Window on the eastern aspect of the building	21:59
13.08.23	Emergence (Buildings 5, 6 and 26)	N/A – No roosting bats were observed				

29.08.23	Re-entry (Building 26)	N/A – No roosting bats were observed			
11.09.23	Re-entry (Building 8)	N/A – No roosting bats were observed			
14.09.23	Emergence (Buildings 3, 16 and 20)	Unknown (no echolocation)	1	**Roost 7** Building 16 – Bat flew directly out of the doorway, roost is located internally (Due to the size of the building and access points, the exact roost is location unknown).	19:48
		Unknown (no echolocation, suspected *Pipistrellus sp.*)	1	**Roost 8** Building 20 - Western side of the doorframe on the south-western aspect of the building	20:13
15.09.23	Re-entry (Building 13)	Common pipistrelle	1	**Roost 9** Building 13 – Gap next to the window frame on the eastern aspect.	06:20

3.4 Activity summary

Table 4 – Bat activity summary

DATE	SURVEY TYPE	SPECIES	NOTES
04.08.23	Re-entry (Buildings 3 and 8)	N/A	**Building 3** No activity was recorded during the survey.
		Common pipistrelle	**Building 8** Foraging activity was recorded to the south and east of the building from 04:14 with visual passes observed from 04:50 onwards.
		Soprano pipistrelle	A single soprano pipistrelle was recorded but not observed on a single occasion.
04.08.23	Emergence (Buildings 1, 2 and 9)	Common pipistrelle	**Building 1** Limited activity recorded of common pipistrelle, 2 passes from east to west at 21:12 and northwest to southeast at 21:30.
		Common pipistrelle	**Building 2** Low activity recorded, predominantly of common pipistrelle social calls from 22:00.
		Noctule	Noctule was recorded and not observed late on in the survey.
		Noctule	**Building 9** Two noctule recordings were identified during the survey.

		Pipistrelle sp.	Activity was recorded of two common pipistrelles foraging within the central courtyard as the tunnels merge. Other activity was minimal, emergence from the tunned of a suspected pipistrelle (**Roost 4).**
07.08.23	Re-entry (Buildings 16, 20 and 22)	Common pipistrelle Common pipistrelle Soprano pipistrelle	**Building 16** Low levels of activity throughout, common pipistrelle recorded but not observed. **Building 20** Low levels of common pipistrelle recorded but not observed between 04:32 and 04:54 Higher levels of activity were recorded from soprano pipistrelle more so than common pipistrelle. Circling activity observed above the building before a re-entry was recorded into the front elevation of the building **(Roost 5).**
07.08.23	Emergence (Buildings 4, 7, 24 and 30)	Common pipistrelle Noctule N/A N/A Common pipistrelle Soprano pipistrelle	**Building 4** Low level of activity recorded from a single common pipistrelle making passes southwest to northeast across the building. Distant calls recorded at 21:17. **Building 7** No activity recorded. **Building 24** No activity recorded. **Building 30** Common pipistrelles were recorded but not observed from 21:18 to 21:55. Observed circling above the building at 21:21.
08.08.23	Emergence (Buildings 13 and 25)	Common pipistrelle Soprano Pipistrelle Noctule Common and soprano pipistrelle	**Building 13** Low number of common pipistrelle passes were recorded foraging to the north and east at 21:57. An emergence was recorded at 21:59 from the window on the eastern aspect of the building **(Roost 6).** A single soprano pipistrelle was observed circling and foraging to the north before heading south. Single recording but no observations at 21:37. **Building 25** Low levels recorded of both species; no passes observed.
13.08.23	Emergence (Buildings 5, 6 and 26)	Common and soprano pipistrelle	**Building 5 and 6** These building were next to one another. A single recording of each species was recorded at 21:29 and 21:33.

		Noctule Common pipistrelle BLE Noctule Myotis Soprano pipistrelle	Two recordings of Noctule were heard but not observed. **Building 26** First bat pass was recorded shortly after sunset, flying south to north over the building. Only a single pass was observed at 21:07. A single BLE recorded foraging behind surveyor position at 21:26. Noctule pass recorded at 21:35. Foraging recorded late in the survey. Single soprano pipistrelle recorded foraging at 22:07.
29.08.23	Re-entry (Building 26)	Common and soprano pipistrelle	First pass observed of common pipistrelle, repeatedly looping southeast of the building at 04:49. Soprano pipistrelles were recorded but not observed.
11.09.23	Re-entry (Building 8)	Common pipistrelle Soprano pipistrelle	Low levels of common pipistrelle activity recorded; circling observed at 05:35. Pass observed from east to west over the building and continued north.
14.09.23	Emergence (Buildings 3, 16 and 20)	Unknown (no echolocation) Common and Soprano pipistrelle Lesser horseshoe Common pipistrelle Unknown (no echolocation) Lesser horseshoe	**Building 16** Emergence recorded within Building 16 at 19:48. No echolocation was recorded to confirm species **(Roost 7).** Limited activity of common and soprano pipistrelle, no passes observed during the survey. 4 recordings of lesser horseshoe throughout the survey. **Building 20** Limited activity recorded of common pipistrelle, emergence from front elevation of the building, species unconfirmed as no echolocation **(Roost 8).** Recordings but no observations of lesser horseshoe between 20:08 – 20:30
15.09.23	Re-entry (Building 13)	Common pipistrelle	Only common pipistrelle were recorded throughout the survey, as single bat was repeatedly circling around the northeast aspect of the building before re-entering **(Roost 9).**

4 EVALUATION AND RECOMMENDATIONS

4.1 Evaluation of results

The site is dominated by dense scrub and provides mostly moderate-quality habitat for foraging and commuting. Pockets of higher quality habitat are present throughout and include numerous ponds (most of which are ephemeral), areas of woodland and watercourses. These habitats will provide an abundance of foraging opportunities, and the site is connected to the wider landscape to the south and east via watercourses, tree lines and hedgerows, providing high-quality commuting routes.

At least six species of bat were recorded during the bat presence / absence surveys: common pipistrelle, soprano pipistrelle, BLE bat, noctule, letter horseshoe and a *Myotis* sp. bat. Activity was generally low, with predominantly common and soprano pipistrelles foraging and socialising throughout the surveys. Other bat species were recorded to a lesser extent.

In total, nine roosting locations were found during the bat scoping and presence / absence surveys across five buildings, used by a minimum of three different species. Each roost is characterised in section 4.2.

Due to the roost switching behaviours that have been shown and identified during the bat presence / absence surveys, there remains a risk that buildings that have not been found to be in use during the surveys may still be used on an occasional basis by roosting bats.

4.2 Roost assessment

Roost 1 was identified within Building 3 during the initial bat scoping survey when a single *Myotis sp.* bat was observed within a crack in the brickwork above the door frame on the north-eastern aspect of the building. The bat was only observed to be using the building on the one occasion and is considered to be a day roost used by a single individual that is likely to be a male or a non-breeding female (Photograph 10 & 11).

Roosts 2 and 3 were identified within Building 8 during the initial bat scoping survey when A single *Pipistrellus sp.* bat was identified within a cavity between the double-skinned wall on the western aspect of the building, to the west of the door frame. The second *Pipistrellus sp.* bat was identified within a gap between the concrete lintel and the brickwork on the western aspect of the building, to the east of the door frame. The bats were only observed to be using the building on the one occasion and are considered to be day roosts used by individual bats that are likely to be a males or non-breeding females (Photograph 12-14).

Roost 4 was identified in Building 9 within the entrance tunnel on the western aspect. Given that only one pipistrelle species bat emerged from this feature, it is considered that this is a day roost used on a casual basis in the summer. The bat present is likely to be a male or non-breeding female (Photograph 15 & 16).

Roosts 5 and 8 are both located within Building 20. Roost 5 is a cavity beneath the capping stone on the upper roof on the southwestern aspect of the building, used by a single soprano pipistrelle within the during a re-entry survey. A common pipistrelle was observed emerging from Roost 8 on the western side of the doorframe on the south-western aspect of the building. The bats were only observed to be using the building on the one occasion and are considered to be day roosts used by individual bats that are likely to be a males or non-breeding females (Photograph 17 & 18).

Roosts 6 and 9 are both located within Building 13. Dring an emergence survey, an unknown species (no echolocation) emerged from the open window on the eastern aspect. Due to the size of the building and number of potential access points, the exact roost location is unknown. Despite a search, no droppings were observed to indicate the roost location or to allow DNA analysis to confirm the species. The second roost was recorded during a return roost survey when a common pipistrelle entered a crevice between the timber window frame and brickwork on the eastern aspect. The bats were only observed to be using the building on the one occasion and are considered to be day roosts used by individual bats that are likely to be a males or non-breeding females (Photograph 19 & 20).

Roost 7 was identified within Building 16. An unknown species of bat (no echolocation) was observed flying directly out of the doorway from inside the building. Due to the size of the building and number of potential access points, the exact roost location is unknown. Despite a search, no droppings were observed to indicate the roost location or to allow DNA analysis to confirm the species. Given that only one bat emerged from this feature on a single occasion, it is likely that this is a day roost used on a casual basis in the summer. The bat present is likely to be a male or non-breeding female (Photograph 21).

4.3 Mitigation and compensation measures

4.3.1 Bats

Due presence of roosting bats, any works that will impact Buildings 3, 8, 9, 13, 16 or 20 will need to be completed under a European Protected Species (EPS) mitigation licence, issued by Natural Resources Wales. This licence can only be applied for once planning permission has been granted, but needs to secured prior to the commencement of any licensable works to these buildings that could impact roosting bats. Natural Resources Wales aim to process applications within 30 working days of receipt.

If a licence is required due to proposed works to a building containing a bat roost, a bat method statement will need to be produced for submission with the planning application. This document will need to outline the mitigation and compensation measures required in order to safeguard bats throughout the duration of development.

Due to the roost switching behaviours that have been shown and identified during the bat presence / absence surveys, there remains a risk that buildings that have not been found to be in use during the surveys may still be used on an occasional basis by roosting bats. As such, a licenced and suitability qualified ecologist should be present to act as an ecological clerk of works (ECoW) and to an undertake a pre-commencement endoscope inspection of any buildings that are to be subject to demolition and destructive works.

4.3.2 Birds

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

5 CONCLUSION

The site is dominated by dense scrub and provides mostly moderate-quality habitat for foraging and commuting bats. Pockets of higher quality habitat are present throughout and include numerous ponds (most of which are ephemeral), areas of woodland and watercourses. These habitats will provide an abundance of foraging opportunities, and the site is connected to the wider landscape to the south and east via watercourses, tree lines and hedgerows, providing high-quality commuting routes.

A total of nine separate roosts were found during the bat scoping and presence / absence surveys. These were recorded across five buildings: B3, B8, B9, B13, B16 and B20. A minimum of three species were found to be roosting within the buildings: soprano pipistrelle, common pipistrelle and a Myotis species. All roosts are considered to be day roosts used by individual or low numbers of bats that are likely to be males or non-breeding females.

Due presence of roosting bats, any works that will impact Buildings 3, 8, 9, 13, 16 or 20 will need to be completed under an EPS mitigation licence, issued by Natural Resources Wales. This licence can only be applied for once planning permission has been granted, but needs to secured prior to the commencement of any licensable works to these buildings that could impact roosting bats. Natural Resources Wales aim to process applications within 30 working days of receipt.

If a licence is required due to proposed works to a building containing a bat roost, a bat method statement will need to be produced for submission with the planning application. This document will need to outline the mitigation and compensation measures required in order to safeguard bats throughout the duration of development.

Due to the roost switching behaviours that have been shown and identified during the bat presence / absence surveys, there remains a risk that buildings that have not been found to be in use during the surveys may still be used on an occasional basis by roosting bats. As such, a licenced and suitability qualified ecologist should be present to act as an ECoW and to an undertake a pre-commencement endoscope inspection of any buildings that are to be subject to demolition and destructive works.

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

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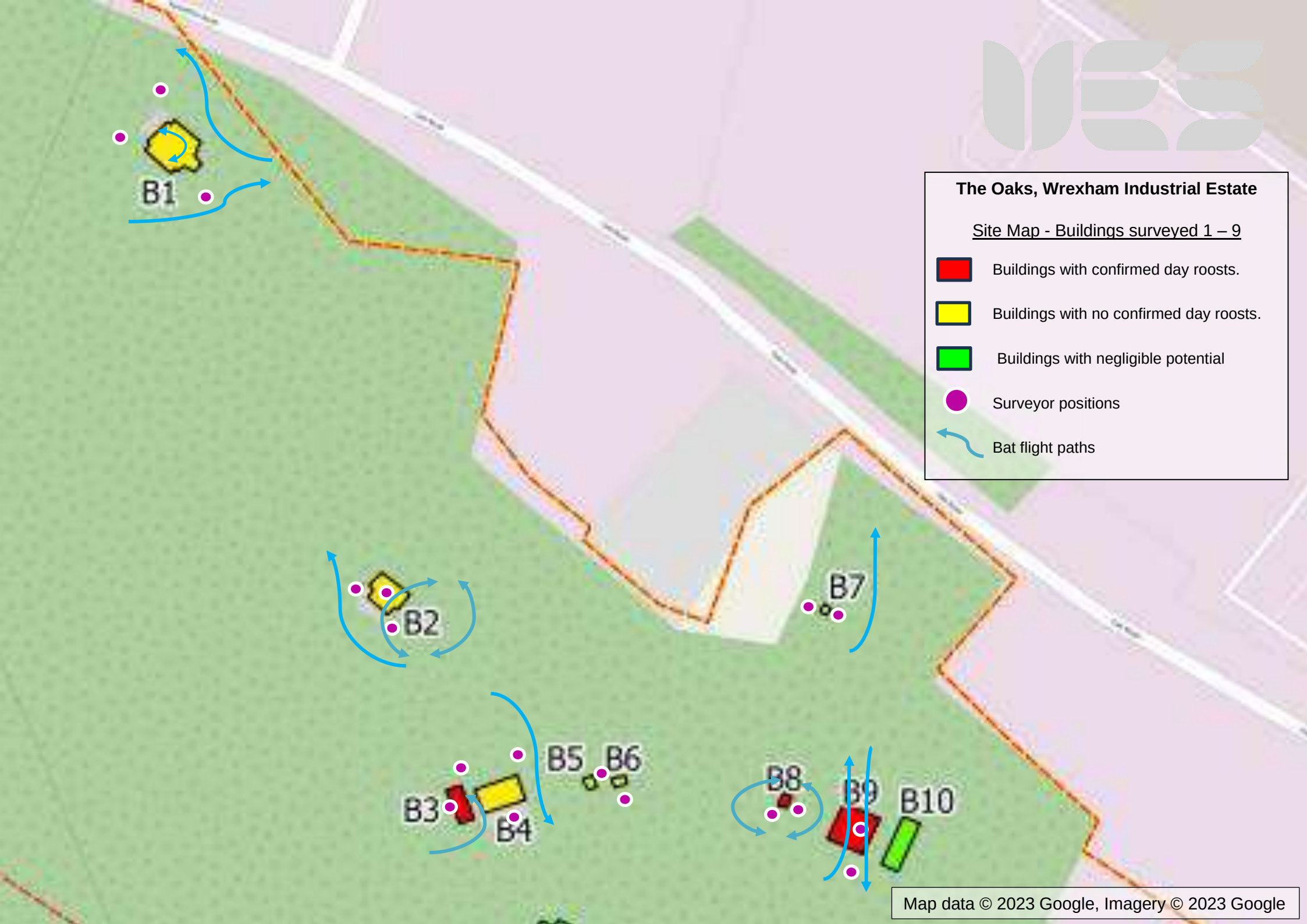
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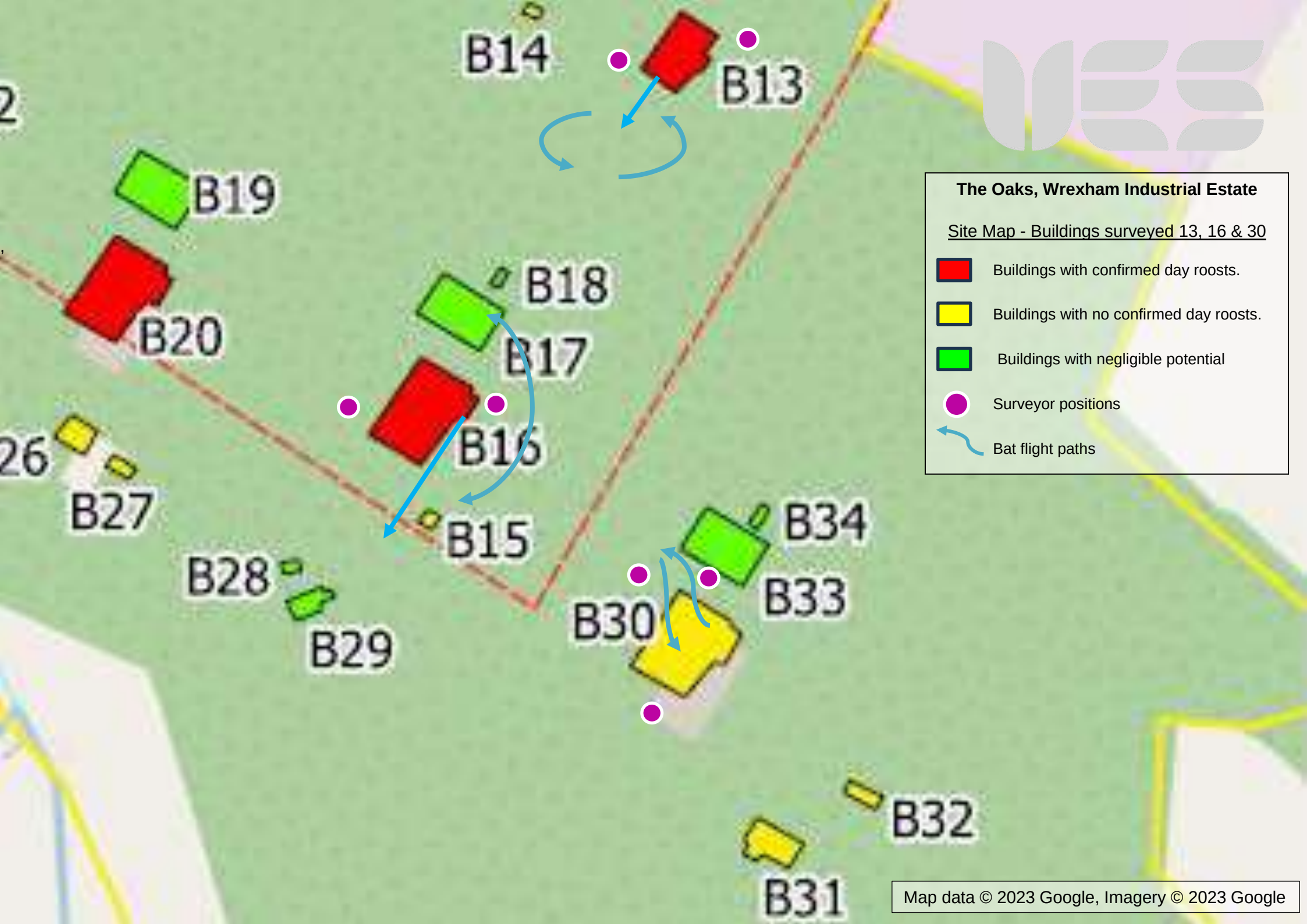
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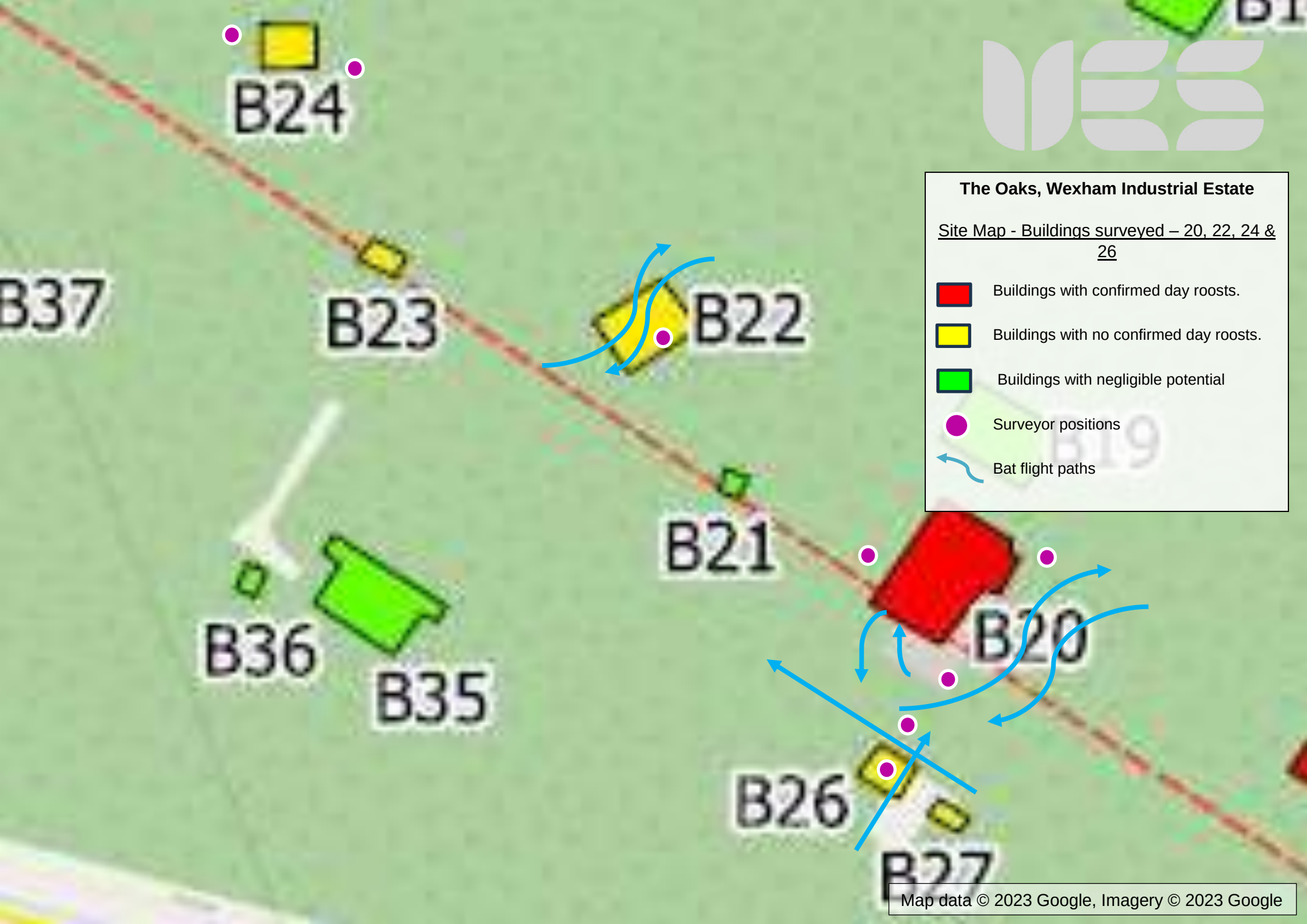
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APPENDICES

Appendix 1 – Bat presence / absence survey plan


B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
The Oaks, Wrexham Industrial Estate
Site Map - Buildings surveyed 1 – 9
Buildings with confirmed day roosts.
Buildings with no confirmed day roosts.
Buildings with negligible potential
Surveyor positions
Bat flight paths
Map data © 2023 Google, Imagery © 2023 Google


B14
B13
B19
B18
B20
B17
B16
B27
B15
B28
B34
B33
B30
B29
B32
B31
The Oaks, Wrexham Industrial Estate
Site Map - Buildings surveyed 13, 16 & 30
Buildings with confirmed day roosts.
Buildings with no confirmed day roosts.
Buildings with negligible potential
Surveyor positions
Bat flight paths
Map data © 2023 Google, Imagery © 2023 Google

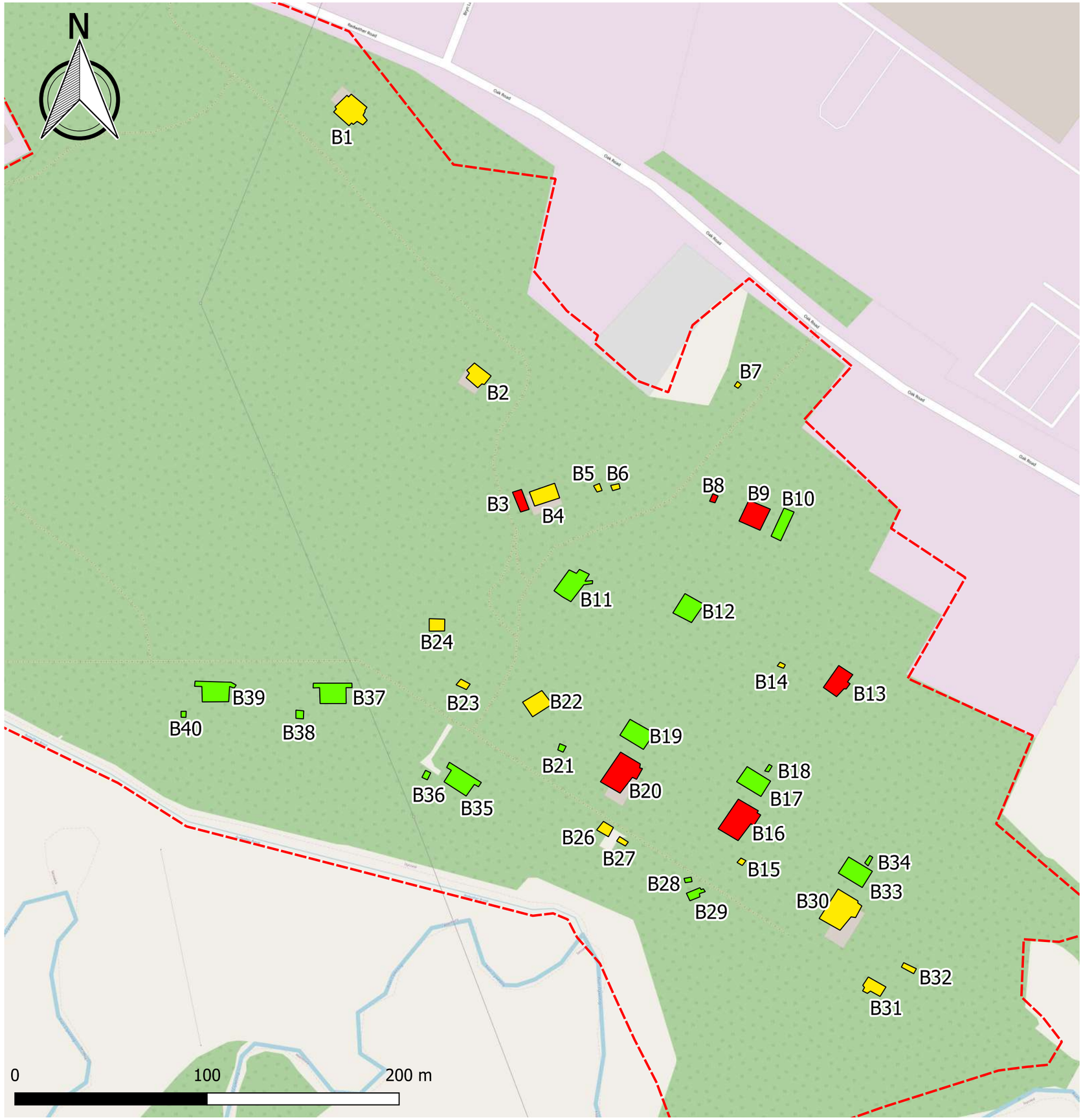

B24
B37
B23
B22
B21
B36
B35
B20
B26
B27
The Oaks, Wexham Industrial Estate
Site Map - Buildings surveyed – 20, 22, 24 & 26
Buildings with confirmed day roosts.
Buildings with no confirmed day roosts.
Buildings with negligible potential
Surveyor positions
Bat flight paths
Map data © 2023 Google, Imagery © 2023 Google


B25
The Oaks, Wrexham Industrial Estate
Site Map – Building 25
Building with no confirmed day roosts.
Surveyor positions
Bat flight paths
Map data © 2023 Google, Imagery © 2023 Google

Appendix 2 – Roost plan

Bat Presence / Absence Report

Site: The Oaks, Wrexham
NGR: SJ 38786 49263
Author: Ysobella Cox
Date: 06.12.2024





Key

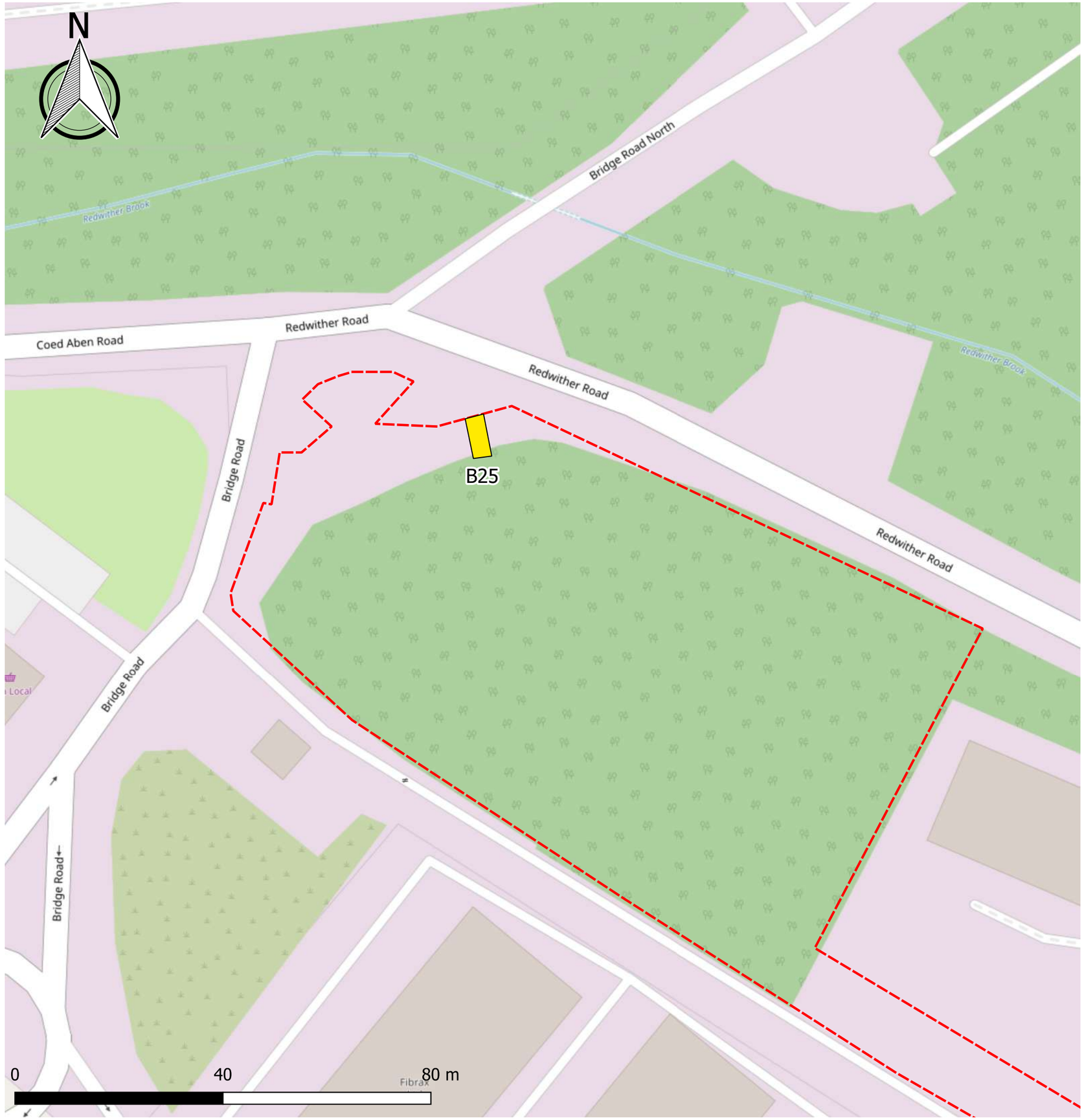
- Building containing confirmed bat roost. Works to be completed under a European Protected Species License issued by Natural Resources Wales
- Building with no confirmed bat roosts but potential to support roosting bats. Works to be completed under a non-licenced bat method statement.
- Building with negligible bat roosting potential. No further mitigation or compensation measures required.
- Survey Boundary

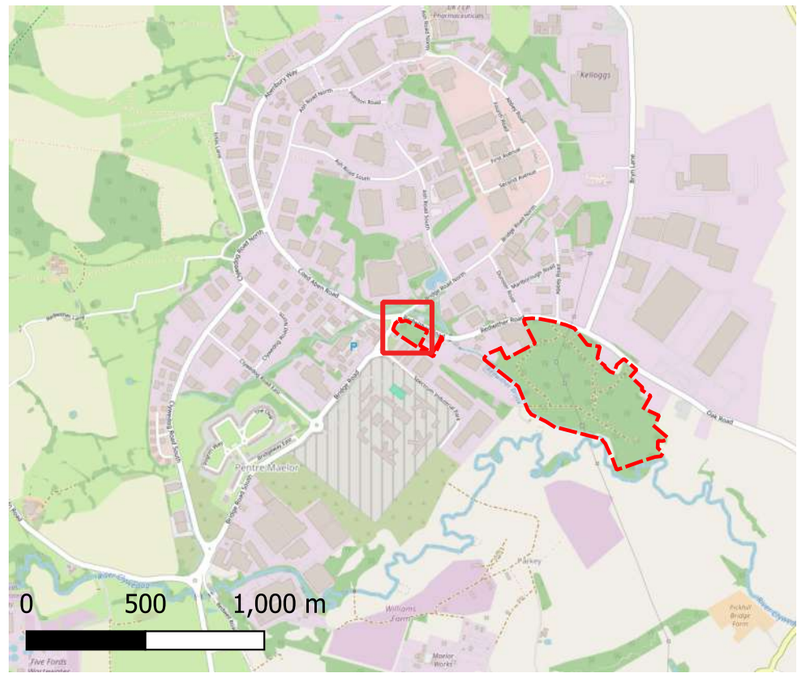
THIS PLAN IS BASED UPON OpenStreetMap® AND IS OPEN DATA, LICENSED UNDER THE OPEN DATA COMMONS OPEN DATABASE LICENCE (ODbl) BY THE OpenStreetMap FOUNDATION.

THIS PLAN IS ISSUED BY UNITED ENVIRONMENTAL SERVICES LTD SUBJECT TO THE CONDITION THAT IT IS NOT COPIED EITHER IN WHOLE OR IN PART OR DISCLOSED TO THIRD PARTIES UNLESS PRIOR WRITTEN AUTHORISATION IS GIVEN.

Bat Presence / Absence Report

Site: The Oaks, Wrexham
NGR: SJ 38786 49263
Author: Ysobella Cox
Date: 06.12.2024





Key

- Building containing confirmed bat roost. Works to be completed under a European Protected Species License issued by Natural Resources Wales
- Building with no confirmed bat roosts but potential to support roosting bats. Works to be completed under a non-licenced bat method statement.
- Building with negligible bat roosting potential. No further mitigation or compensation measures required.
- Survey Boundary

THIS PLAN IS BASED UPON OpenStreetMap® AND IS OPEN DATA, LICENSED UNDER THE OPEN DATA COMMONS OPEN DATABASE LICENCE (ODbl) BY THE OpenStreetMap FOUNDATION.

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Appendix 3 – 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 4 – Photographs



Photograph 1 – Building 5.



Photograph 2 – Gap beneath chimney in Building 5.



Photograph 3 – Small gaps within the brickwork on Building 6.



Photograph 4 – Crack in brickwork inspected with endoscope on Building 15.



Photograph 5 – Weep hole features inspected by endoscope on Building 23.



Photograph 6 – Gap within the internal wall on Building 26 with bat droppings below.



Photograph 7 – Feature inspected with an endoscope on Building 31.



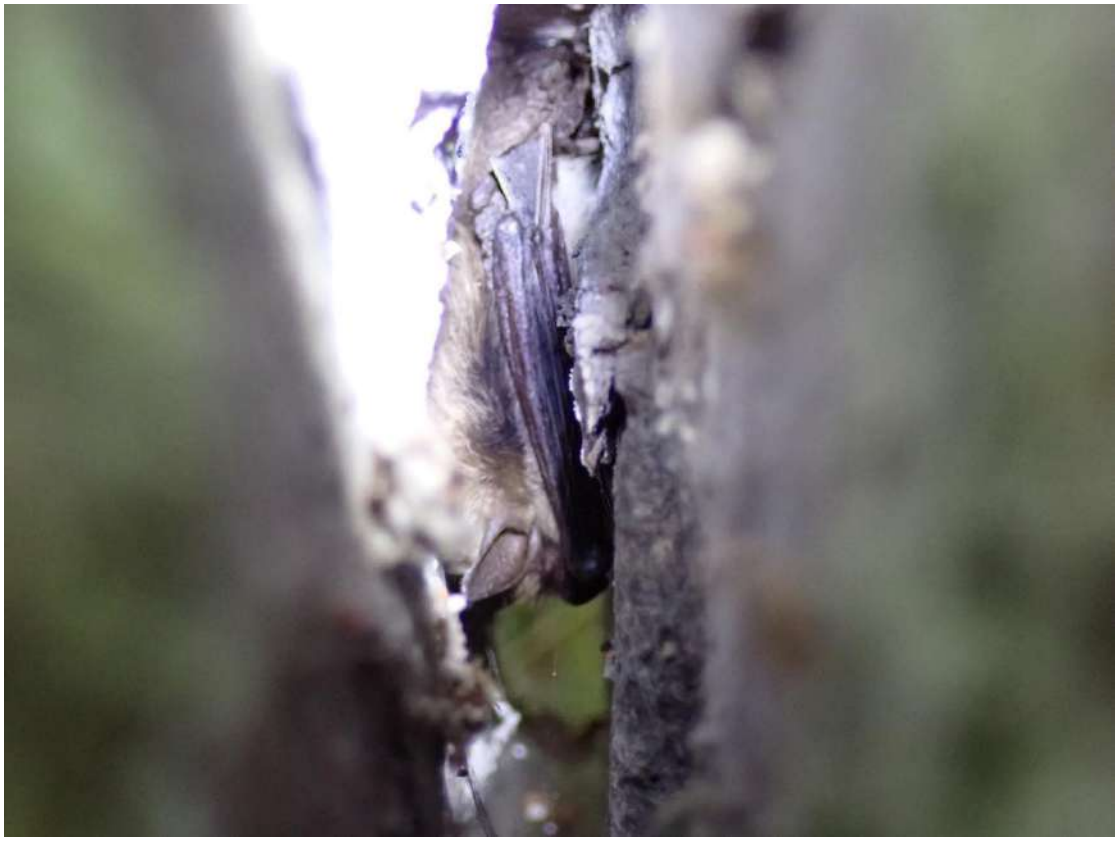
Photograph 8 - Building 31.



Photograph 9 – Crack within Building 31 inspected with endoscope.



Photograph 10 – Roost location of Myotis sp. within Building 3 **(Roost 1).**



Photograph 11- Myotis bat within Building 3 **(Roost 1).**



Photograph 12 – Building 8, *Pipistrelle sp*. roosting within double skinned wall **(Roost 2).**



Photograph 13 - *Pipistrelle sp.* identified within wall cavity of Building 8 **(Roost 2).**



Photograph 14 – Location of *Pipistrelle sp.* within Building 8 **(Roost 3).**



Photograph 15 – Building 9 central area accessed via tunnels.



Photograph 16 – Unknown species of bat emerging from the tunnel of Building 9 **(Roost 4).**



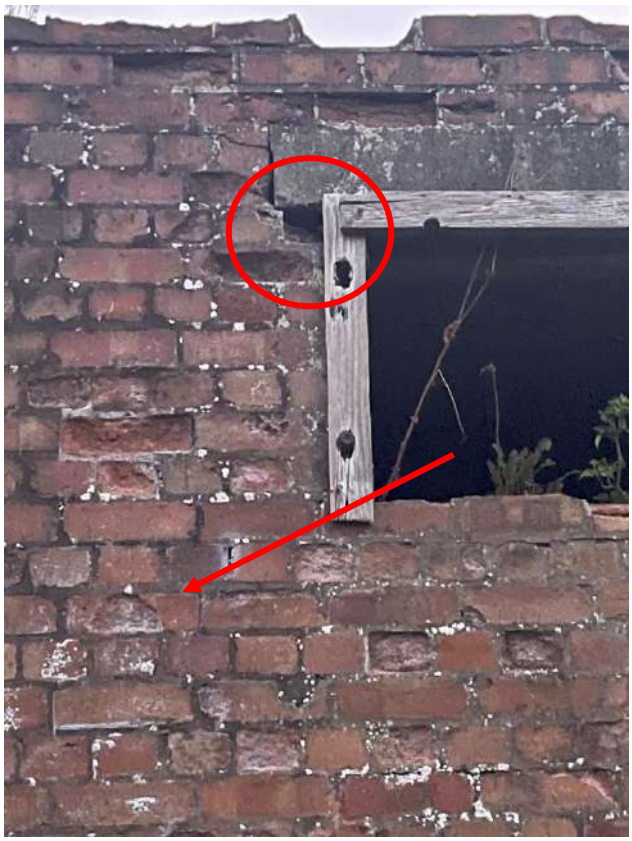
Photograph 17 – Building 20, soprano pipistrelle roost location **(Roost 5).**



Photograph 18 – Unknown species emerged from doorframe on Building 20 **(Roost 8).**



Photograph 19 – Northern aspect of Building 13.

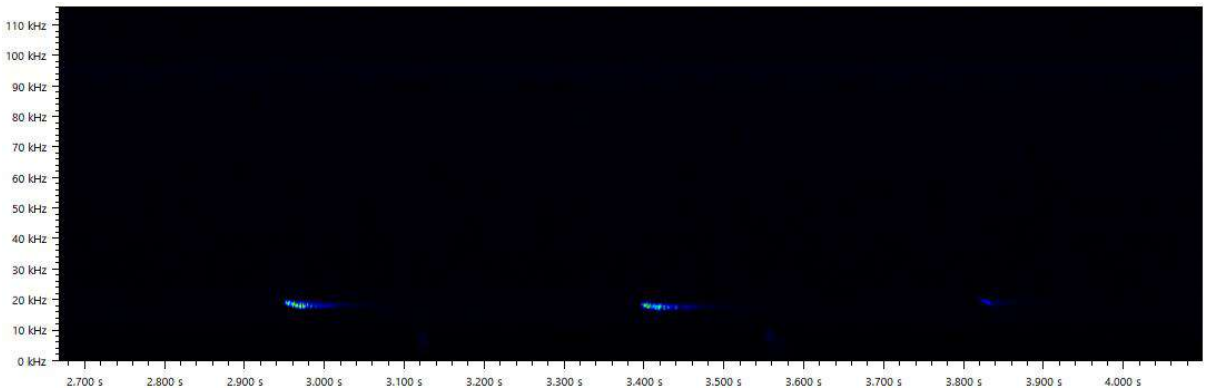


Photograph 20 – Access route for common pipistrelle on eastern aspect **(Roost 6).** Gap between timber window frame and brick **(Roost 9).**

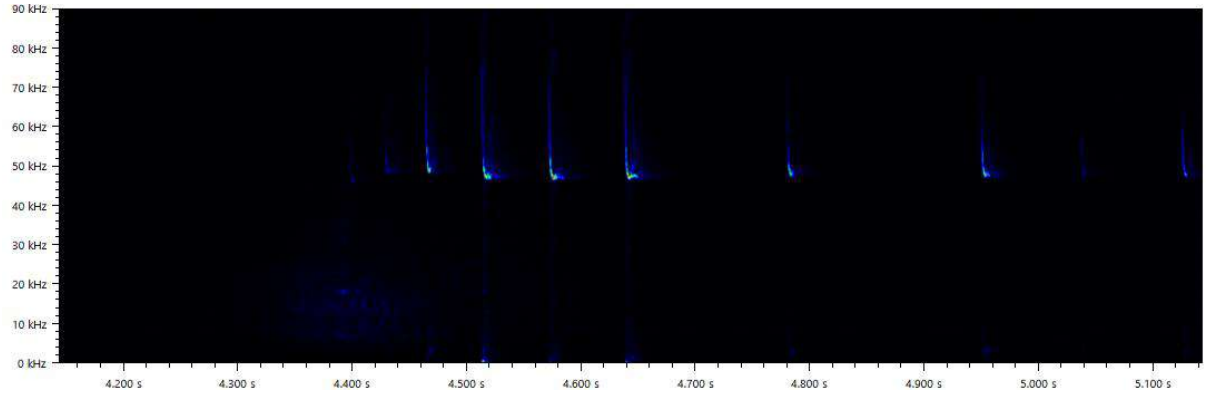


Photograph 21 – Building 16, unknown species of bat emerged from the building **(Roost 8).**

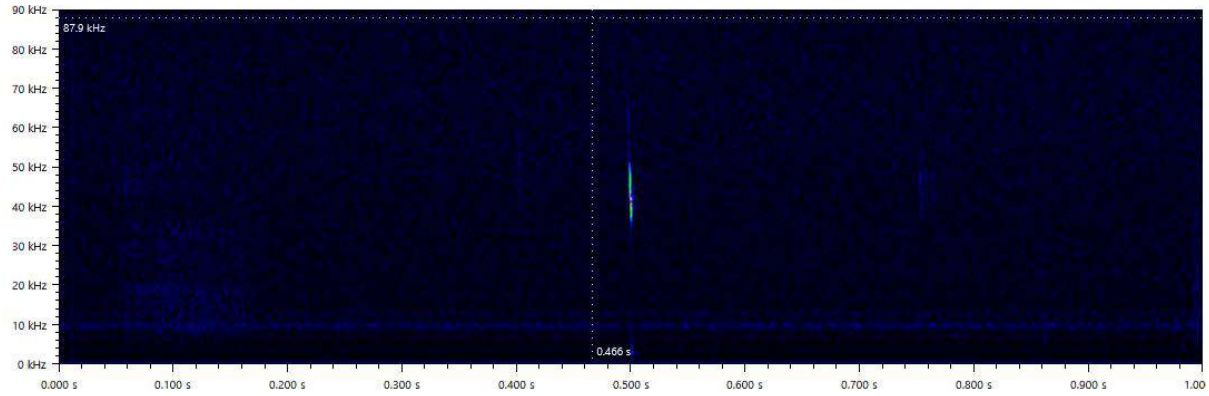
Appendix 5 – Presence / absence survey sonograms



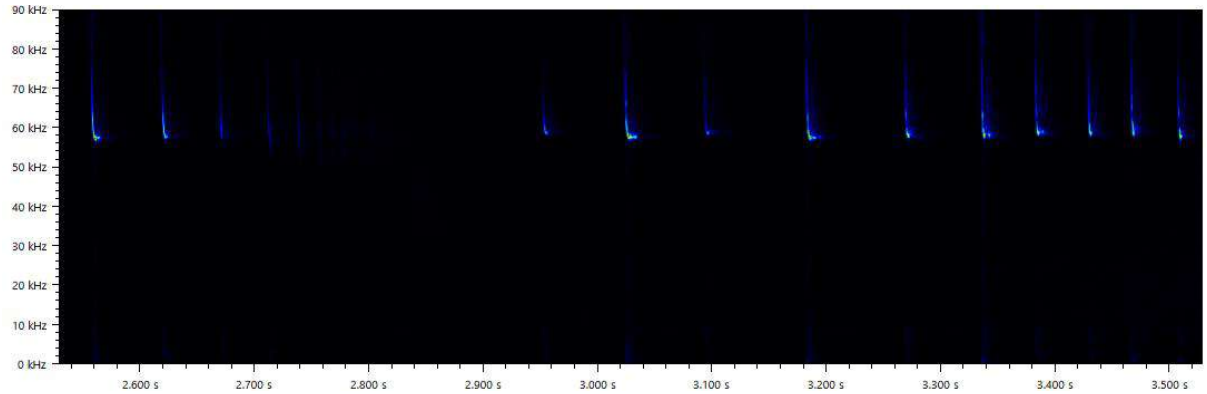
Sonogram 1 – Noctule recorded on 4th August 2023 at 22:23.



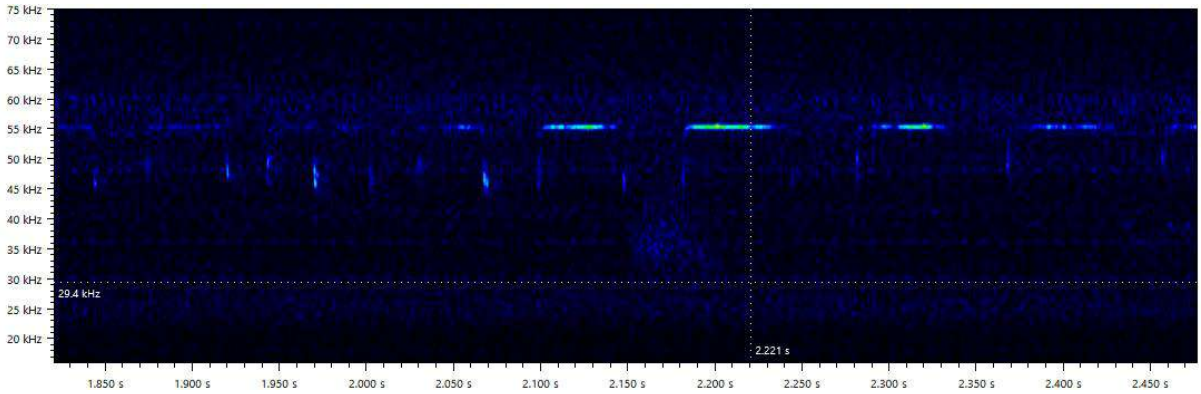
Sonogram 2 – Common pipistrelle recorded on 8thAugust 2023 at 21:45.



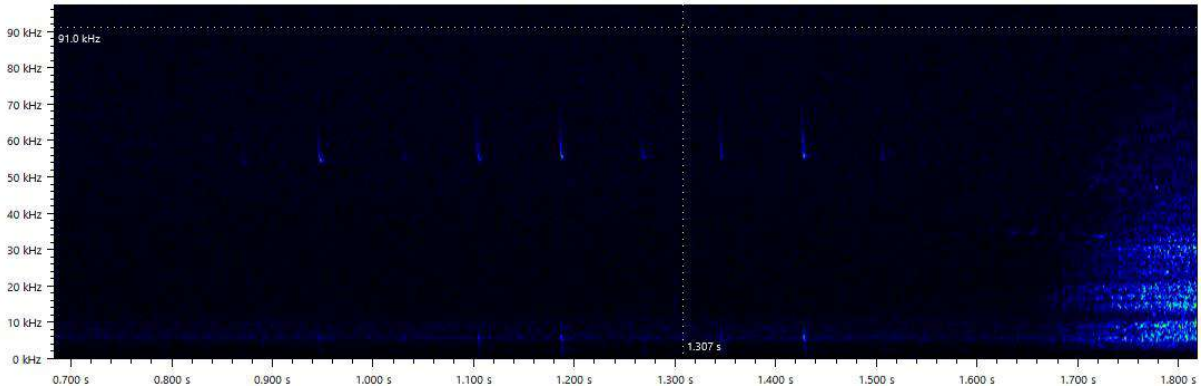
Sonogram 3 – *Myotis sp.* recorded on 13th August at 21:40.



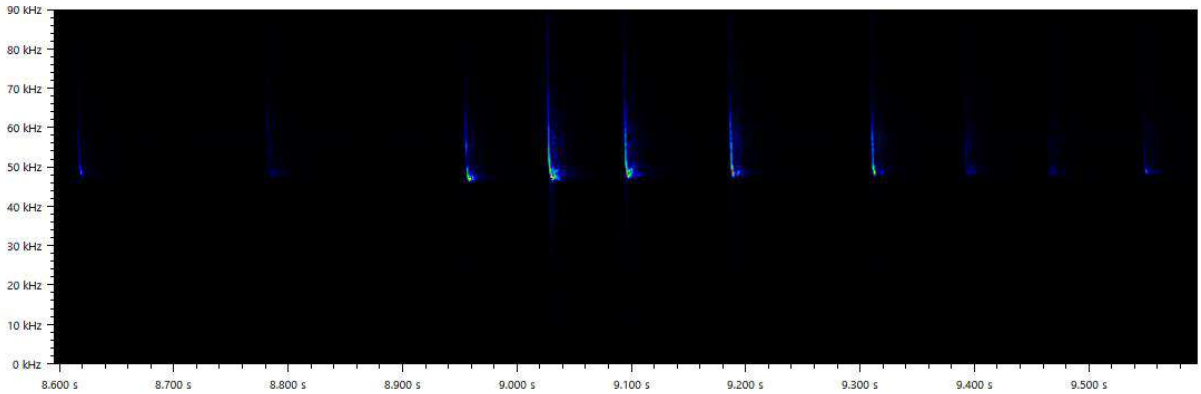
Sonogram 4 – Soprano pipistrelle recorded on 29th August 2023 at 21:09.



Sonogram 5 – Lesser horseshoe recorded on 14th September 20:09.



Sonogram 6 – Soprano pipistrelle re-entry to Building 20 on 7th August 2023 at 05:05 **(Roost 5).**



Sonogram 7 – Common pipistrelle re-entry to Building 13 on 15th September at 06:20 **(Roost 9).**

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 - 2024). 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.