



**Former Surgery,
Aberfan**

Bat and Nesting Bird Survey Report

January 2024

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Summary

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Brief and Site Location	This report presents the findings of a bat and nesting bird survey of the Former Surgery located at 2 Cottrell Street, Aberfan, CF48 4QU (Ordnance Survey Grid Reference: SO 0719 0020).
Proposed Works	The development proposals involve the conversion of the Former Surgery (hereafter referred to as 'the building') into residential flats.
Survey Methodology	The survey comprised the following: • A preliminary bat roost assessment of the building searching for signs of bats and nesting birds; • Two dusk emergence surveys of the building; and • Five-night static detector survey of the building.
Survey Results	No signs of bats were found during the internal and external inspection of the building. No bats emerged from or interacted closely with the building. The five-night static detector survey recorded brown long-eared bats roosting within the building.
Evidence of Nesting Birds	The building had four defunct birds' nest that were recorded during the inspection. All nests were unoccupied at the time of the survey.
Predicted Impacts of Development on Bats and Nesting Birds	Bats are roosting within the building and in the absence of mitigation the bat roosts would be lost during the works. Mitigation is required to ensure that the favourable conservation status of bats is maintained within the site. The proposals are predicted to have a direct impact on birds that have historically nested within the building.
Mitigation and Compensation of Proposed Impacts	Mitigation and enhancement measures for bats and nesting birds are recommended in Section 6 of this report.
Licensing Requirements for Bats	A bat licence from Natural Resources Wales (NRW) will be required prior to works being undertaken on the building. The licence application will need to be accompanied by a detailed method statement which sets out the activities to be carried out under the licence to ensure that bats will not be harmed during development. The method statement must ensure that provision is made for new or continued roosting opportunities after the completion of the development.
Required Actions	Recommendations are outlined in Section 6 of this report.

1. Introduction

1.1. Brief and Site Location

This report presents the findings of a bat and nesting bird survey of the Former Surgery located at 2 Cottrell Street, Aberfan, CF48 4QU (Ordnance Survey Grid Reference: SO 0719 0020)¹. The area proposed for development is referred to as the 'building' throughout the remainder of this report.

The building is within the boundary of Merthyr Tydfil County Borough Council.

1.2. Site Description

The building is located on the eastern edge of the village of Aberfan, approximately 6.5km south of the town of Merthyr Tydfil. Open fields lie 0.1km to the east and 0.2km to the west of the site. The River Taff is 0.06km to the east of the site. The wider landscape to the north and west of the site is largely residential housing.

The site's location is shown on Plan 1: Location Plan.

1.3. Proposed Works

The development proposals involve the conversion of the building into residential flats.

1.4. Legislation and Planning Policy

1.4.1. Bats

All UK bats are protected species. Their breeding sites or resting places² (roosts) are fully protected under the Wildlife and Countryside Act 1981³ (as amended) and the Conservation of Habitats and Species Regulations 2017⁴ which continues to apply in UK law through the Conservation of Habitats and Species (Amendment) (EU Exit) [CHSAEU] Regulations 2019⁵. Works affecting bats are subject to licensing procedures by Natural Resources Wales (NRW). The legal protection and licensing procedures are summarised in Appendix 1.

¹ Latitude and Longitude: 51.692852, -3.3441372 / what3words: poetry.worm.jungle

² Resting places are defined as '*areas that are essential to sustain an animal or group of animals when they are not active*' (European Commission, Directorate-General for Environment, 2022). Resting places that are used regularly, either within or between years, must be protected even when not occupied.

³ <https://www.legislation.gov.uk/ukpga/1981/69>

⁴ <https://www.legislation.gov.uk/uksi/2017/1012/contents/made>

⁵ <https://www.legislation.gov.uk/ukdsi/2019/9780111179512>

1.4.2. Nesting Birds

All wild British birds (whilst building nests, nesting and sitting on eggs) and their nests and eggs (with certain limited exceptions⁶) are protected by law under Section 1 of the Wildlife and Countryside Act 1981⁷ (as amended) and the Countryside and Rights of Way Act 2000⁸. Some species, such as barn owls (*Tyto alba*), are listed in Schedule 1 and have additional protection from disturbance during the breeding season, as do their nests, eggs and dependent young.

1.5. Survey Scope

The survey comprised the following:

- A preliminary bat roost assessment which included a survey for nesting birds;
- Two dusk emergence surveys; and
- Five-night static detector survey.

1.6. Reporting

This report aims to:

- Outline the survey methodology used;
- Present the results of the survey;
- Provide an interpretation of the survey results;
- Determine the need for further targeted surveys; and
- Provide suitable recommendations in line with planning policy and wildlife law, including potential licensing requirements, mitigation, compensation and enhancement measures.

⁶ Details of the exceptions are available at <https://naturalresources.wales/permits-and-permissions/species-licensing/list-of-protected-species/bird-licensing/bird-licences/?lang=en>

⁷ <https://www.legislation.gov.uk/ukpga/1981/69>

⁸ <https://www.legislation.gov.uk/ukpga/2000/37>

2. Methods

2.1. Desk Study

Maps and aerial photographs of the site and surrounding area, including existing habitats, were assessed. A search for statutory and non-statutory conservation designated sites for bats within 10km was undertaken using NRW Geographic Information System (GIS) data. A 2km search was undertaken for all other statutory and non-statutory conservation designated sites.

A local planning portal search was undertaken. This involved looking for other sites, within the same postcode area, which have previously had bat surveys submitted as a part of their planning applications.

A South-East Wales Biodiversity Records Centre (SEWBReC) search was undertaken to search for records of bats and other protected species within 1km of the building.

2.2. Field Study

2.2.1. Daytime Internal and External Inspection

A systematic search of the exterior and interior of the building was undertaken, looking for features that bats could use for entering/exiting and roosting⁹. In addition, a search was made for the presence of bats or evidence of bat use, such as droppings, feeding remains, urine staining, scratch marks and the remains of dead bats. The survey was undertaken on 13th December 2022 by Megan Fowler¹⁰ and Charley Kennedy¹¹. A high-powered torch (Clulite), binoculars and a ladder were available for use as appropriate during the survey.

2.2.2. Assessment of Bat Roosting Suitability

The value of the site for bats (and any potential roost sites therein) was assessed, in accordance with Table 4.1 of the Bat Surveys for Professional Ecologists (Collins, 2016) (see Appendix 2). The assessment was based on the relative abundance and quality of potential roost sites, and the habitat features within both the site and the surrounding landscape suitable for roosting, foraging and commuting bats.

2.2.3. Dusk Emergence Surveys

The evening dusk emergence surveys commenced 15 mins before sunset and finished 90 mins after sunset.

⁹ Bats can utilise gaps approximately 8mmx17mm in size (The Bat Conservation Trust, Cluster-flies leaflet mentions 8mm by 20mm whilst the Bats and Former surgery s leaflet states 9mm by 17mm).

¹⁰ Megan graduated in Zoology with Climate Change from Bangor University. She is currently receiving training from Acer Ecology, working as an Assistant Ecologist, gaining ecological surveying experience. She is listed as an accredited agent on Paul Hudson's bat licence (S091671-1). Further details of Megan's qualifications and experience can be found at: <https://uk.linkedin.com/in/megan-fowler-4a1269206>.

¹¹ Charley graduated with an upper second-class Bachelor of Sciences in Natural History and Media, from the University of South Wales, in July 2022. She is currently working for Acer Ecology as an Assistant Ecologist and completing her training in basic bat ecology and bat survey techniques, including dusk emergence and dawn re-entry surveys and preliminary roost assessments. She is listed as an accredited agent on Paul Hudson's bat licence (S091671-1). Further details of her qualifications and experience can be found at <https://www.linkedin.com/mwlite/in/charley-kennedy-1bab3a193>.

Surveyors were positioned at viewpoints where they had good sight of all elevations of the building, so that all potential roosting features could be observed to detect any bat emerging from, or re-entering, the building. Bat activity near the building was recorded to help ascertain flight lines.

Becky Corley and Charlotte Ingram undertook the first dusk emergence survey on 05/06/2023 and Charlotte Ingram and Gavin Lavender undertook the second dusk emergence survey on 14/08/2023. Surveyor details can be found in Appendix 5. The surveyors were equipped with Elekon Batlogger M bat detectors and Anabat Scout detectors.

Each surveyor was also equipped with a Nightfox red infrared camera each supplemented with a Nightfox XB5 850nm Infrared LED flashlight. Infrared cameras were used because they are always on and not prone to distraction and they aid in the detection of bats in low light levels from 45 minutes after sunset until 90 minutes after sunset. Video footage was subsequently viewed using VLC media viewer.

2.2.4. Five-night static detector survey

An Anabat Express static detector was deployed within the building. The detector was set to record for a minimum period of 5 nights. The survey took place from 24th – 28th July 2023 (inclusive). Bat activity between dusk and dawn was recorded. Analysis of the bat survey data was made using the Analook analysis software to determine the number of bat passes recorded¹². The detector was sited in order to achieve the best results.

2.2.5. Survey for Nesting Birds

Searches were undertaken for both old and current birds' nests, as well as any signs which might indicate previous nesting activities such as piles of discarded nesting materials or large aggregations of guano.

2.2.6. Constraints

Temporal Constraints

An ecological survey can only identify what is present on site at the time the survey is conducted. However, habitat usage by species can change over time.

Timing

The time of year when the preliminary roost assessment was carried out coincides with the period when most bats have retreated to winter hibernation sites and are most difficult to detect. However, signs of roosting activity from previous summers may still be identified and the potential of a building can be assessed outside the active season. Therefore, the timing of the inspection is unlikely to have significantly constrained the survey.

¹² A bat pass is defined as a single sound file containing a species' echolocation call. Where multiple species are recorded on the sound file, the calls by each species was tallied.

3. Baseline Ecological Conditions

3.1. Desk Study

3.1.1. Bats

Desk Study Results

SEWBrEC¹³ returned a total of four records of bat roosts within 1km of the site. The roost records are summarised in the table below.

Table 1: Bat Roost Records

Species	Total Number of Records	Distance to Nearest Record	Most Recent Record	Maximum Count
Bat (<i>Chiroptera</i>)	One	0.2km from the development site	2005	N/A
Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>)	One	0.8km from the development site	2019	14
Common pipistrelle (<i>Pipistrellus pipistrellus</i>)	One	0.8km from the development site	2019	19
Daubenton's bat (<i>Myotis daubentonii</i>)	One	0.8km from the development site	2019	Nine
Noctule (<i>Nyctalus noctula</i>)	One	0.8km from the development site	2019	N/A

In addition to the roost records, SEWBrEC returned many records of bats foraging or commuting within 1km of the site. These included: noctule, common pipistrelle, soprano pipistrelle, *Myotis sp.*, Natterer's bat (*Myotis nattereri*), brown long-eared (*Plecotus auritus*) and Nathusius's pipistrelle (*Pipistrellus nathusii*).

Bat Roosts Reported in Planning Applications Within the Same Postcode

The planning portal search¹⁴ returned no bat roost records from a search of sites within the same postcode area as the proposed development.

3.1.2. Notable Plant Species

SEWBrEC returned records of 20 rare and/or 'notable' plants (including species regarded as 'Locally Important', LBAP species and UK Red Data Book-listed species).

Two priority plant species were recorded within 1km of the site, namely: bluebell (*Hyacinthoides non-scripta*) and cornflower (*Centaurea cyanus*).

One plant listed as species of conservation concern was recorded within 1km of the site, namely: charlock (*Sinapis arvensis*).

¹³ SEWBrEC unique reference number: 0223-699

¹⁴ <https://publicaccess.merthyr.gov.uk/online-applications/simpleSearchResults.do?action=firstPage>

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Nine plants listed as locally important species were recorded within 1km of the site, namely: vipers bugloss (*Echium vulgare*), burnet rose (*Rosa spinosissima*), bird cherry (*Prunus padus*), brown sedge (*Carex disticha*), water chickweed (*Myosoton aquaticum*), wild mignonette (*Reseda lutea*), stone parsley (*Sison amomum*), small cudweed (*Filago minima*), and grass vetchling (*Lathyrus nissolia*).

3.1.3. Birds

SEWBrEC returned records of 28 priority bird species within 1km of the site, namely: goshawk (*Accipiter gentilis*), skylark (*Alauda arvensis*), kingfisher (*Alcedo atthis*), tree pipit (*Anthus trivialis*), black-headed gull (*Chroicocephalus ridibundus*), cuckoo (*Cuculus canorus*), reed bunting (*Emberiza schoeniclus*), peregrine (*Falco peregrinus*), kestrel (*Falco tinnunculus*), pied flycatcher (*Ficedula hypoleuca*), brambling (*Fringilla montifringilla*), herring gull (*Larus argentatus*), linnet (*Linaria cannabina*), red kite (*Milvus milvus*), curlew (*Numenius arquata*), osprey (*Pandion haliaetus*), house sparrow (*Passer domesticus*), dunnoek (*Prunella modularis*), bullfinch (*Pyrrhula pyrrhula*), starling (*Sturnus vulgaris*), redwing (*Turdus iliacus*), song thrush (*Turdus philomelos*), fieldfare (*Turdus pilaris*), and barn owl (*Tyto alba*).

23 birds listed as species of conservation concern were recorded within 1km of the site, namely: long-tailed tit (*Aegithalos caudatus*), mallard (*Anas platyrhynchos*), meadow pipit (*Anthus pratensis*), swift (*Apus apus*), grey heron (*Ardea cinerea*), greenfinch (*Chloris chloris*), dipper (*Cinclus cinclus*), whitethroat (*Curruca communis*), swallow (*Hirundo rustica*), lesser black-backed gull (*Larus fuscus*), grey wagtail (*Motacilla cinerea*), wheatear (*Oenanthe oenanthe*), cormorant (*Phalacrocorax carbo*), willow warbler (*Phylloscopus trochilus*), green woodpecker (*Picus viridis*), goldcrest (*Regulus regulus*), whinchat (*Saxicola rubetra*), mistle thrush (*Turdus viscivorus*), coot (*Fulica atra*), redstart (*Phoenicurus phoenicurus*), sand martin (*Riparia riparia*), tufted duck (*Aythya fuligula*), and spotted redshank (*Tringa erythropus*).

SEWBrEC returned no birds listed as locally important species within 1km of the site.

Two birds listed as other bird species (i.e. invasive species) were recorded within 1km of the site, namely: Canada goose (*Branta canadensis*), and Eurasian eagle-owl (*Bubo bubo*).

3.1.4. Dormice

SEWBrEC returned a total of one dormouse record within 1km of the site, located 0.8km to the north-east of the site dating from 2021.

3.1.5. Great Crested Newt

SEWBrEC did not return any records of GCN within 1km of the site. Additionally, no records of amphibians were returned within 1km of the site.

3.1.6. Otters

SEWBrEC returned a total of six otter records within 1km of the site. The nearest record was made in 2005, approximately 0.2km away towards the south of the site.

Otters are known to be present on much of the River Taff (SEWBrEC data 2023), approximately 0.1km east of the site, although there are no records in the immediate vicinity of the site itself.

3.1.7. Water Vole

SEWBrEC did not return any records of water vole from within 1km of the site.

3.1.8. White-Clawed Crayfish

SEWBrEC did not return any records of WCC from within 1km of the site.

3.1.9. Badgers

SEWBrEC returned one badger record within 1km of the site. The record was made in 2020, approximately 0.7km away towards the north-west of the site, comprising an adult crossing the A470.

3.1.10. Reptiles

SEWBrEC returned three records of reptiles within 1km of the site. These included:

- A record of slow-worm (*Anguis fragilis*), one common lizard (*Zootoca vivipara*), and one grass snake.

3.1.11. Marsh Fritillary and Small Pearl-Bordered Fritillary

SEWBrEC did not return any records of marsh fritillary from within 1km of the site.

SEWBrEC returned a total of three records of small pearl-bordered fritillaries within 1km of the site. The nearest record was made in 2007, approximately 0.8km away towards the south-east of the site.

3.1.12. Other Mammals

SEWBrEC returned seven records of other mammals within 1km of the site, comprising: six common hedgehog (*Erinaceus europaeus*) and one polecat (*Mustela putorius*).

3.1.13. Invertebrates

SEWBrEC returned a total of 11 notable invertebrate records from within the study area.

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Seven priority invertebrate species were recorded within 1km of the site, namely: small pearl-bordered fritillary (*Boloria selene*), broom moth (*Ceramica pisi*), small heath (*Coenonympha pamphilus*), small square-spot (*Diarsia rubi*), grayling (*Hipparchia semele*), buff ermine (*Spilosoma lutea*), and cinnabar (*Tyria jacobaeae*).

No invertebrates listed as species of conservation concern were recorded within 1km of the site.

Four invertebrates listed as locally important species were recorded within 1km of the site, namely: white-tailed bumblebee (*Bombus lucorum*), buff-tailed bumblebee (*Bombus terrestris*), beautiful demoiselle (*Calopteryx virgo*), and golden-ringed dragonfly (*Cordulegaster boltonii*).

3.1.14. Protected Sites

The location of protected sites is shown in Plan 2: Protected Sites.

Statutory Sites Notified for Bats (Special Areas of Conservation (SACs)) or Sites of Special Scientific Interest (SSSIs) Within 10km

There are no SACs or SSSIs designated for bats located within 10km of the site.

Other Protected Sites Within 2km

There are no statutory designated sites such as SACs, SSSIs, National Nature Reserves (NNRs) or Local Nature Reserves (LNRs) either within the proposed development site or within 2km of the building.

Non-statutory Protected Sites

Sites of Importance for Nature Conservation (SINCs)

There are 11 SINCs situated within 2km of the development site. These sites are rich in wildlife and are considered important for their local biodiversity value. The table below summarises these sites¹⁵.

Table 2: SINCs located within 2km of the site

Site Name	Site Summary	Distance from Development
Afon Taff ¹⁶	Associated habitats are semi-natural woodland, including areas of ancient semi-natural woodland and linear wet woodlands. There are also numerous neutral grasslands, scrub patches and bracken stands, as well as small areas of marshy grassland and tall herb vegetation. Otters occur throughout the length of the river which is known to be of value to a wide variety of birds, fish, bats and reptiles.	0.03km to the east
West Aberfan	The southern areas of the site support damp neutral grasslands, semi-natural broadleaved woodlands along minor streams and bracken stands. The neutral grasslands are generally species-rich and include	0.3km to the west

¹⁵https://www.merthyr.gov.uk/resident/planning-and-former_surgery_-_control/replacement-local-development-plan-2016-2031/first-replacement-local-development-plan-2016-2031/

¹⁶<https://www.merthyr.gov.uk/media/4435/sd27-sites-of-importance-for-nature-conservation-background-paper-june-2018.pdf>

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	both unimproved and semi-improved areas. The northern portion of the site consists of a colliery spoil substrate that has revegetated with neutral grasslands and mixed- species scrub.	
Merthyr Vale	These comprise mainly semi-natural woodlands, acid grasslands, dry heathlands and bracken slopes, as well as dense and scattered scrub, marshy grassland and neutral grassland.	0.3km to the east
Mynydd Merthyr	Chiefly dry acid grasslands on the upper slopes with several areas of inundation vegetation on tip plateaux and areas of bracken and marshy grassland. A small area of bilberry heath is also present.	0.6km to the west
Glamorganshire Canal	Ancient semi-natural woodlands on the valley sides adjacent to the course of the former Glamorganshire Canal. The site is important for a range of woodland birds.	0.7km to the north
Mynydd-y-Capel Common	Supports habitats characteristic of dry acid soils, particularly unimproved and semi-improved acid grasslands, with bracken slopes and small areas of heathland gorse scrub. There are numerous outcrops of acidic rock and small disused quarries.	0.8km to the east
Tarren-y-Gigfran	Semi-upland valley side slopes above the A470, including a large disused quarry with screes and outcrops, and semi-improved acid grassland. Also includes numerous areas of semi-natural woodland, including ancient semi-natural woodland. A second, smaller parcel of land to the west of the main part of the site comprises a hilltop heathland. The site is partially enclosed by conifer plantation.	0.8km to the south
Cnwc	Semi-upland Ffridd slopes supporting mainly bracken and an upland mountain top with areas of acid grassland and dry heathland. Wetter soils on the lower slopes support mosaics of marshy grassland, acidic flush and wet heat; wooded valleys with small areas of ancient woodland and scattered mature trees on the bracken slopes. Two small disused reservoirs are present near the hilltop, one of which supports a regionally scarce plant.	1.1km to the north-west
Merthyr Common South	Large upland/semi-upland common along a hill ridge between two major rivers. Comprises extensive unimproved and semi-improved acid grasslands, dry heathlands and bracken slopes, acid flushes, marshy grasslands, wet heathlands, grass-heath and gorse scrub.	1.1km to the north
Cwm Fedw	Large area of grassland and wet woodland. Mainly semi-improved acid grasslands on the upper slopes, with semi-improved neutral grasslands and marshy grasslands on the lower slopes. There is ancient semi-natural woodland along the course of the Nant-y-Fedw.	1.2km to the east
Cwm Bargod	Semi- natural habitats including ancient semi-natural woodland, bracken slopes with scattered trees and scrub, marshy grassland, wet and dry heathland, acid grassland, swamp and acid flush. A very diverse and interesting set of habitats, probably exceeding SSSI designation criteria. Otter ranges along the Bargod Taf, and brown hare has also been recorded. The site is also important for a broad range of birds.	1.7km to the north-east

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Ancient Woodland Sites

The table below shows the ancient woodland sites within 2km of the site:

Table 3: Ancient Woodland Sites Within 2km

Ancient Woodland Site	Number within 2km of Site
Ancient Semi-Natural Woodland (ASNW) ¹⁷	41
Restored Ancient Woodland Sites (RAWS) ¹⁸	15
Plantations on Ancient Woodland Sites (PAWS) ¹⁹	13
Ancient Woodland Sites of Unknown Category ²⁰	Eight
Nearest Area of Ancient Woodland	An unnamed area of ASNW located 0.35km to the north-west of the site.

Protected Sites Summary

Given the small scale and localised nature of the proposed development, as well as the limited scope for impacts outside of the footprint of the proposed works, no adverse impacts to the protected sites are likely to occur. These sites are not mentioned further in this report.

3.2. Field Study

3.2.1. Lighting and Ecological Context

Lighting

The site is within an E2: Rural lighting zone, with low district brightness. Some streetlights are present on Cottrell Street, where the building is situated, which generate moderate levels of artificial lighting, decreasing the quality of foraging and commuting bat habitat²¹. However, the building is situated on the edge of the village, close to a rural area where only very limited artificial lighting is present.

Ecological Context

The habitats surrounding the building include lines of trees and scrub to the east, and a large patch of open grassland to the north. Some of the trees have been recently felled, however this does not have an effect on the overall value of the habitats. The River Taff is situated 12m to the east of the site, with open grassland bordering its eastern bank. Though not completely continuous, these habitats act as an ecological

¹⁷ Ancient Semi-Natural Woodland (ASNW) – broadleaf woodlands comprising mainly native tree and shrub species which are believed to have been in existence for over 400 years.

¹⁸ Restored Ancient Woodland Sites (RAWS) – woodlands which are predominately broadleaved now and are believed to have been continually wooded for over 400 years. These woodlands will have gone through a phase when canopy cover was more than 50% non-native conifer tree species and now have a canopy cover of more than 50 percent broadleaf.

¹⁹ Plantation on Ancient Woodland Sites (PAWS) – sites which are believed to have been continuously wooded for over 400 years and currently have a canopy cover of more than 50 percent non-native conifer tree species.

²⁰ Ancient Woodland Site of Unknown Category (AWSU) – woodlands which may be ASNW, RAWS or PAWS. These areas are predominantly in transition and existing tree cover is described as 'shrubs', 'young trees', 'felled' or 'ground prepared for planting'.

²¹ Lighting can impact on bats' roosting sites, commuting routes and foraging areas.

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corridor between the building and the surrounding landscape. Consequently, the site provides moderate-quality bat foraging and commuting habitat.

3.2.2. Description from the Perspective of Bat Habitat

The table below summarises the key features of the building.

Table 4: Key Features of the Former Surgery

Building Type	The building is a single-storey structure comprising concrete brick walls (Photo 1-4). Ivy covers the west and northern elevations of the building (Photo 5).
Roof	The roof is pitched and constructed from concrete roof tiles, with concrete ridge tiles (Photo 2). Moss growth is prevalent on all elevations, covering a large percentage of the roof (Photo 6). There are four lifted concrete roof tiles on the eastern and western elevations (Photo 7 and 8); however, the tiles are otherwise well-aligned and in good condition. The end tiles are capped, although gaps are present beneath the end tiles on the eastern elevation which could allow access by bats underneath the tiles (Photo 7). Guttering is present on all elevations. It appears in good condition on the eastern elevation; however, sections are missing on the northern and western elevations, creating a large gap through which ivy enters the interior.
Soffits, Fascias and Bargeboards	The timber soffit and fascias fit flush to the wall and are generally in good condition. However, there are gaps present at the apex of the southern elevation (Photo 9). The soffit box is damaged on the western elevation with large enough gaps for bats to gain direct access to the interior of the building (Photo 11-12). The timber bargeboards across all elevations are in good condition.
Vents	There is a vent present on the southern elevation which is missing a vent cover. This has created an open access tube for bats (Photo 15).
External Walls	The external walls are generally in good condition. However, ivy is growing on all elevations, most significantly on the northern and western elevations (Photo 4-5).
Windows and Doors	All windows present have been smashed, and have uPVC frames which are well-sealed into their apertures (Photo 11). Grates are present on each window, however the gaps in the grates are sizeable enough for bats to gain entry (Photos 5 and 14). One window grate is coming away from the wall on the northern elevation (Photo 14). The door on the southern elevation is gated and sits in a timber frame which is in good condition and is well-sealed to the wall. The glass panels are broken, providing a potential access point for bats (Photo 16). In addition, there are crevices created where the grates have come away from the window and these could be used by crevice dwelling bats (Photos 10 and 14).
Roof Void	No roof void is present in the building (Photo 17).
Roof Construction	The roof is constructed using modern timbers, in an A-frame structure (Photo 17). The timbers are in good condition. The roof is lined with bitumen felt (Photos 17-19). The bitumen felt has been torn in several places, allowing direct access for bats (Photo 18 and 19).
Insulation of Void	The roof was previously insulated with fibreglass insulation; however, this has been removed, leaving only the timbers and bitumen felt lining.
Security Lighting	A security light is present on the southern elevation, above the door (Photo 20). However, this light has been smashed, therefore it no longer provides any artificial lighting.

Acer Ecology

Photo 1: Southern Elevation



Photo 2: Eastern Elevation



Photo 3: Western Elevation



Photo 4: Northern Elevation



Photo 5: Ivy on the Western Elevation



Photo 6: Western Elevation Moss Present



Acer Ecology

Photo 7: Eastern Elevation Lifted Roof Tile, Circled



Photo 8: Western Elevation Lifted Roof Tile, Circled



Photo 9: Lifted Timber Soffit Box from Brick Wall on the Southern Elevation, Circled



Photo 10: Gap Between Brick with the Missing Mortar, Above Window, Circled



Photo 11: Broken Timber Soffit Box



Photo 12: Damaged Timber Soffit Box



Acer Ecology

Photo 13: Damaged uPVC End Capped Roof Tile



Photo 14: Loose Window Grate



Photo 15: Uncovered Vent



Photo 16: Broken Glass Panels in Door



Photo 17: Interior of the Former surgery



Photo 18: Tear in Bitumen Felt Roof Lining



Photo 19: Tear in Bitumen Felt Roof Lining



Photo 20: Smashed Security Light, on Southern Elevation



3.2.3. Potential Bat Access Points and Bat Roosting Locations

There are numerous potential access points for bats to gain entry into the interior of the building. Bats could gain entry through gaps beneath the soffits (Photo 11-12), the gaps in the grates covering the open windows (Photo 14), through the uncovered vent (Photo 15) and through the various holes in the bitumen felt roof lining (Photos 18-19).

Potential Roosting Features for Bats

The following potential roost features were recorded:

- PRF 1 – Gaps beneath lifted roof tiles (see Photos 7 and 8);
- PRF 2 – Gaps between the bricks and missing mortar (see Photo 10);
- PRF 3 – Gaps beneath raised end tiles (see Photos 5 and 6);
- PRF 4 – Gap between lifted timber soffit box and brick wall (see Photo 9); and
- PRF 5 – Within the damaged soffit box (see Photo 11 and 12).

3.2.4. Nesting Bird Survey

Three defunct birds' nests were recorded on the northern elevation (Photo 21-23), and another was recorded on the eastern elevation (Photo 24). The three recorded on the northern elevation were observed amongst the ivy growth, and the one on the eastern elevation was recorded in the guttering. They were unoccupied at the time of the survey. The species that had built the nests could not be determined.

Acer Ecology

Photos Showing Birds' Nests

Photo 21: Defunct Nest, Northern Elevation, Circled



Photo 22: Defunct Nest, Northern Elevation, Circled



Photo 23: Defunct Nest, Northern Elevation, Circled



Photo 24: Defunct Nest, Eastern Elevation, Circled



3.2.5 Dusk Emergence Surveys

Table 5: Summary of Conditions During Dusk Emergence Surveys

	Survey 1	Survey 2
Date	05/06/2023	14/08/2023
Sunset/Sunrise Time	21:26	20:40
Start Time	21:11	20:25
Finish Time	22:56	22:10
Start Temperature (°C)	15	16
Sunset Temperature (°C)	15	16
Rain	None	None
Wind (Beaufort scale)	1	0
Cloud Cover (Oktas)	0	0

Table 6: Summary of Dusk Emergence Surveys Results

	Survey 1: Dusk Emergence	Survey 2: Dusk Emergence
Emergences/ Re-entries	No bats emerged from or interacted closely with the building.	No bats emerged or interacted closely with the building.

Acer Ecology

Important Commuting/ Foraging Routes	Noctules (<i>Nyctalus noctula</i>), common (<i>Pipistrellus pipistrellus</i>) and soprano pipistrelles (<i>Pipistrellus pygmaeus</i>) were recorded frequently foraging above the trees to the south. Noctules and soprano pipistrelles were recorded commuting along the hedgerow on the eastern side of the building.	Soprano pipistrelles were recorded constantly foraging in the trees to the south of the building. Soprano and common pipistrelle both regularly commuted north to south along the eastern hedgerow.
Bat Activity₁	High levels of activity of noctules, common and soprano pipistrelles were recorded.	High activity levels of soprano and common pipistrelles were recorded. One noctule was also recorded.

3.2.6 Five-night Static Detector Survey

Table 7: Results from Static Detector Survey

Species	Number of Passes				
	24/07/2023	25/07/2023	26/07/2023	27/07/2023	28/07/2023
Common pipistrelle	1	0	0	17	6
Soprano pipistrelle	0	0	0	11	2
Brown long-eared	1	0	0	14	25
Noctule	3	0	0	3	11
Total Bat Passes	5	0	0	35	44

Brown long-eared bats were recorded regularly within the building between the 24th – 28th July 2023. We consider only brown long ears to be roosting within the building as their calls are quiet and only travel a short distance therefore it would be unlikely that calls would be recorded from outside. Brown long-eared bats often rely on their eyes as well as their ears to locate their prey and do not always use echolocation. Because of this characteristic, it is difficult to detect them with ultrasound detectors while they forage. Consequently, brown long-eared bats are often under-recorded during surveys and this may explain why they were not detected during the dusk emergence surveys. Of the brown long-eared bat calls recorded, 82% were recorded between the hours of 21:40 and 22:30 and 03:30 and 04:50, consistent with the timings of sunrise and sunset indicating a brown long-eared roost.

Despite also being recorded during the static detector survey, it is unlikely that noctules would be roosting within the building as the species very rarely roost in buildings and prefer to roost within trees. Instead, we assume the recordings of this species were from foraging and commuting noctule bats as they have very loud calls which may have been picked up from their activity in foraging habitat nearby.

4. Evaluation

4.1. Summary of Field Work

The preliminary roost assessment and dusk emergence surveys found no evidence of bats roosting within the Former Surgery. However, brown long-eared bats were recorded within the building during the 5-night static detector survey. Important bat foraging areas and commuting routes were also identified during the dusk emergence surveys to the east and south of the building.

4.2. Characterisation of Identified Roost

Table 8: Roost Characterisation

Bat Species	Maximum Count	Roost Type	Roosting Location/ Access Points	Rarity Category and Estimated Population	Roost Value
Brown long eared	>1	Night/Hibernation Roost	Possibly through the raised and lifted roof tiles.	Less abundant. Estimated population by Bat Conservation Trust 2021 ²² in Wales 96,600 (5,370 – 228,000).	County

4.3. Potential Winter Roosts

The building could potentially be used by hibernating bats, due to the number of gaps within the brick work and missing mortar. Brown long eared bats can be found in the same locations as their summer roosts. This is because the type of building used for raising young will often also provide suitable conditions for hibernation.

4.4. Birds – Interpretation of Nesting Bird Survey

Four defunct birds' nests were recorded during the preliminary roost assessment. They were unoccupied at the time of the survey and the species that had built the nest could not be determined.

²² <https://cdn.bats.org.uk/uploads/pdf/Our%20Work/NBMP/National-Bat-Monitoring-Programme-Annual-Report-2021.pdf?v=1655151480>

5. Impact Assessment

5.1. Potential Impacts of Development - Bats

Bats are roosting within the building, and in the absence of mitigation the bat roosts would be lost during the works. Mitigation is required to ensure that the favourable conservation status of bats is maintained within the site.

Due to the presence of important commuting routes identified during the dusk emergence surveys, any artificial lighting used after the development from both external lighting sources and light spill via windows has the potential to have a detrimental effect on bats foraging and commuting through the area if the light spill is not controlled. A sensitive lighting strategy is outlined in Section 6.

5.2. Potential Impacts of Development - Birds

Due to the presence of defunct nests within the building, the proposals are likely to lead to a loss of nesting habitat for birds. Mitigation measures are outlined in Section 6.

6. Required Actions

6.1. Further work and licensing requirements

An NRW bat development licence is required. An application can only be made when planning consent has been granted and requires the following elements:

1. A completed and signed application form;
2. A copy of the planning consent/listed building consent (if applicable) and supplementary planning reports (planning officer delegated report/committee meeting minutes);
3. A completed and signed Local Authority Planning Consultation form;
4. A completed method statement which sets out a timetable of the development and details the provision for new or continued roosting opportunities for bats;
5. The bat survey report/s;
6. Confirmation that any relevant associated planning conditions have been discharged by the Local Authority; and
7. A fee to be paid for some applications²³.

6.2. Precautionary Measures for Bats

The implementation of the following precautionary measures will minimise the potential for disturbing, injuring or killing bats during works.

6.1.1. Installation of Bat Boxes for Displaced Bats During Works

In advance of the works, two Vivara Pro WoodStone bat box (or a suitable alternative) will be installed on suitable large trees within the grounds of the site to provide compensatory alternative roosting habitats during the construction period for any vesper bats which may be displaced as a result of the works²⁴.

Boxes should be located at least 3.5m (preferably 5m) above ground level, with bat boxes in positions where the entrance is not artificially illuminated at night and clear of obstructions such as branches, and so some may need to be trimmed off or otherwise the bat box carefully positioned. The bat box should be positioned away from horizontal branches directly below or above the bat box which could easily be accessed by cats. Where applicable, the bat boxes should utilise straps rather than nails to avoid damaging trees. The bat boxes will be retained on site after completion of the works in-perpetuity as a biodiversity enhancement.

²³ <https://naturalresources.wales/permits-and-permissions/species-licensing/species-licensing-charges/?lang=en>

²⁴ This approach would not be suitable for horseshoe species. See footnote in Bat Discovery Action section for measures to be undertaken if horseshoe bats are encountered on site.

6.1.2. Timing of Works

The works will commence during October to November or March to April to avoid the active bat season of May to September and the core hibernation period of December to February, to minimise disturbance to bats. The former timescale would also eliminate the risk of causing accidental harm to nesting birds.

6.1.3. Site Induction/Toolbox Talk

Prior to the start of works, a suitably qualified bat ecologist will deliver a 'tool-box talk' to all contractors undertaking works that could affect bats. All site workers will be made aware of the role of the ecologist and briefed on the legal status of bats¹⁷, the likely places to find them, the working practices that will be undertaken to minimise and avoid harming or disturbing bats (e.g. the procedure required for removing tiles etc.), the action to be taken if bats are encountered during the works and that all activities relating to bats and bat roosts are restricted to the terms and conditions of the licence.

All site workers will be made aware that in the event of bats (or occupied birds' nests) being found, or suspected, when the ecologist is not on site, all works must stop in the affected area until appropriate expert advice sought from the bat ecologist or NRW. A copy of the NRW licence and the Bat Licence Method Statement will remain on site at all times and a summary sheet of guidance will be given to the contractors working on site.

6.1.4. Ecological On-Site Supervision of Works/ Soft Strip

A licensed bat worker will supervise the 'soft strip' whereby all features with bat roosting potential will be exposed and removed. This will include (but not be limited to) the ridge tiles¹, roof tiles, roofing felt, soffit, fascias and bargeboards etc. The tiles and any associated timbers must be lifted off vertically (and not rolled or sprung), and checked on their underside to ensure that no bats are clinging to the underside. This will minimise the chance of bats being killed/injured.

Any removal work will be undertaken using hand tools, (i.e. picks, crowbars, slate rippers, bow saws etc.). These features will be carefully removed by hand and contractors will check for the possible presence of bats on the undersides of these features before they are lifted off, prior to discarding or storing them. During the soft strip process, any cracks or crevices that have the potential to be used by bats will be inspected by a licensed bat worker using a high-powered torch to ensure they are not in use. Cavities will be carefully prised open using a crowbar.

After the soft strip has been completed the building will be left overnight (to allow any bats present the opportunity to move off of their own accord) before re-commencing with works.

If work takes place during the winter period, works will avoid encountering torpid bats in roof structures by only working during periods when temperatures have not dropped below 10°C on four consecutive days and nights. However, if any torpid bats are discovered, they will be taken temporarily into care and fed

until such time when conditions become suitable for release. The bat would then be released at dusk near the building.

The licensed bat handler will remain available on an 'on-call' basis during all subsequent stages of the works to deal with any unexpected encounters with bats or nesting birds.

6.1.5. Bat Discovery Action Plan

Vesper Bats

If bats are encountered during supervised works, the licensed bat handler will capture the bat/s with thin gloved hands or a hand-held net, conduct a health check and then place it in a drawstring calico cloth bag. Removed bats will be temporarily transferred to a well-ventilated container. The removed bat will then be transferred into a species-specific bat box that was fixed at a suitable location before works commenced. The access point of the bat box will be blocked with a cloth or other suitable material until the working day has been completed. This will allow the bat/s to settle in a safe place for the remainder of the day, and to emerge safely in the evening. Any injured bats or bats requiring supplementary feeding will be immediately taken into care.

If a bat is discovered during unsupervised times when the ecologist is not present, work will cease immediately, and the bat ecologist will be consulted for advice or attend the site. If it is not possible to contact the bat worker, the NRW Species Protection Officer must be contacted immediately and their advice sought.

Reduction in Risk of Human to Bat Disease Transmission

To reduce the risk of human-to-bat transmission of Covid-19, the licensed bat handler will wear gloves and a face mask, use disinfectant regularly and efforts will be made to minimise contact by conducting a swift health check and transfer of the bat to the bat box.

6.2. Avoidance, Mitigation, Compensation and Enhancement Measures for Bats

Mitigation measures for bats roosting within the building are yet to be finalised however the following measures are recommended.

6.2.1. Sensitive Lighting Strategy

The lighting design for the site will be of a 'bat-friendly' specification and kept to the minimum level which meets the requirements of security and health and safety. The unnecessary lighting of habitats which could potentially be used by foraging bats such as nearby trees, hedgerows etc. will be avoided. External lighting will be installed at low-level only (i.e. no higher than eaves level and lower than 2.4 m) and directed downward (i.e. below the horizontal plane with no upward tilt). Fully shielded lights with front and side hoods/shields or cowls will be installed to prevent upwards and horizontal light spill.

Any future lighting will not be located in the vicinity of, or shine towards possible/actual commuting routes or flight lines (the eastern and southern sides of the building), so that a 'dark corridor' is maintained and

disturbance to roosting bats avoided/minimised. Any security lights used will operate off a passive infrared (PIR) motion sensor sensitive to large objects only, to avoid constant triggers by bat passes and with timers set on a short duration (i.e. a maximum 'on' time of one minute) to reduce the amount of 'lit time'. The bulbs in the lights will ideally be low intensity (i.e. circa 11 watts), and red, amber or warm light (<2700Kelvin²⁵) LED bulbs. The bulbs will feature peak wavelengths 550nm or greater. White, blue and green²⁶ lighting sources including mercury or metal halide, CPO and CDO (ceramic discharge metal-halide) bulbs which have a significant effect on bats will be avoided. See Appendix 8 for suitable light fittings and Plan 5 for the location of the 'dark corridor'.

6.2.2. Landscaping

Consideration should be given to enhance landscaping and garden design to provide a habitat suitable for bats by encouraging night flying invertebrates. Plant species that provide a rich source of nectar will be used. Suitable species include flowering herbs such as lavender (*Lavandula* spp.), violets (*Viola* spp.) or shrubs such as flowering currant (*Ribes sanguineum*), privet (*Ligustrum vulgare*), forsythia (*Forsythia* sp.), honeysuckle (*Lonicera periclymenum*), dogwood (*Cornus sanguinea*), berberis (*Berberis* spp.), pyracantha (*Pyracantha* sp.) and ceanothus (*Ceanothus* spp.).

6.2.3. Roosting Provision

One Schwegler 1FR bat tube or similar should be incorporated into the exterior wall of the development. Specification of the bat tube is contained in Appendix 7. The bat tube will be recessed into the walls and lying flush with the surrounding wall. It can then be rendered but with care taken to ensure that the entrance slot is left exposed or painted with breathable paint if required. The tube will be positioned at least 0.5m below the eaves or gable apex to prevent predation by domestic cats. It is also recommended that, where practical, the tube is not positioned above windows or doors. In addition, ideally the bat tube will be installed in an unlit location close to connective features to allow bats undisrupted dispersal to local foraging habitat.

To compensate for the loss of the existing bat roost a panel-style roost will be provided within the new building (Appendix 10). An area with a surface area of 1 square metre (100cm x 100cm) will be created between the rafters and separated from the rest of the loft space with plywood or hard wood boards. It will not be possible for the bats to access the roof space from inside the panel-roost. Appropriately designed bat access points lead from the panel roost to the outside of the building such as a gap under a ridge tile (Appendix 9). It is essential that the 'bat-friendly' bitumen felt is used and not a breathable membrane. Small holes²⁵ will be made through the underlying felt directly behind the ridge tile access points. The access holes will be located adjacent to rafters (where possible) to allow bats to crawl in and out. No security lighting will be installed in close proximity to the access points.

²⁵ 50mm height by 150mm width.

6.3. Mitigation Measures for Birds

One Vivara Barcelona WoodStone Open Nest Box and one Schwegler 1SP Sparrow Terrace (or suitable alternatives) will be installed on the side of the new development to mitigate for the loss of nesting habitat within the building. See Appendix 6 for details of the nest boxes.

6.4. Post-Development Monitoring

On completion of work, confirmation of the works carried out and photographs of the works including the bat mitigation features will be recorded by a licensed ecologist and submitted to NRW. The bat mitigation features will be checked by a bat worker to ensure that they are not obstructed or illuminated, and that they provide the intended access points.

Post-construction monitoring will be undertaken for two years (in years one³ and three), following implementation of the mitigation measures and will consist of an internal and external inspection and one dusk emergence survey undertaken between May and September by a suitability qualified ecologist.

If the first year of monitoring shows that bats are occupying the building in similar numbers to those found before the work was undertaken for all of the species identified, no further monitoring will be considered necessary. If no bats are found roosting, or they are present in significantly lower numbers, further monitoring will be undertaken in year three. A report will be submitted to the Local Planning Authority and NRW following completion of the monitoring surveys. The report will detail any remedial measures required.

6.5. Longevity of Report

Survey data should ideally be from the last survey season before a planning or licence application is submitted, although the length of time that survey data remains valid should be decided on a case-by-case basis and is dependent upon several factors³⁷ (Collins, 2016). If development works do not begin within eighteen months to two years of the date of this report, an updated survey may be required in accordance with guidance in BS 42020:2013³⁸ and CIEEM (2019), to determine if conditions and bat usage has changed since described in the current report.

7. References

Bat Conservation Trust (2022) *Interim Guidance Note: Use of Night Vision Aids for Bat Emergence Surveys and Further Comment on Dawn Surveys*. Available online at <https://cdn.bats.org.uk/uploads/pdf/Interim-guidance-note-on-NVAs-May-2022-FINAL.pdf?v=1653399882>

BSI (2013) *BS 42020:2013 Biodiversity – Code of practice for planning and development*. British Standards Institution, London.

CIEEM (2019) *Advice Note on the Lifespan of Ecological Reports and Surveys* Available online at <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

CIEEM (2020) *Guidelines for Accessing, Using and Sharing Biodiversity data in the UK*. <https://cieem.net/wp-content/uploads/2016/03/Guidelines-for-Accessing-and-Using-Biodiversity-Data-March-2020.pdf>

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

Eaton, M, Aebischer, N, Brown, A, Hearn, R Lock, L, Musgrove, A, Stroud, D and Gregory, R (2014) *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and Isle of Man*. *British Birds* 108. December 2015. 708-746. Available online at <http://bit.ly/2h23DqV>.

European Commission, Directorate-General for Environment (2011) *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC: final version*, February 2007. European Commission.

Institute of Lighting Professionals (2012) *Guidance for The Reduction of Obtrusive Light*.

Mitchell-Jones, A.J, & McLeish, A.P. Ed., (2004) *Bat Workers' Manual (3rd Edition)*. Joint Nature Conservation Committee, Peterborough. Available online at <https://data.jncc.gov.uk/data/e5888ae1-3306-4f17-9441-51a5f4dc416a/Batwork-manual-3rd-edn.pdf>

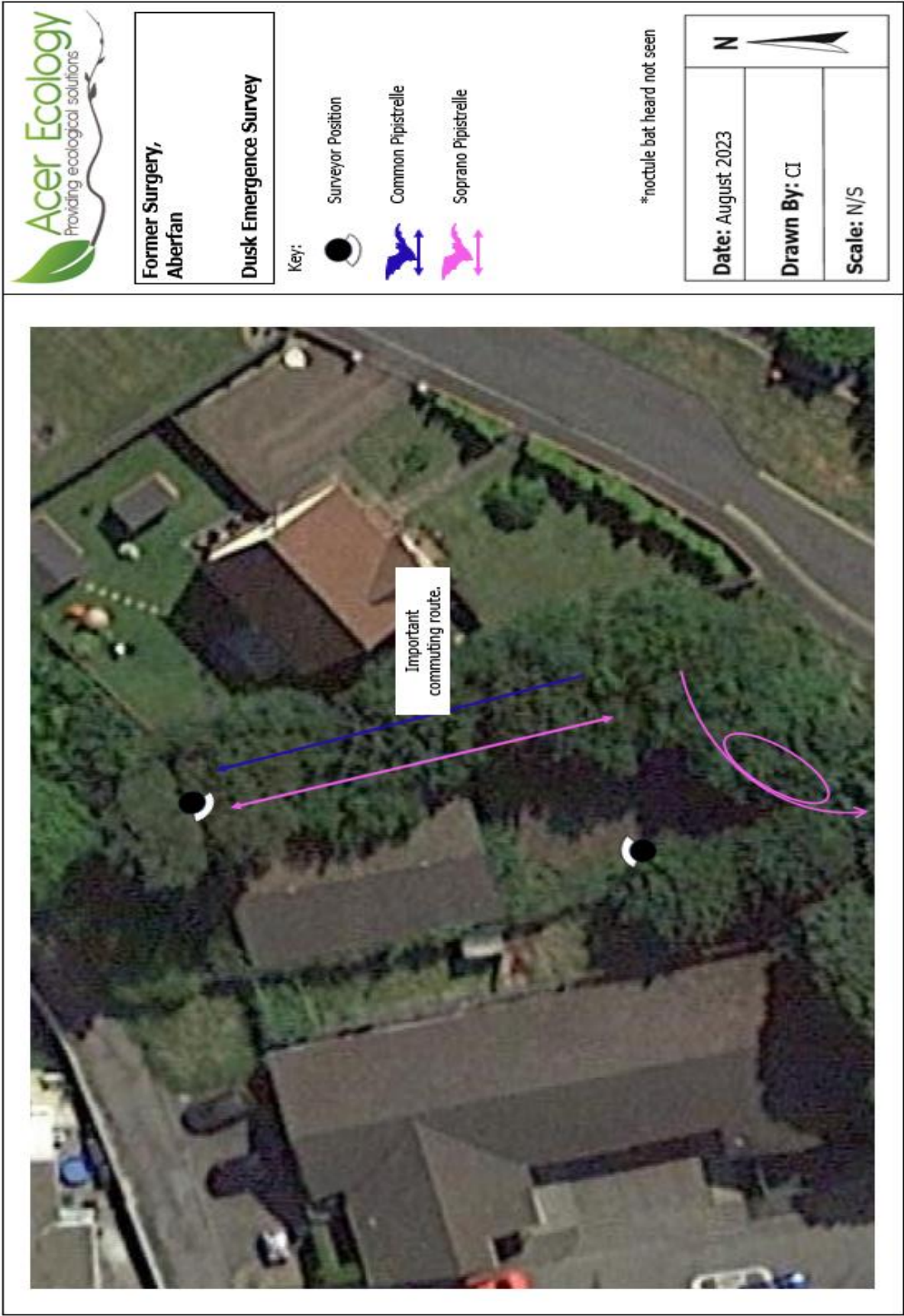
Drawing 1: Existing Site Plans



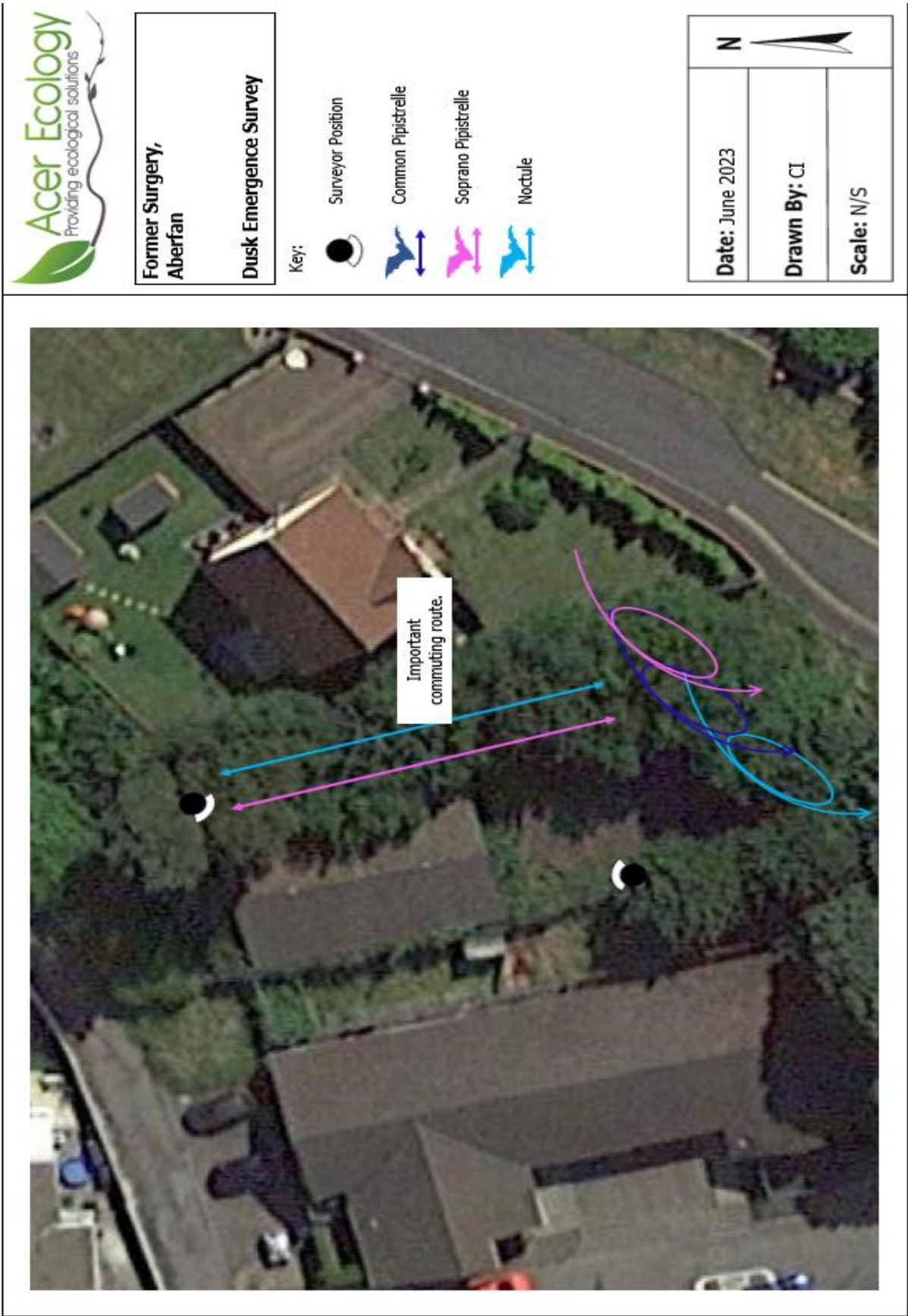
Plan 1: Location Plan



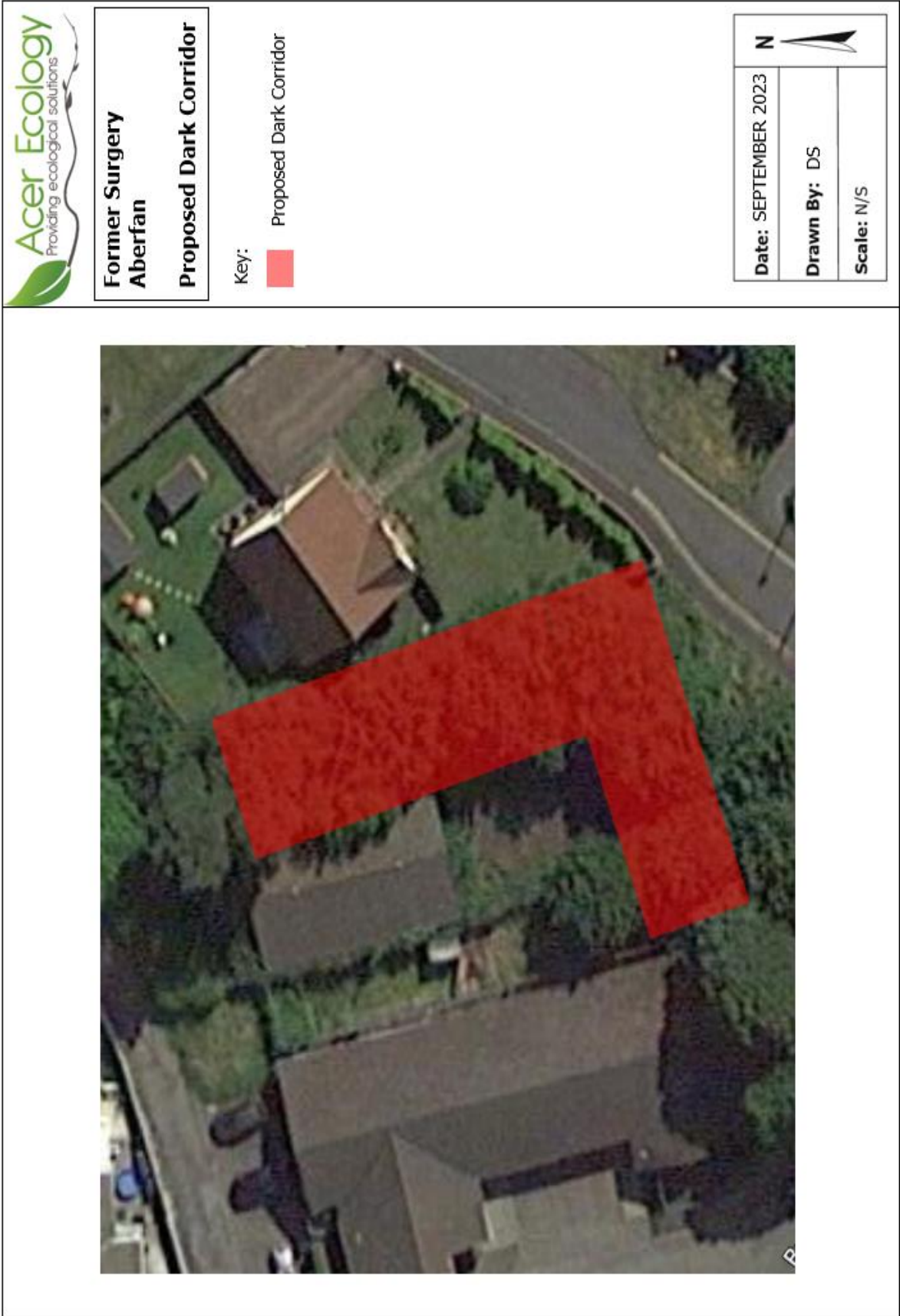
Plan 3: Dusk Emergence Survey Results (5th June 2023)



Plan 4: Dusk Emergence Survey Results (14th August 2023)



Plan 5: Proposed Dark Corridor



Appendix 1: Bat Ecology and Legislation Protecting Bats and Their Roosts

Bat Ecology

There are 17 known breeding species of bat found in the UK, with additional species recorded as migrants or vagrants. They are all small, nocturnal, flying, insectivorous mammals that are under conservation threat with many having undergone massive population declines over the last century. Some species, such as common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) are relatively common and widespread in the UK, while others, such as greater horseshoe (*Rhinolophus ferrumequinum*) bats, have an extremely restricted distribution.

Most bats will use a variety of roosts of different types throughout the year. The winter hibernation sites typically have cool, humid conditions with a stable microclimate and low levels of disturbance. Most British bats hibernate in caves or artificial structures that fulfil these requirements, such as mines, tunnels and cellars. Bats emerge from hibernation around late March or early April and move into transition or intermediary roosts. Around early May, female bats gather in colonies to form summer or maternity roosts, and it is here where they will give birth between late May and early July. A colony may consist of many individuals (sometimes hundreds of bats) of mixed age and sex. Roosts occur in a variety of habitat types, including tree-holes, caves, buildings and other secure crevices or internal spaces with appropriate stable temperatures and humidity. Bats may change roost locations many times during a year, and colonies may split up and reform during this period. Males occupy solitary roosts in autumn, to which they attract females for mating.

Legislation

All British bat species and any place used for shelter or protection, or as a breeding site or resting place (their roosts) are fully protected under the amended Wildlife and Countryside Act 1981 through inclusion in Schedule 5. The roosts are protected irrespective of whether bats are present at the time. All bats fully protected under the Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species (Amendment) (EU Exit) [‘CHSAEU’] Regulations 2019. The aforementioned legislation makes it illegal to deliberately or recklessly:

- kill, injure or capture bats;
- disturb bats;
- damage, destroy, or obstruct access to bat roosts (including sites that are currently unoccupied);
- possess or transport a bat or any part of a bat unless acquired legally; or
- sell, barter or exchange bats or parts of bats.

Disturbance is defined as that which is likely to impair bats ability:

- to survive, to breed or reproduce, or to rear or nurture their young;
- to hibernate or migrate; or
- to significantly affect the local distribution or abundance of the species to which they belong.

Habitats Regulations Licensing

If a European Protected Species will be affected by a development, Natural Resources Wales (NRW) can issue licences under the Habitats Regulations to permit otherwise prohibited acts. Licences for certain activities can be granted providing “three tests” are satisfied, that is:

1. the purposes of “preserving public health or safety, or for reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment”;
2. there must be “no satisfactory alternative”; and,
3. the derogation is “not detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range”.

Where Planning regulations apply, NRW will only issue a licence after planning consent has been granted.

The licence application will require the production of a detailed method statement, which sets out the activities to be carried out under the licence to minimise the risk of bats being harmed during construction works and ensure that bats will be conserved during the development of the site. This will need to detail the mitigation proposed (such as the replacement or compensation roost); the timescale and schedule of works, the number, size and locations of bat access points to be provided; the type of materials to be used (roofing material, roof lining, fascias, soffits, and bargeboards etc.); lighting proposals; action to be taken in the event bats are found during works; and a post-development monitoring programme. The method statement will need to be accompanied by scaled plans and maps detailing the bat mitigation features. A cross-section of the access points and roost space is often required. The method statement must ensure that provision is made for new or continued roosting opportunities after the completion of development works. In some instances, a method statement is requested by the Local Planning Authority or Natural Resources Wales before the planning application is determined.

Planning Policy Wales

Section 6.4 Paragraph 6.4.5 of Planning Policy Wales Edition 11 (2021) that focuses on Biodiversity and Ecological Networks, Section 6 of The Environment (Wales) Act 2016²⁶ that details the requirement for enhanced biodiversity and resilience of ecosystems, TAN 5 and Section 40(1) of the Natural Environment and Rural Communities Act (NERC) 2006 all encourage developments in Wales to provide a net benefit for biodiversity conservation with no significant loss of habitats or populations of species, locally or nationally.

Part 1, Section 7 of the Environment (Wales) Act 2016 provides a list of the ‘*living organisms of principal importance for maintaining and enhancing biodiversity in relation to Wales*’. This includes seven bat species

²⁶ <http://www.legislation.gov.uk/anaw/2016/3/contents>

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(soprano pipistrelle, barbastelle (*Barbastella barbastellus*), Bechstein's (*Myotis bechsteini*), noctule (*Nyctalus noctula*), brown long-eared (*Plecotus auritus*), lesser horseshoe (*Rhinolophus hipposideros*) and greater horseshoe bats (*Rhinolophus ferrumequinum*)).

Appendix 2: Justification for Number of Surveys Undertaken

Suitability of Summer Roosts

The building has been assessed as having:

- Moderate suitability for use by crevice-dwelling bats (*Pipistrellus* species and smaller *Myotis* species such as Brandt's (*Myotis brandtii*) and whiskered bats (*Myotis mystacinus*)), due to the potential roosting sites such as crevices beneath lifted roof tiles and lifted end tiles. These features could be used by individual bats opportunistically;
- Low suitability for use by roof-void-dwelling bats⁵ (long-eared species (*Plecotus* species) and large *Myotis* bats, such as Natterer's bat (*Myotis nattereri*) and serotine bats (*Eptesicus serotinus*)). The building has numerous access points allowing access for bats into the building, including through the ripped bitumen felt lining, the damaged soffit box, and the broken windows. However, it lacks a suitable roof void space with stable thermal environment;
- Low suitability for use by direct-access species requiring a large access point⁶ and large roost space (lesser horseshoe (*Rhinolophus hipposideros*) and greater horseshoe (*Rhinolophus ferrumequinum*) bats)). The building is unlikely to provide thermal environment of the kind which bats normally seek for daytime roosting. However, due to the numerous gaps present within the building, there is some potential to be used as a night roost.

The building has an overall moderate bat roosting suitability due to the reasons stated above plus the presence of nearby foraging and commuting habitats. This assessment was used to determine the level of further survey effort required.

Appendix 3: Guidelines for Assessing Potential Bat Roosting Suitability and Determining Required Number of Dusk/Dawn Surveys

Suitability	Description of Roosting Habitat	Minimum Number of Dusk/Dawn Surveys Required ²⁷
Negligible	Negligible habitat features on site likely to be used by roosting bats.	None.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection appropriate conditions ²⁸ and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity) or hibernation ²⁹ .	One survey visit. One dusk emergence or dawn re-entry survey (Survey period from May to August) (Collins 2016).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status ³⁰ (with respect to roost type only) the assessments in this table are made irrespective of conservation status, which is established after presence is confirmed.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey ³¹ . Surveys should be undertaken from May to September, with at least one of the survey between May and August (Collins 2016).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for long periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third visit could be either dusk or dawn. Surveys should be undertaken from May to September, with at least two of the surveys from May to August (Collins 2016).
Confirmed Roost	Evidence of bats or use of bats found.	Three separate surveys recommended to characterise the roost and support an NE licence application. If no evidence of bat roosting is detected during the dusk and dawn surveys, DNA analysis of the droppings may be required.

²⁷ Adapted from Tables 4.1 and 7.3 of the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016).

²⁸ For example, in terms of temperature, humidity, height above ground levels, light levels or levels of disturbance.

²⁹ Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of former surgery types in urban environments (Korsten *et al.*, 2015). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for large numbers of this species to be present during the autumn and winter in large former surgery s in highly urbanized environments.

³⁰ 'High roost status' is not defined within Collins, 2016. Acer Ecology Ltd. interpret maternity, hibernation, swarming sites, mating sites, and satellite roosts as being of 'high roost status' and exclude day roosts, night roosts, feeding roosts, transitional/occasional roosts from this definition. Pre-maternity/collecting roosts are not included within Collins, 2016 and will be assessed on an individual basis.

³¹ Multiple surveys should be spread out to sample as much of the survey period as possible. It is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk survey is considered only one visit.

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Appendix 4: Guidelines for Assessing Bat Habitat Suitability

Suitability	Commuting and Foraging Habitat
Negligible	Negligible habitat features on-site likely to be used by commuting and foraging bats.
Low	<u>Commuting Habitat</u> Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape. <u>Foraging Habitat</u> Suitable but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	<u>Commuting Habitat</u> Continuous habitat connected to the wider landscape that could be used by bats for commuting, such as lines of trees and scrub or linked back gardens. <u>Foraging Habitat</u> Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	<u>Commuting Habitat</u> Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. <u>Foraging Habitat</u> High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. <u>Proximity to Known Bat Roosts</u> The site is close to and connected to known roosts.

Appendix 5: Surveyor Experience

05/06/2023 and 14/08/2023

Rebecca Corley – Rebecca graduated with a degree in Biological Science from the University of Birmingham and an MSc in Global Ecology and Conservation from Cardiff University. Rebecca is currently in her first season of bat surveying, working as an Assistant Ecologist and receiving training from Acer Ecology. She is listed as an accredited agent on Paul Hudson's bat licence (S091671-1).

Charlotte Ingram – Charlotte graduated from the University of South Wales with a degree in International Wildlife Biology. She is currently working for Acer Ecology as an Assistant Ecologist and is in her first season of bat surveying.

Gavin Lavender – Gavin is in his first season of bat surveying and is receiving training from Acer Ecology Ltd.

Appendix 6: Suitable Nest Boxes

Vivara Barcelona WoodStone Open Nest Box

These attractive nest boxes are manufactured from WoodStone which is a mix of concrete and FSC certified wood fibres. Unlike a traditional wooden nest box, these boxes will not rot away or deteriorate and are guaranteed for 10 years. This robust material safeguards against attacks from predators such as woodpeckers, cats and squirrels, whilst also providing a well-insulated interior with a more consistent internal temperature than an ordinary wooden box. This is especially important during the breeding season and ensures that young birds have a greater chance of survival. Nesting sites have become rare for cavity nesting birds due to changes in woodland management practices, so you can provide much-needed space for rearing chicks and birds that are roosting overwinter with these durable, long-lasting nest boxes.

These open nest boxes are suitable for wrens, robins, spotted flycatchers, pied and grey wagtails, song thrushes and blackbirds, and they are available in brown, green or grey to complement both natural woodland and garden settings.

The best height for your nest box is between 1.5m and 3m high, and open nest boxes should be sited in undergrowth such as ivy to provide cover for the nest.

These nest boxes have a removable front panel for easy cleaning. Although birds will clean their own nest boxes before each breeding season, cleaning the boxes out at the end of each breeding season may encourage them to be used again in future years, as it reduces parasites. The nesting time of birds varies from species to species so we suggest you wait until October when the last of the birds will have left before cleaning. The nest may come out easily but if there are any deposits scrape them out. We recommend using hot water rather than chemicals to remove any parasites that remain.

Specification

- * Width: 19cm
- * Height: 24cm
- * Length: 17.5cm
- * Entrance hole: Open



Purchase source: <https://www.nhbs.com/vivara-pro-barcelona-woodstone-open-nest-box>

Schwegler 1SP Sparrow Terrace



Sparrows are gregarious and prefer to nest close to each other, so this triple-nest box provides room for three families under one roof. It's made from long-lasting, breathable woodcrete to provide the optimum environment for sparrows to nest and rear their chicks.

Positioning: On buildings of all kinds in typical habitats including industrial buildings and barns at a height of at least 2m (e.g. under eaves).

Suitable for: House and tree sparrows and individual redstarts

Material: Woodcrete PLUS

Height: 240mm

Width: 430mm

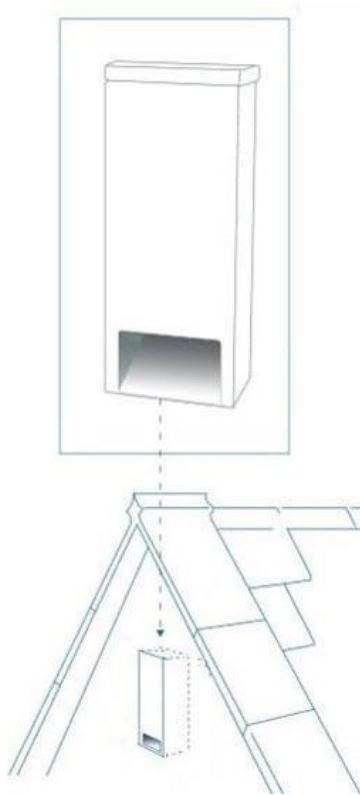
Depth: 220mm

Weight: 15kg

Brood chamber dimensions: Height: 16cm, Width: 10.5cm, Depth: 15cm,

External dimensions: Height: 24.5cm, Width: 43cm, Depth: 20cm, Weight: 15kg

Appendix 7: Specification of Schwegler 1FR Bat Tube



Woodcrete Bat Tubes

These are a well-known brand that have a low visual impact on the development because they can be built into the exterior wall and then rendered or painted.

How Many to Install

Typically, one tube is recommended on sites where there are low numbers of bats and multiple groups of tubes are recommended on sites of high ecological significance.

Installation

The tubes should be built into the exterior wall of the building, typically at the gable apex. The tubes should be installed flush with the surrounding wall and can then be rendered or painted with breathable paint if required.

Schwegler 1FR and 2FR

These are two similar designs. The 1FR is designed to be used singularly (shown here) whereas the 2FR has transverse connecting holes that allow tubes to be collected together or lead into the cavity wall.



Specifications

Height	47.5cm
Width	20cm
Depth	12.5cm
Weight	9.8kg

Location

The tubes should be positioned at least 0.5m below the eave or gable apex to prevent predation by domestic cats. It is also recommended that where practical, the tubes are not positioned above windows or doors.

Appendix 8: Example of Suitable Wall Light Fitting

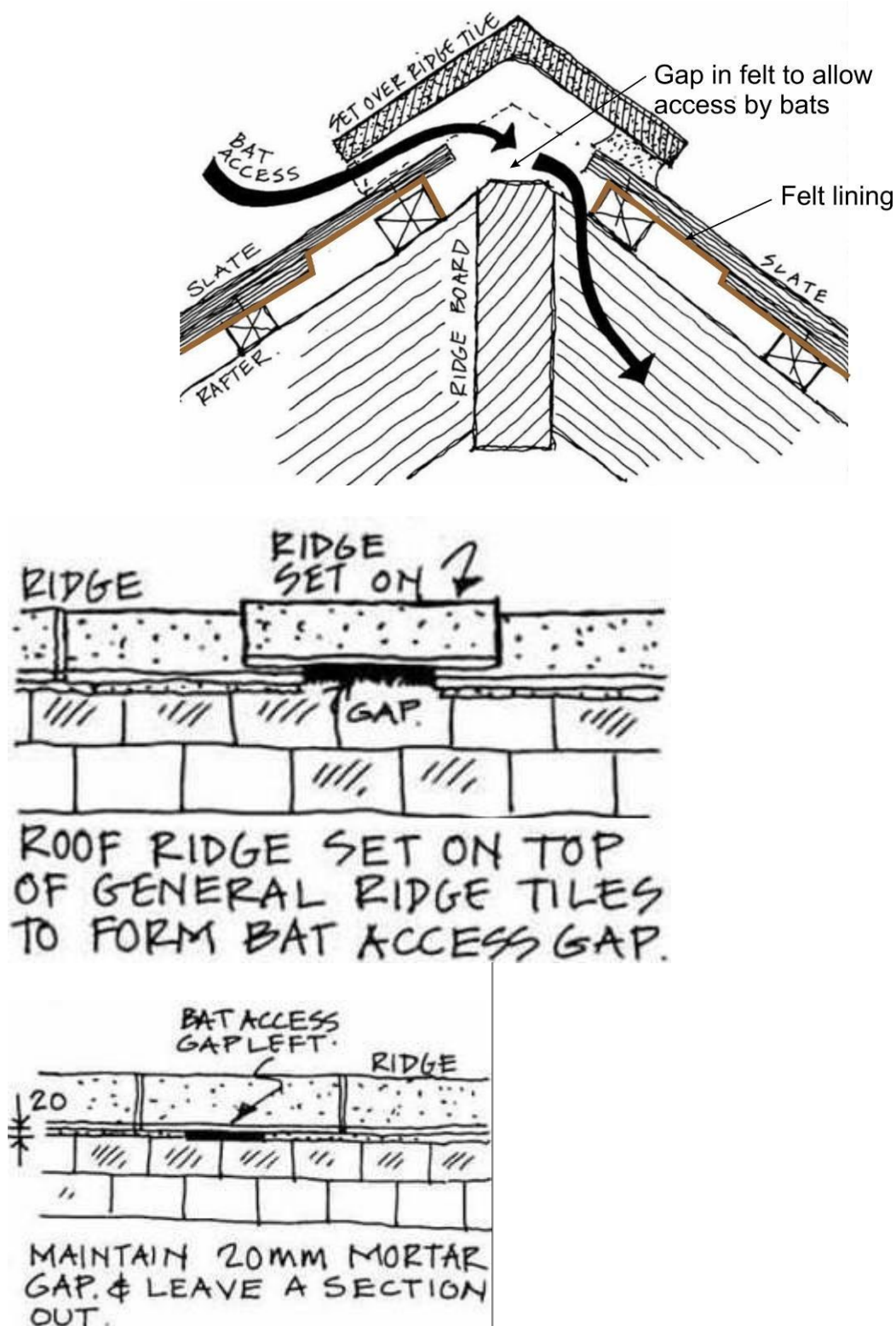
	Description
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	Light fitting sourced from http://www.energylightbulbs.co.uk/products/single-outdoor-wall-with-pir-movement-sensor-stainless-steel?gclid=CLuf2c63hM4CFYVAGwod0sYPvg
	Light fitting sourced from https://www.screwfix.com/p/lap-bronx-outdoor-wall-light-black/7323r
	Lighting sourced from https://energylightbulbs.co.uk/outdoor-lighting/single-wall-lights/black-single-wall-lights/single-outdoor-wall-light-black-stainless-steel-ip65-zlc076b https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/#!/Bronze-Outdoor-LED-Wall-Lantern-Sconce/p/50117847/category=12541418
	Light fitting sourced from https://energylightbulbs.co.uk/outdoor-lighting/single-wall-lights/black-single-wall-lights/cone-shape-outdoor-wall-light-stainless-steel-black-finish-exterior-single-downlight-zlc068b
	Lighting sourced from https://www.dunelm.com/product/houston-outdoor-wall-light-1000189390?defaultSkuId=30730458
	Lighting sourced from https://www.lights.co.uk/lindby-jarte-led-outdoor-wall-light-23-9-cm-down.html?gclid=Cj0KCQiAys2MBhDOARIsAFf1D1cN-g6FdvdBjkJcq57t5Ym6RuP5BjnsVPsMI465W2D8SILoTRmA5kaAkHZEALw_wcB&gclid=aw.ds
	Lighting sourced from http://www.theopenboxshop.com/hampton-bay-lexington-collection-outdoor-rustic-bronze-led-medium-wall-lantern/ Note: bulb is in unit above glass casing.

A tool for finding 'bat-friendly' lighting is available at <https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/fsa-products/> although the majority of suppliers are based in America

Appendix 9: Ridge Tile Access



Appendix 10: Brown Long-eared Bat - Panel Roost

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