



**56 Pantygerdynen
Clwydyfagwyr, Merthyr Tydfil**

Preliminary Roost Assessment

November 2023

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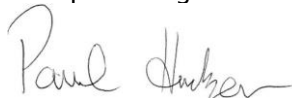
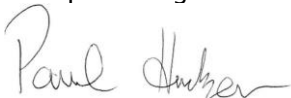
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DOCUMENT CONTROL

P2442 56 Pantygerdynen, Merthyr Tydfil Preliminary Bat Roost Assessment and Nesting Bird Survey				
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Summary

Brief and Site Location	This report presents the findings of a preliminary bat roost assessment and nesting bird survey of a garage at 56 Pantygerdynen, Swansea Road, Clwydyfagwyr, Merthyr Tydfil, CF48 1HR (Ordnance Survey Grid Reference: SO 0265 0689).
Proposed Works	The current proposal is for a change of use for the current garage to create a one-bedroom annex with an external balcony (Planning Reference Number: P/23/0148).
Survey Methodology	The preliminary bat roost assessment comprised a daytime internal and external inspection of the garage, searching for signs of bats and nesting birds. The inspection provides a preliminary assessment of the potential of the site to support roosting bats.
Results of Preliminary Bat Roost Inspection	No signs of bats were found during the internal and external inspection of the garage. The garage is within a high-quality area for foraging and commuting bats.
Suitability of the Building to Support Roosting Bats	The garage has moderate suitability to support roosting bats. Details of the features that led to this assessment are set out in Section 3.2 of this report and are shown in the corresponding photographs. Justification for this assessment is provided within Section 4.2.
Evidence of Nesting Birds	No evidence of past or current nesting by birds was noted either within or on the building's exterior.
Requirements for Additional Survey	Further surveys are required to determine if any bats are roosting within the garage, the roosting location/s and accurately characterise the roost/s. As the garage has moderate roost suitability, current best practice guidelines (Collins, 2023) suggest that it should be subject to two additional dusk emergence surveys, undertaken between May and September. Two surveyors will be required for both surveys (see Plan 4: Proposed Surveyor Positions).
Predicted Impacts of Development on Bats and Nesting Birds	Full impacts on bats and birds will be considered after the further surveys have been undertaken.
Mitigation and Compensation of Proposed Impacts	Mitigation and compensation measures for bats and birds will be determined after the further surveys have been undertaken.
Licensing Requirements for Bats	It has not been possible to determine if a bat development licence will be required from Natural Resources Wales prior to works to the garage. This will be established after the dusk emergence surveys have been completed.
Required Actions	Further surveys are required.

1. Introduction

1.1. Brief and Site Location

This report presents the findings of a preliminary bat roost assessment and nesting bird survey of a garage, located at 56 Pantygerdynen, Swansea Road, Clwydyfagwyr, Merthyr Tydfil, CF48 1HR (Ordnance Survey Grid Reference: SO0265 0689)¹. The building proposed for development is referred to as the 'garage' throughout the remainder of this report.

The garage is within the boundary of Merthyr Tydfil County Council.

1.2. Site Description

The garage is a single-storey structure located in the suburb of Merthyr Tydfil, approximately 2.5km north-west of Merthyr Tydfil. It is surrounded by areas of hard standing, amenity grassland and a tree-line, and lies approximately 28m to the north-west of the main dwelling. The wider surroundings mainly comprise residential dwellings, with patches of scattered woodland and fields to the south-west.

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

1.3. Proposed Works

The development proposals involve the change of use of the garage to create a one-bedroom annex with external balcony. A planning application has been submitted under reference P/23/0148².

Existing and proposed plans can be found in Drawings 1 and 2: Development Proposals (Planning Reference number: P/23/0148).

1.4. Legislation and Planning Policy

1.4.1. Bats

All UK bats are protected species. Their breeding sites or resting places³ (roosts) are fully protected under the Wildlife and Countryside Act 1981⁴ (as amended) and the Conservation of Habitats and Species Regulations 2017⁵ which continues to apply in UK law through the Conservation of Habitats and Species (Amendment) (EU Exit) [CHSAEU] Regulations 2019⁶. 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: 51.752229705783016, -3.4116835657187794, what3words: adding.aims.test

² <https://publicaccess.merthyr.gov.uk/online-applications/applicationDetails.do?activeTab=summary&keyVal=RV5M39KQL1N00>

³ 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.

⁴ <https://www.legislation.gov.uk/ukpga/1981/69>

⁵ <https://www.legislation.gov.uk/uksi/2017/1012/contents/made>

⁶ <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 exceptions⁷) are protected by law under Section 1 of the Wildlife and Countryside Act 1981⁸ (as amended) and the Countryside and Rights of Way Act 2000⁹. 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 preliminary roost assessment (PRA) comprised a daytime internal and external inspection of the garage, searching for signs of bats and nesting birds, and assessing the potential for bats to roost on site.

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 licencing requirements, mitigation, compensation and enhancement measures.

⁷ 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>

⁸ <https://www.legislation.gov.uk/ukpga/1981/69>

⁹ <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.

2.2. Field Study

2.2.1. Daytime Internal and External Inspection

A systematic search of the exterior and interior of the garage was undertaken, looking for features that bats could use for entering/exiting and roosting¹⁰. 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 23rd October 2023 by Daisy Smith¹¹ and Rebecca Corley¹².

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. Survey for Nesting Birds

Searches were carried out for old nests, as well as any signs which might indicate previous nesting activities, such as piles of discarded nesting materials or large aggregations of guano.

¹⁰ Bats can utilise gaps approximately 8mmx17mm in size (The Bat Conservation Trust, Cluster-flies leaflet mentions 8mm by 20mm whilst the Bats and Buildings leaflet states 9mm by 17mm).

¹¹ Daisy graduated with a degree in Zoology from the University of Southampton. Daisy has completed two seasons of bat surveying, working as an Assistant Ecologist and receiving training from Acer Ecology. During her training she is undertaking numerous preliminary roost assessments on a range of different structures, under direct supervision. 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/in/daisy-smith-0889561b3>.

¹² 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). Further details of her qualifications and experience can be found at <https://www.linkedin.com/in/rebecca-corley-b33b61138>.

2.2.4. 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, October, coincides with the period when bats are seeking suitable hibernation sites, and beginning periods of torpor. However, signs of roosting activity from previous summers may still be identified inside loft spaces 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.

Evidence of Bats

Often bats leave no visible signs of their presence even on the inside of a building, particularly where there are hidden cracks, crevices and voids.

Survey Restrictions due to Health and Safety Considerations

Due to Health and Safety considerations, the inspection of the loft space was restricted to a visual search of the areas close to the loft hatch as the deck was considered unsafe to walk or crawl upon as it was constructed of plyboard. However, this constraint is not considered to have affected the overall assessment of the building as further surveys are being recommended.

Restricted View of External Parts of the Building

Not all of the external parts of the building could be inspected during the preliminary roost assessment.

As the southern rear of the building is immediately bordered by a fence, a close-up inspection of the easternmost section of the hipped roof was not possible. However, this constraint is not considered to have affected the overall assessment of the building as further surveys are being recommended.

Local Records Centre Data Search

A Local Records Centre (LRC) data search was not undertaken due to the low impact and small-scale nature of the development. Current proposals suggest no land will be lost or linear features severed. The overall impact on biodiversity is likely to be localised and of low significance. It is very unlikely that the development will have any impact outside the footprint of the works. The data search results are considered unlikely to impact the decision-making process, and there is limited potential for key information to have been missed.

This approach is consistent with CIEEM's Guidelines for Accessing and Using Biodiversity Data (2020), which states that in low impact/small-scale scenarios, such as an extension to a residential property, or loft conversions (full or partial), a LRC search may not be required.

3. Baseline Ecological Conditions

3.1. Desk Study

3.1.1. Bat Roosts Reported in Planning Applications Within the Same Postcode

The local planning portal search¹³ detailed no planning applications which have submitted ecology survey reports within CF48 1HR.

3.1.2. 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

No SACs that have been specially designated for bats lie within 10km of the garage.

Other Protected Sites Within 2km

There are 2 additional SSSIs within 2km of the garage:

Table 1: Statutory Sites Within 2km

Site Name	Description	Distance and Direction from Development Site
Cwm Glo a Glyndyrys ¹⁴	Marshy grassland, species-rich neutral grassland, and lowland acid grassland. Important population of grassland fungi. The site encompasses a series of small enclosures surrounded by woodland, and extensive areas of open land with mature trees and scrub and woodland. Drainage is impeded in the small enclosures- supporting base-rich fen-meadow communities.	1.1km south-east of the site
Cwm Taf Fechan Woodlands ¹⁵	Semi-natural broadleaved woodland. Wide variety of plants including several rare species. The dominant tree species are oak, ash, and downy birch, with an understorey of shrubs such as hazel and hawthorn. The humid conditions in the wooded ravine allow a particularly rich moss and liverwort flora to grow, with over a hundred species recorded. There are a number of scarce plant species, such as limestone fern.	1.3km north-east of the site

There is no mention of bats in either of the SSSI citations.

¹³ [Search Results \(merthyr.gov.uk\)](https://searchresults.merthyr.gov.uk/)

¹⁴ https://naturalresources.wales/media/665303/SSSI_1597_Citation_EN0015616.pdf

¹⁵ https://naturalresources.wales/media/642350/SSSI_0404_Citation_EN001d5eb.pdf

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Local Nature Reserve (LNR)

There is one Local Nature Reserve within 2km of the garage.

Non-statutory Protected Sites

Country Parks

The garage does not lie within 2km of any Country Parks

Ancient Woodland Sites

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

Table 2: Ancient Woodland Sites Within 2km

Ancient Woodland Site	Number within 2km of Site
Ancient Semi-Natural Woodland (ASNW) ¹⁶	10
Restored Ancient Woodland Sites (RAWS) ¹⁷	Seven
Plantations on Ancient Woodland Sites (PAWS) ¹⁸	Two
Ancient Woodland Sites of Unknown Category ¹⁹	One
Nearest Area of Ancient Woodland	An unnamed area of ASNW located 1km north of the development site

Protected Sites Summary

Given the small scale and localised nature of the proposed development, the limited ecological connectivity around the site and/or the distance between the proposed development and any designated or non-designated sites, 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 E3: Suburban lighting zone, with medium district brightness (Institute of Lighting Professionals, 2012).

¹⁶ 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.

¹⁷ 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.

¹⁸ 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.

¹⁹ 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'.

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Several streetlights are present on Old Winch Fawr Road, and the connecting unnamed lane, that the garage is situated on which generate moderate artificial lighting, decreasing the quality of foraging and commuting bat habitat²⁰.

It lies on the edge of a suburban area and whilst broadleaved woodland is present directly to the direction of the site the garage is within a residential area and will experience moderate levels of artificial lighting from the streetlighting and properties to the north-west. This decreases the quality of foraging and commuting bat habitat²¹.

Ecological Context

The habitats surrounding the garage include a trees and hedgerow which immediately border the garage to the north-west, linked back gardens of the residential properties 40m to the north-west and south-west and hedgerow-lined fields 100m to the south-east. Though not completely continuous, these habitats act as an ecological corridor between the garage and the surrounding landscape. These habitats can be utilised by foraging and commuting bats and provide good connectivity between the garage and the wider landscape. Consequently, the site is of moderate-quality for foraging and commuting bats.

3.2.2. Building Description from the Perspective of Bat Habitat

The table below summarises the key features of the garage.

Table 3: Key Features of the Garage

Building Type	The garage is a single-storey structure composed of breezeblock with red brick decoration and cement rendering (Photos 1-3). It is currently being used as a carport and for storage purposes.
Roof	The roof is hipped and constructed from composite slate and clay ridge tiles. There are gaps beneath many of the ridge tiles present along the ridge line, and raised slates on the southern and northern sides (Photos 4 & 5). These features provide potential roosting opportunities for roosting bats.
Soffits, Fascias and Bargeboards	The timber soffit boxes on the northern, southern and western elevations sit proud off the external wall, providing a gap which could be utilised by roosting bats (Photos 6 & 7).
External Walls	The external walls of the garage are in good condition, with no gaps in the rendering or between the brickwork which could be utilised by roosting bats.
Doors	Two roller shutter doors are present on the eastern front of the building. There are gaps present between the external wall and door frames which could potentially be used by roosting bats, however, due to their shallow size and amounts of cobwebbing present around these features, most of these gaps are suboptimal for use by roosting bats (Photo 8). A large cavity is present above the shutter door which could allow access into the interior by bats (Photo 9).
Roof Void	The void within the garage is 2m high, 8.5m wide and 8m long. It has a queenpost truss design, and is lined with breathable membrane which is generally in good condition (Photo 10). The void is lined with plyboard with no insulation present. No light ingress was present within the void.

²⁰ Lighting can impact on bats' roosting sites, commuting routes and foraging areas.

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

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Security Lighting

Security lighting is present on both the eastern front and southern side (Photos 1 & 2).

Photos Showing the Garage and its Features

Photo 1: Eastern Front



Photo 2: Southern Side



Photo 3: Northern Side



Photo 4: Western Rear



Photo 5: Example of Gaps Beneath Ridge Tiles (Southern Side)



Photo 6: Example of Raised Slates (Southern Elevation)



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Photo 7: Example of Gaps Between the External Wall and Soffit Board (Circled)



Photo 8: Gaps Between Soffit Board and External Wall on Western Rear (Circled)



Photo 9: Example of Gaps Between External Wall and Door Frame



Photo 10: Gap Above Roller Shutter Door



Photo 11: Loft Void with Breathable Membrane



3.2.3. Potential Bat Access Points and Bat Roosting Locations

Potential Access Points for Bats in the Garage

Bats can gain entry into the interior through the gap above the roller shutter door and the external wall.

Potential Roosting Features for Bats

The following potential roost features were recorded:

- Beneath the gaps beneath the ridge tiles (Photo 5);
- Beneath the raised slates on the southern and northern pitch (Photo 6);
- Within the soffit boxes on the northern, southern and western elevations (Photos 7 & 8);
- Within the gaps between the external wall and roller shutter door frames (Photos 9); and
- Within the crevices of the timber joists within the loft void (Photo 11); and
- Within the loft void (Photo 11).

3.2.4. Nesting Bird Survey

No signs of recent nests were found within or on the exterior of the garage.

4. Evaluation

4.1. Summary of Preliminary Roost Assessment

The preliminary roost assessment found no evidence of bats roosting within or on the external parts of the garage.

4.2. Suitability of Summer Roosts

The garage is 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*)). The garage has multiple roosting features which could feasibly be used by crevice-dwelling bats, including the raised slates and ridge tiles, within the soffit boxes, in the gaps between the external wall and door frames, and within the timber joist crevices;
- Moderate 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 interior of the garage and the roof void can be accessed via the gaps above the roller shutter doors, and the timber beams provide potential roosting locations; and
- Negligible 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)) due to the lack of suitable access points into the garage.

The garage has an overall moderate bat roosting suitability due to the reasons stated above. This assessment will be used to determine the level of further survey effort required (see Appendix 2).

4.3. Potential Winter Roosts

The construction of the building is such that it would not typically be regarded as provided classic over-wintering (i.e. hibernation) roosts for bats due to the lack of deep penetrating crevices and the lack of any underground or subterranean features. However, the presence of a roof lining suggests a stable temperature regime within the void and the large and presence of gaps between roof timber mortise joints mean the presence of hibernating bats cannot be completely ruled out.

A full assessment of the potential for winter use (i.e. hibernation) will be undertaken after the completion of further dusk emergence surveys.

4.4. Birds – Interpretation of Nesting Bird Survey

No evidence of past or current nesting by birds was observed during the survey.

Further surveys for nesting birds will be undertaken at the same time as the dusk emergence surveys, and the assessment of its importance subsequently updated.

5. Required Actions

5.1. Licensing Requirements for Bats

It has not been possible to determine whether a NRW bat development licence will be required. This will be determined after the emergence surveys have been completed.

5.2. Further Work

Works should not commence until further surveys have been carried out. This will enable the likely impacts of the proposals on bats to be assessed, determine if a NRW bat development licence will be required, inform the avoidance measures (timing of works), and determine the requirement for mitigation (retention of roosts and access points) and/or compensation measures (creation of new replacement/additional bat roosts).

Current best practice guidelines (Collins, 2023) state that two separate dusk emergence surveys should be undertaken on a garage with moderate roost suitability. The surveys should be undertaken from May to September, with at least one of the surveys between May and August and will be supplemented by use of night vision aids.

To ensure that all potential bat access/roosting features are covered, both surveys will require two surveyors or night vision aids to be present (see Plan 4: Proposed Surveyor Positions).

Surveys should be timed to sample as much of the survey period as possible²², undertaken at intervals of at least three weeks apart, or preferably more (Collins, 2023). This increases the possibility of encountering bats that may only use the building for short periods throughout the summer. Ideally, at least one survey should be undertaken in the core maternity period of mid-June to mid-July.

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

These measures will be formulated after the completion of dusk emergence surveys.

5.4. Avoidance, Mitigation, Compensation and Enhancement Measures for Birds

These measures will be formulated after the completion of dusk emergence surveys.

5.5. Longevity of Report

If development works do not begin within twelve to eighteen months of the date of this report, an updated survey may be required to determine if conditions and bat usage has changed since described in the current report.

²² Collins (2023) states that multiple survey visits should be spread out to sample as much of the recommended survey period as possible; it is recommended that surveys are spaced at least three weeks apart, preferably more. Survey timings should consider the prevailing conditions in the year of survey, which will vary geographically. In years with a cold spring, the surveys should not be started in early May, or all completed in May. The surveys should maximise the possibility of detecting maternity roosts, which can switch roosts between pregnancy and lactation, and the optimum coverage includes the pre-parturition, post-parturition and mating periods.

Surveys for Professional Ecologists (Collins, 2023) states that survey data should ideally be from the most recent optimal survey season before a planning or licence application is submitted. This is because bats are highly mobile and so the numbers of bats present may have increased or decreased in numbers since the survey was undertaken. The guidance acknowledges that presence/status data (not absence data) older than this can have considerable value, particularly when collected over a number of years using different techniques. The value of older data should be considered when updating surveys as it may not be necessary to start from scratch²³.

CIEEM have issued an Advice Note on the Lifespan of Ecological Reports and Surveys (CIEEM, 2019), which states that a survey report that is less than 12 months old is likely to be valid in most cases; reports 12-18 months old are likely to be valid with some exceptions; reports 18 months to 3 years old require a site visit plus consideration of repeating the surveys (depending on the circumstances) and reports older than this are likely to require most of the surveys to be repeated.

The NRW EPS mitigation license application asks, *'is the survey data less than two active seasons old?' and if not, to 'please provide sound ecological reasoning for why this is acceptable.'*

²³ The factors identified are as follows: Were the original surveys carried out according to good practice guidelines?; Were the original surveys constrained in any way (in terms of timings, weather conditions, equipment used, number of surveyors, surveyor expertise, etc.)?; Do the results of the original surveys support the original conclusions and are these still relevant?; Has the nature of the site or the surrounding area changed since the original surveys were undertaken (e.g. has a structure deteriorated and become less suitable for a roost or has human occupation ceased and the structure become more suitable for a roost; and are additional surveys likely to provide information that is material to a decision (such as a planning consent, the design of mitigation measures, or specific advice relating to a proposed activity?

6. 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>

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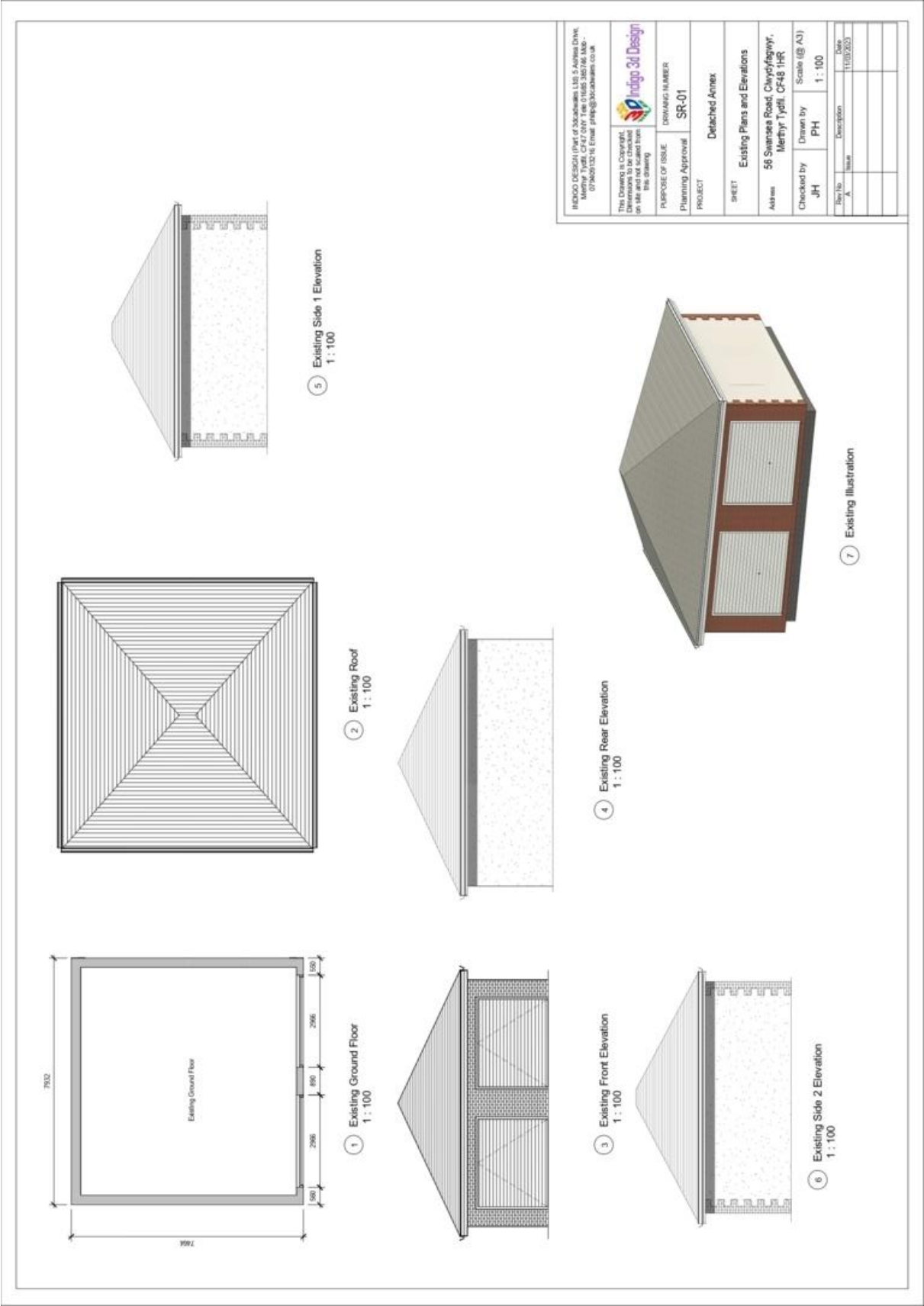
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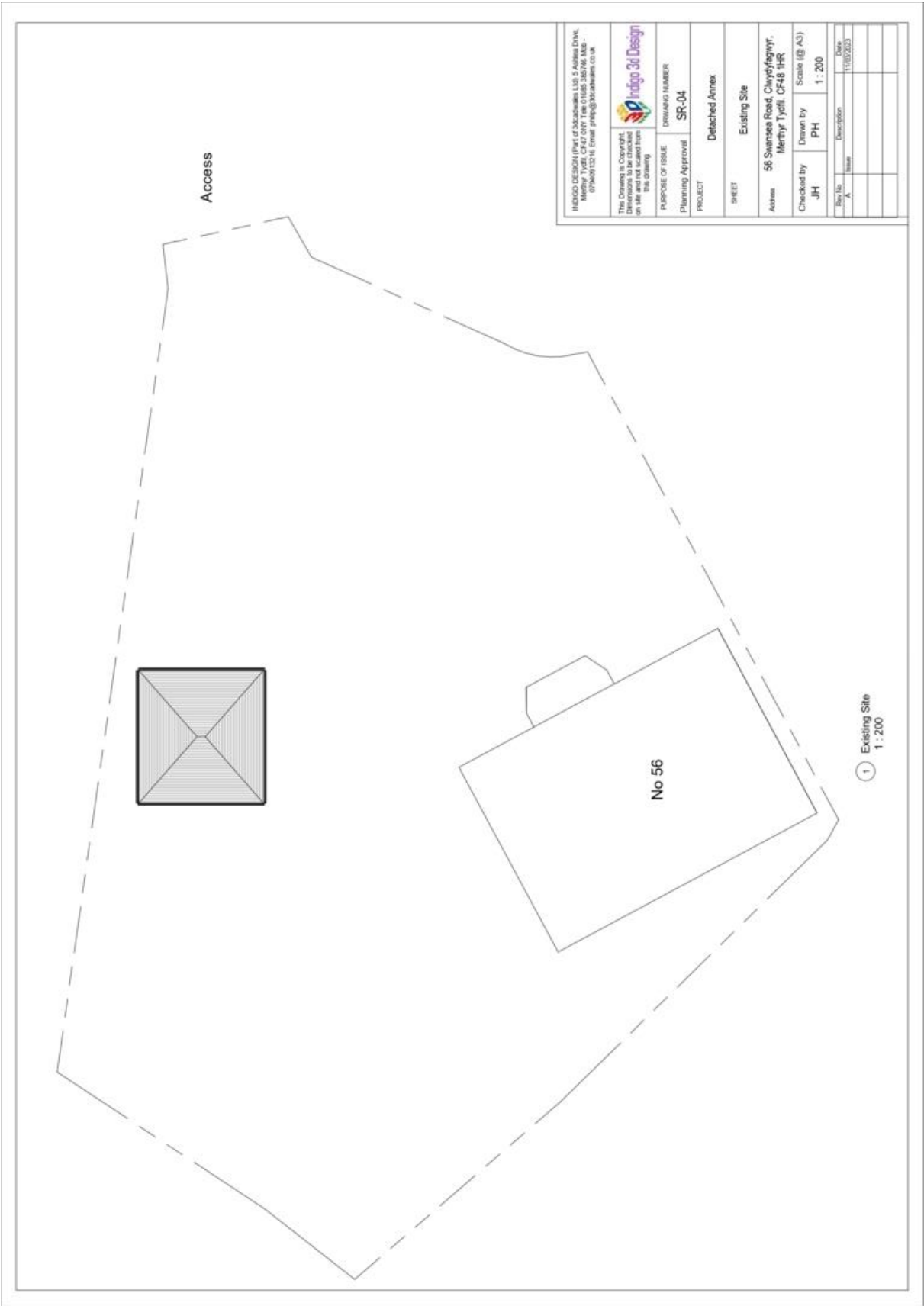
Drawing 1: Existing Site Plans



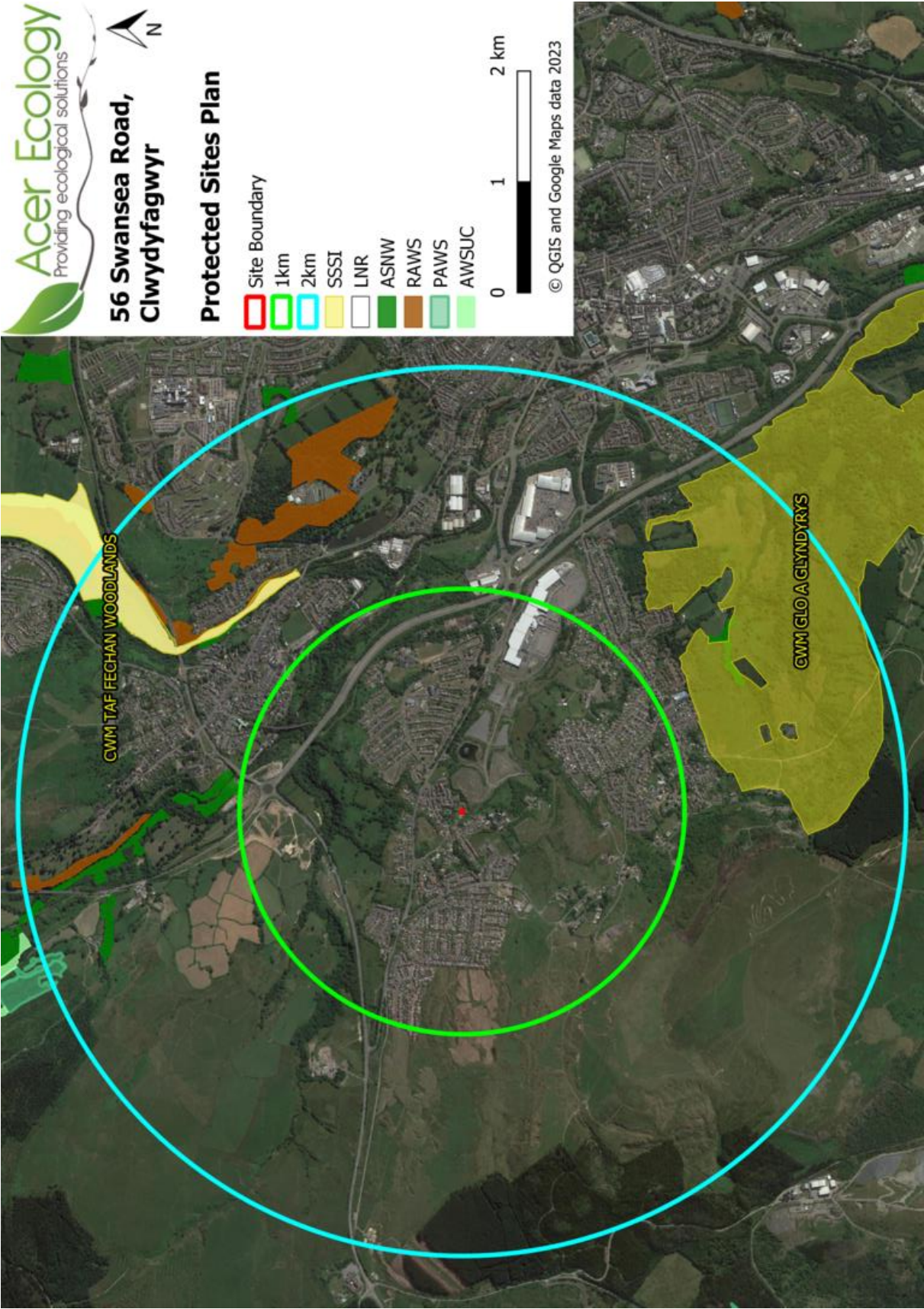
Plan 1: Location Plan



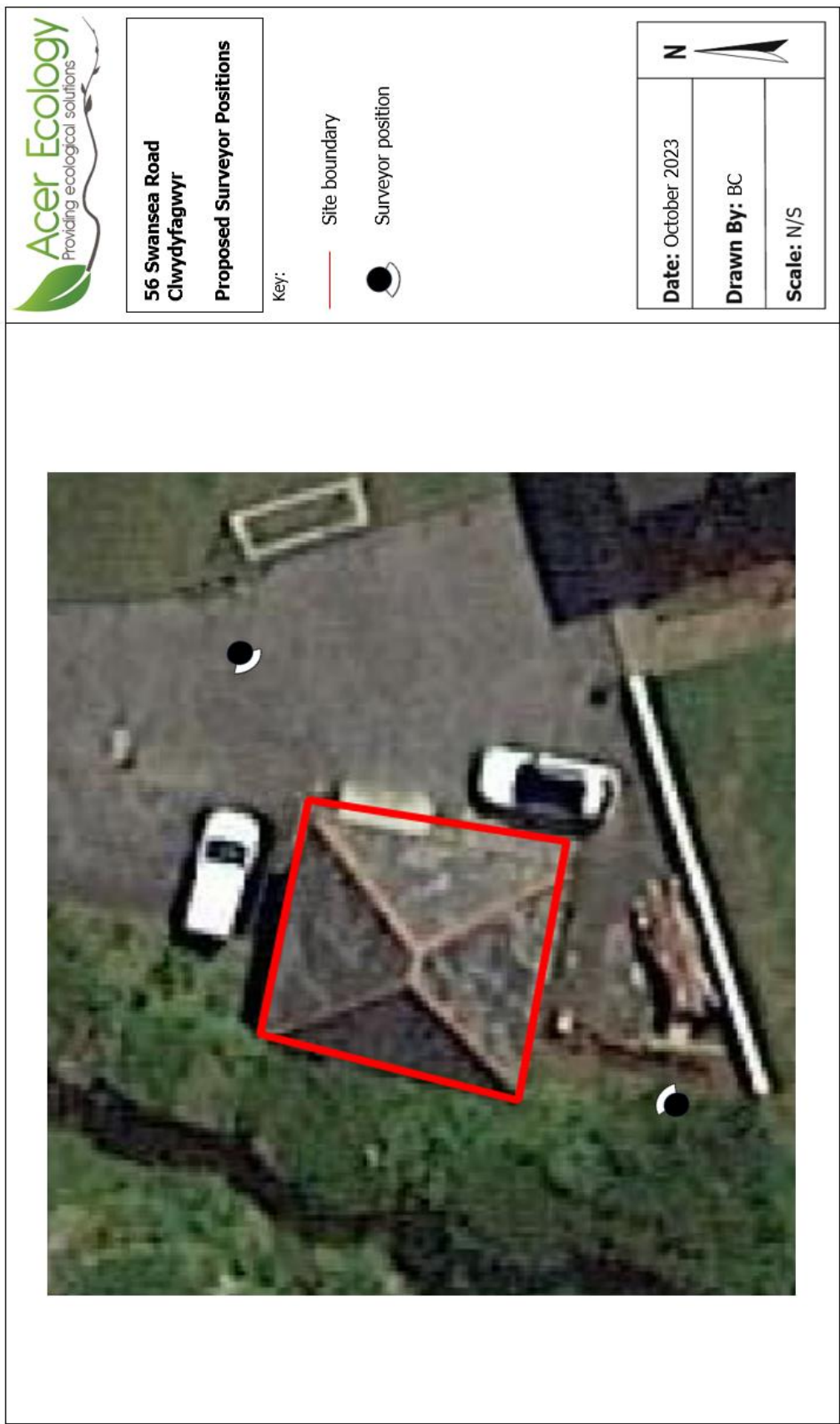
Plan 2: Block Plan



Plan 3: Protected Sites Within 2km



Plan 4: Proposed Surveyor Positions for Dusk Emergence Surveys



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

Acer Ecology

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 Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species (Amendment) (EU Exit) [‘CHSAEU’] Regulations 2019. The roosts are protected irrespective of whether bats are present at the time. The aforementioned legislation make 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 2016²⁴ 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 (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*)).

²⁴ <http://www.legislation.gov.uk/anaw/2016/3/contents>

Appendix 2: Guidelines for Assessing Potential Bat Roosting Suitability

Protentional Suitability	Roosting Habitats in Structures
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).
Negligible ²⁵	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ²⁶ 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 and not a classic cool/stable hibernation site, but could be used by individual hibernating bats ²⁷).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions (see footnote from low suitability) and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).
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 longer periods of time due to their size, shelter, protection, conditions (see footnote from low suitability) and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.
Confirmed Roost	Evidence of bats or use of bats found.

²⁵ Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute).

²⁶ For example, in terms of temperature, humidity, height above ground levels, light levels or levels of disturbance.

²⁷ Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2016 and Jansen *et al.*, 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.

Appendix 3: Guidelines for Determining Required Number of Dusk Surveys

Suitability	Minimum Number of Dusk Surveys Required ²⁸
Negligible	None.
Low	One survey visit comprising of a dusk emergence survey ²⁹ between May and August for structures. No further surveys are required for trees assessed as low suitability.
Moderate	Two separate dusk emergence survey visits ³⁰ . Surveys must occur between May and September ³¹ , with at least one survey between May and August ³² .
High	Three separate dusk emergence survey visits. Surveys must occur between May to September, with at least two surveys between May and August.

²⁸ Adapted from Tables 7.1 and 7.2 of the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2023).

²⁹ Structures that have been categorised as low potential can be problematic and the number of surveys required should be judged on a case-by-case basis (see para 5.2.44). In some cases, more than one survey may be needed, particularly where there are several buildings in this category.

³⁰ Multiple survey visits should be spread out to sample as much of the recommended survey period (see Table 7.1) as possible; it is recommended that surveys are spaced at least three weeks apart, preferably more.

³¹ September surveys are both weather- and location-dependant. Conditions may become more unsuitable in these months, particularly in more northerly latitudes, which may reduce the length of the survey season. September surveys are likely to miss maternity roosts due to dispersal before this time, but may still pick up mating roosts.

³² Multiple survey visits should be spread out to sample as much of the recommended survey period as possible; it is recommended that surveys are spaced at least three weeks apart, preferably more. Survey timings should consider the prevailing conditions in the year of survey, which will vary geographically. In years with a cold spring, the surveys should not be started in early May or all be completed in May. The surveys should maximise the possibility of detecting maternity roosts, which can switch roosts between pregnancy and lactation, and the optimum coverage includes the pre-parturition, post-parturition, and mating periods.

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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.