



Bat and Nesting Bird Survey Report
Glen View, 9 Primrose Lane, Pontardawe,
Rhos, Neath Port Talbot, SA8 3ES.
Surveys conducted July - September 2022



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SUMMARY

Brief and Site Location	This report presents the findings of a preliminary roost assessment (PRA) bat survey, nesting bird survey and two dusk emergence bat surveys (with the use of infrared video equipment) of the Glen View, 9 Primrose Lane, Pontardawe, Rhos, Neath Port Talbot, SA8 3ES (Grid Reference: SS 58695 96169).
Building Description	The dwelling house is a detached brick-built dormer bungalow with rendered walls with a small one storey rear extension. There is also a detached garage made of breeze blocks with rendered walls and a tarmac felt covered flat roof.
Site Description	The buildings are surrounded by front and rear gardens with lawn and shrubs and one small sized tree only. The site is surrounded by other dwelling houses and gardens to the west, north and east, with grazing fields to the south. Woodland copse areas are located to the west and south of the grazing fields.
Proposed Works	The proposed works involves demolition of the rear one storey extension and the garage, creation of two new rear dormers, building of a two-storey side extension and one-storey flat roofed rear and side extensions. The attic room will be converted into living areas. Two Velux windows will be installed at both sides of the building and four roof lights will be installed in the flat roofed one storey extension roof areas. A full re-roofing will be carried out as part of the proposed works.
Results of Preliminary Bat Roost Inspection	About 20 bat droppings typical in shape, size and location of pipistrelle bats were found inside the loft space (on the southern eaves side). A sample of the bat droppings was collected and sent for DNA testing to Swift Ecology with the purpose to identify the species. The result came back as both common pipistrelle bat (<i>Pipistrellus pipistrellus</i>) and soprano pipistrelle bat (<i>Pipistrellus pygmaeus</i>).
Evidence of Nesting Birds	No evidence of nesting birds was found during the surveys.
Results of Dusk Emergence Surveys	A maximum count of two common pipistrelle bats and one soprano pipistrelle bat were observed and recorded to emerge from the western side and southern rear roof areas of the bungalow, using two different access points.
Bat Mitigation Features	Temporary mitigation during works will be provided in the form of a bat box on a small garden tree. Four ridge tile gaps measuring about 20mm x 100mm will be created in the new clay tile roof areas during the works. 1F black bitumen roofing felt only will be used in the new roof areas. A dark zone for bats will be created along the western side of the building.
Biodiversity Enhancements	Night scented plants to encourage invertebrates (bat insect prey) will be planted in the rear garden areas. Bird nesting areas will be provided in the form of a one sparrow nest terrace bird nest box.
Licensing Requirements for Bats	A European Protected Species (EPS) licence will be required from Natural Resources Wales (NRW) prior to works being undertaken.

1. INTRODUCTION

1.1. Brief and Site Location

This report presents the findings of a preliminary roost assessment (PRA) bat survey, nesting bird survey and two dusk emergence bat surveys of Glen View, 9 Primrose Lane, Pontardawe, Rhos, Neath Port Talbot, SA8 3ES, (Grid Reference: SN 73888 02679)

1.2. Building Description

The dwelling house is a detached brick-built dormer bungalow with rendered walls with a small one storey rear extension. There is also a detached garage made of breeze blocks with rendered walls and a tarmac felt covered flat roof. There are three larger loft spaces that are all connected by smaller eaves loft areas inside the bungalow roof areas. The loft spaces are insulated at floor level with yellow fibre glass material and the concrete tile roof is lined with black bitumen roofing felt.

1.3. Site Description

The buildings are surrounded by front and rear gardens with lawn and shrubs and one small sized tree only. The site is surrounded by other dwelling houses and gardens to the West, North and East, with grazing fields to the South. Woodland copse areas are located to the West and South of the grazing fields.

See Appendix 1 for Existing Satellite Views

1.4. Proposed Works

The proposed works involves demolition of the rear one storey extension and the garage, creation of two new rear dormers, building of a two-storey side extension and one-storey flat roofed rear and side extensions. The attic room will be converted into living areas. Two Velux windows will be installed at both sides of the building and four roof lights will be installed in the flat roofed one storey extension roof areas. A full re-roofing will be carried out as part of the proposed works.

See Appendix 2-3 for Existing and Proposed Site Maps, Elevations and Floor Plans

1.5. Aims of the Survey

A Preliminary Roost Assessment (PRA) bat survey was carried out with the aim to look for evidence of bats roosting and for structures within the buildings that holds bat roosting potential. The survey was carried out in accordance with the methods described in the Bat Conservation Trust (BCT) Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016). Bat roosting potential was identified and evidence of bats in the form of bat droppings was found.

Dusk emergence surveys (with use of night vision equipment) were then carried out with the aim to determine numbers and species of bats present and to identify bat access points and roosting areas. An assessment will be made of the impact of the proposed works on these areas of the buildings and a bat mitigation plan to protect the bats and their roosts will be designed from the survey results.

1.6. General Information About Bats and Buildings

External features of the building can potentially be used as roosting sites by e.g. Pipistrelle bat species (*Pipistrellus* spp.). Pipistrelle bats are the most common bats out of the British species, and they are known to roost in buildings utilising areas such as cavity walls, soffits and fascia boards, and In-between tiles/slates and roofing felt. It is not practical to carry out a full physical examination of such building features, which is why dusk and dawn surveys have to be done during summer months (May-September) when the bats are fully active. Access points of 1-2 centimetres only are used by bats to enter and exit their roosting sites. Most dwelling houses will have gaps of such size in roof areas as ventilation of the building would otherwise not be possible.

Internal areas such as loft spaces can potentially be utilised by bat species such as e.g. Brown Long-eared bats or Serotine bats, as these types of bats are known to commonly roost inside lofts. This can generally be discovered via droppings inside the loft, as the droppings will stay protected from weather elements.

Lesser and Greater horseshoe bats also roost inside buildings and generally require a larger sized opening for entry to the interior. They are more commonly found inside disused buildings or outbuildings.

1.7. Legislation informing planning policy

All UK species of bat are designated as 'European Protected Species'. Their breeding sites or resting places (roosts) are fully protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species and Planning (various amendments) (England and Wales) Regulations 2017, until and unless superseded by The Conservation of Habitats and Species (Amendment) (EU Exit) ['CHSAEU'] Regulations 2019.

2. METHODOLOGY

The surveys have been carried out in accordance with the methods described in the Bat Conservation Trust (BCT) Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016).

2.1 Preliminary Roost Assessment (PRA) Methodology

A Preliminary Roost Assessment (PRA) bat survey of the bungalow and garage was carried out 12th of July 2022 by Lee Gwyther (NRW bat licence ref: S089870/1). The buildings were surveyed during daytime for evidence of bats in the form of live or dead bats, droppings, urine staining and insect feeding remains such as e.g. moth and butterfly wings. A careful visual search using a LED Lenser L7 spotlight was conducted. The exteriors of the buildings were surveyed for bat roosting potential and for droppings on walls and window ledges. An endoscope (Ridgid SeeSnake CA-300) was used for spot checks of internal and external gaps and a telescopic ladder was used as needed. The buildings were examined internally and externally using zoom photography to identify structural features that hold bat roosting potential.

2.2 Bat Roosting Suitability

The bat roosting suitability was assessed according to the scale negligible, low, moderate or high. This assessment was used then to determine the number of surveys conducted for the buildings.

Negligible: This category describes buildings of a simple structure where all structural features can easily be surveyed with a visual inspection or investigated with an endoscope. For example a simple wooden garden shed, a corrugated iron barn or precast concrete modular garage may fit this category.

Low: This category is used to describe simple structure buildings that have very few potential bat roosting features, but all areas cannot be surveyed visually or investigated with an endoscope.

Moderate: This category is used to describe buildings that have some potential to support roosting bats, but is considered to be less than ideal in some way. Some but not all modern industrial and agricultural buildings may fit this category if they are of a simple structure with single layer walls and unlined roof areas.

High: This category is used to describe buildings with multiple internal and external structural features suitable for roosting bats. Most brick built dwelling houses and timber or stone barns will be covered by this category. Features that may be used by bats are e.g. loft spaces and other smaller roof voids, gaps between overlapping clay tiles, gaps in-between the tiles or slates and the roofing felt, cavities under ridge tiles, under soffits fascia and barge boards, by the brickwork of chimney stacks, under lead flashing, inside cavities of flat roofs, under wall hanging tiles, behind wooden cladding or other wooden structures, inside cavity walls or other smaller wall cavities, in gaps and cracks of stone walls and inside wooden beam mortise and tenon joints.

Confirmed: This category is used where evidence of bats such as live or dead bats or bat droppings are present, or where there are records of a bat roost in the building within the last 5 years.

2.3 Emergence Survey Methodology

Two hour long emergence surveys of the bungalow and garage were conducted by two surveyors; Lee Gwyther and Erika Dahlberg 25th July 2022, and by Erika Dahlberg and Benjamin Livick 10th of September 2022. The surveys started 30 minutes before the official sunset and were finished 1.5 hours after sunset.

The surveyors were equipped with Pettersson D1000X and Elekon Batlogger M bat detectors. Notes were being kept and the surveyors were in communication via a mobile phone app to discuss the observations if needed.

A combination of patrolling and stationary surveying was used to be able to view the roof areas from different angles and to get as close as possible to all potential access points around the building. Brown long-eared bat calls can only be recorded from a distance of approximately 3-5 meters, while Lesser and Greater horseshoe bats have directional calls and may be difficult to capture. The buildings were observed to overview roof areas early in the evening, while the surveyors moved closer to the walls as it gets darker.

See Appendix 4 for Surveyor Experience

2.4 Infrared Video Camera Equipment Methodology

Infrared night vision video camera equipment was used for all dusk surveys in the form of one Canon XA15 HD Professional Camcorder, one Canon XA10 Professional Camcorder and one Panasonic HC-VX980 Camcorder. The buildings were illuminated with infrared lights in the form of one Nightfox XB10 IR, one Ultra Fire 501-IR/850nm infrared illuminator torch, one Nightfox XB5 IR infrared illuminator and one JC illuminator. A passive Elekon Batlogger M was paired with one of the cameras.

See Appendix 5A-B for surveyor and infrared camera positions

2.5 Weather Conditions

This information was taken from the BBC Weather online forecast for Pontardawe, to illustrate that the survey was conducted during suitable weather conditions. Bats are generally fully active in the months of May - September at temperatures above 10°C if there are favourable weather conditions such as no strong winds (less than 15 mph) and no overnight rain.

Table 1: Weather Conditions

Survey date	Sunset/ Sunrise	Cloud cover	Start temp	End temp	Humidity	Wind speed
25 July 2022	21:16	Part Cloud	15°C	14°C	10%	9 mph
10 Sep 2022	19:43	White Cloud	16°C	15°C	5%	5 mph

2.6 Sound Analysis

The bat sound recordings made during the surveys were analysed using BatSound 4 software (Pettersson Elektronik) and BatExplorer 2.1.7.0. software (Elekon). All bat call recordings were compared to published reference material such as British Bat Calls Jon Russ (2012) and to a private reference library of previous recordings made from known bat species.

2.7 Night Vision Video Recordings

The infrared video recordings from the surveys were reviewed on a laptop screen in the office at a later stage. Additional information gained was added to the information from surveyor notes and the sound analysis results.

2.9 Survey for Nesting Birds

A visual search was undertaken for active bird nests, as well as any signs which might indicate either past or current nesting, such as inactive nests, bird skeletons, guano, birds carrying nesting material, food items, egg shells and calling chicks.

3. RESULTS

3.1 Protected Sites

3.1.1 Statutory Protected Sites Designated for Bats Within 10km:

There are no SSSI or Sac's designated for bats within a 10km radius.

3.1.2 Statutory Protected Sites Within 2km:

Fforest Goch Bog (SSSi) 360 meters south. 'The bog is at approximately 100m above sea level, in a low saddle in the ridge between the Swansea and Neath Valleys. There are no inflows of water to the bog, indicating it is ombrogenous (rain-fed). The main habitats present at the site are lowland raised bog and marshy grassland with an edging of scrub on the westerly side. Lowland raised bog is a rare resource in Wales, particularly in south Wales, and Fforest Goch Bog represents by far the best and much the least disturbed site when compared with the other three possible examples within the West Glamorgan and Llanelli area of search.'

Ref: https://naturalresources.wales/media/669119/SSSI_3033_Citation_EN00118de.pdf

3.1.3 Other Protected Sites Within 2km:

- Four Restored Ancient Woodland Sites. nearest 1km west
- Two Ancient Woodland sites of Unknown Category nearest 1.7 km west.
- Four Plantation on Ancient Woodland sites nearest 1.25 km north-east.

See Appendix 6 for protected sites within 2km

3.2 Foraging and commuting potential

The site is surrounded by other dwelling houses and gardens to the West, North and East, with grazing fields to the South. Woodland copse areas are located to the West (130m) and (180m) South of the grazing fields. In addition, the Fforest Goch Bog (mentioned above) is located 360m to the south. These areas may be used as foraging areas by the bats.

3.3 Artificial lighting levels

The site is assessed as being within Zone E3 (Institute of Lighting Professionals, 2012) as the buildings are situated in suburban or village surroundings with other dwelling houses and street lighting.

3.4 PRA Bat Survey Results

Potential Bat Access points and roosting areas: Potential bat access points and roosting areas were found in the form of the loft spaces, gaps under ridge tiles and bonnet tiles, gaps in-between concrete tiles and black bitumen roofing felt, gaps along soffits and barge boards at the bungalow, and under fascia boards at the garage.

Bat Roosting Suitability: The bat roosting suitability of the building as assessed according to the scale negligible, low, moderate or high and the bungalow and garage were deemed to have moderate bat roosting suitability with a confirmed bat roost due to bat droppings found inside the loft space. The site was deemed to be located within an area of moderate bat foraging and commuting suitability.

See Appendix 7 for photos of the buildings

Evidence of Bats: Approximately 20 bat droppings typical in shape, size and location of pipistrelle bats were found inside the loft space (on the southern eaves side). The bat droppings are likely to have fallen inside the loft space from the concrete roof areas via gaps in the black bitumen roofing felt.

See Appendix 8 for Location of Bat Droppings Inside Loft Space

Evidence of Birds: No evidence of nesting birds was found during the surveys.

3.5 DNA Testing Results of Bat Droppings

A sample of the bat droppings was collected and sent for DNA testing to Swift Ecology with the purpose to identify the species. The result came back as both common pipistrelle bat (*Pipistrellus pipistrellus*) and soprano pipistrelle bat (*Pipistrellus pygmaeus*).

See Appendix 9 for DNA Testing Results of Bat Droppings

3.6 Dusk Emergence Survey Results

25 July 2022: No bats were noted to emerge from the bungalow or garage during the first dusk survey.

Small numbers of common and soprano pipistrelle bats were noted to emerge from the neighbouring dwelling houses (to the east and west) of the garden, and to commute and forage in the southern and western garden areas throughout the survey. Noctule bats (*Nyctalus noctula*) were noted to commute and forage to the south of the site.

See Appendix 10A-B for dusk survey results

10 Sep 2022: Two common pipistrelle bats (*Pipistrellus pipistrellus*) and one soprano pipistrelle bat (*Pipistrellus pygmaeus*) were observed and recorded to emerge from the western side and southern rear roof areas of the bungalow, using two different access points.

Small numbers of common and soprano pipistrelle bats were noted to emerge from the neighbouring dwelling houses (to the east and west) of the garden, and to commute and forage in

the southern and western garden areas throughout the survey. One Natterer's bat (*Myotis nattereri*) was noted to commute along the front road at the end of the survey.

3.7 Infrared Video Camera Equipment Result

Night vision equipment infrared video cameras did not manage to capture footage of the emerging bats.

3.8 Identified Bat Access Points and Roosting Areas

Access point A: The access point is a gap under a ridge tile in the one storey extension (to be demolished). The bat roosting area is here likely to be in the cavity under the ridge, or in-between the concrete tiles and the black bitumen roofing felt.

Access point B: The access point is a gap under a bonnet tile. The bat roosting area is here likely to be in the cavity under the bonnet, or in-between the concrete tiles and the black bitumen roofing felt.

See Appendix 11 for Position of Identified Bat Access Points

Table 2: Number of Bats Emerging by Species

Bat species	Soprano pipistrelle	Common pipistrelle
25 July 2022	0	0
10 Sep 2022	2	1

Table 3: Roost Characterisation

Bat Species	Maximum Count	Roost Type	Rarity Category	Importance of Roost
Common pipistrelle bat	2	Day roost	Abundant	Local
Soprano pipistrelle bat	1	Day roost	Abundant	Local

4. EVALUATION

4.1 Discussion of Results

A maximum count of two common pipistrelle bats (*Pipistrellus pipistrellus*) and one soprano pipistrelle bat (*Pipistrellus pygmaeus*) were observed and recorded to emerge from the western side and southern rear roof areas of the bungalow, using two different access points.

About 20 bat droppings typical in shape, size and location of pipistrelle bats were found inside the loft space (on the southern eaves side). The bat droppings are likely to have fallen inside the loft space from the concrete roof areas via gaps in the black bitumen roofing felt.

A sample of the bat droppings was collected and sent for DNA testing to Swift Ecology with the purpose to identify the species. The result came back as both common pipistrelle bat (*Pipistrellus pipistrellus*) and soprano pipistrelle bat (*Pipistrellus pygmaeus*).

The small numbers of bats using several different access points and roosting areas indicates the presence of small colonies of non-breeding bats.

4.2 Potential impacts on bat foraging and commuting habitat.

No trees or other vegetation is being removed as part of the proposed works.

4.3 Restrictions or Constraints

Biological Record Data Search: A Local Records Centre (LRC) data search was not undertaken due to the low impact and small-scale nature of the development. 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 on 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 an LRC search may not be required.

No Dawn Surveys: Dawn surveys were not carried out, as temporary professional guidelines (Bat Conservation Trust) from 2022 allow for the use of night vision equipment to replace this part of the surveys, unless deemed that it would be really useful for the scenario.

5. IMPACTS AND RECOMMENDATIONS

5.1 Impact of Works on Bats

The proposed partial demolition and full re-roofing works will permanently destroy bat roosts with two species of bats: two common pipistrelle bats and one soprano pipistrelle bat.

5.1.1 Short-term Impacts

Noise, Dust and Vibration During Construction Phase: If the proposed work is undertaken whilst bats are present, it could result in the physical disturbance of bats, noise and vibration disturbance through increased human presence or noise generating equipment, and potentially direct injury or killing of bats from being crushed or entombed. If the work is undertaken during the active bat season between May and September, there is greater potential for bats to be impacted.

5.1.2 Long-term Impacts

Roost Loss and Modification: In the absence of mitigation, the works would lead to the permanent loss of the common and soprano pipistrelle bat roosts. In the absence of mitigation, modern breathable membranes may be installed. This material would carry a risk of entanglement and subsequent death for any bats using the building.

Increased Levels of Lighting: Indirect disturbance impacts are likely to involve increased light levels as the building will have additional windows and glazed garden door areas.

5.2 Survey Effort

The buildings were deemed to have moderate bat roosting suitability and to be within an area with moderate bat foraging and commuting suitability. Two dusk emergence surveys, spaced apart by at least two weeks, were conducted during optimal weather conditions to illustrate the use of the building as a bat roost over a period of time. The surveys were conducted during a time of the year when bats are generally fully active. Use of infrared video cameras was deemed to replace the need for conducting dawn re-entry surveys, in accordance with temporary professional guidelines from 2022.

5.3 Longevity of Report

Bat Surveys for Professional Ecologists (Collins, 2016) states that the survey data should ideally be from the last survey season before a planning or licence application is submitted, although the length that survey data remains valid should be decided on a case-by-case basis and is dependent upon several factors. It is considered that if development works do not begin within eighteen months (CIEEM, 2019) to two years of the date of this report, an update survey may be required in accordance with guidance in BS 42020:2013 and CIEEM (2019), to determine if conditions and evidence of bat use has changed since described in the current report.

5.4 Requirement for a Habitats Regulations (EPS) licence

The proposed demolition works will cause the permanent destruction of bat roosts with two species of bats roosting. It will be necessary to apply for a European Protected Species (EPS) licence for bats with Natural Resources Wales (NRW) prior to the start of works.

6. BAT MITIGATION PLAN

6.1 Prior to Start of Work

Timing Restrictions for Works: Exclusion works of bats in the concrete tile roof areas will be restricted to the months of Mar-Apr or Oct-Nov to minimise disturbance during the active summer months May-Sep and the core hibernation season Dec-Feb when bats may hibernate inside wall cavities.

See Appendix 18 for time schedule of works

Temporary Mitigation - Bat Box: In advance of the works, one Vivara Pro WoodStone bat box will be positioned on a small garden tree located in the rear south facing garden.

See Appendix 13-15 position and specification of temporary mitigation bat box and 10 for position and specification of in-wall bat boxes

6.2 Precautions During Works

On-site Supervision During Works: A licensed bat ecologist will hold a “tool box talk” to the building contractors prior to works commencing. The licensed bat ecologist will be on-site during the removal of roof areas and other external features with bat roosting potential in case any bats or evidence of bats are found and will be on standby during further works. Evidence found during works may be used to tweak and improve the mitigation plan if possible.

Precautions if Bats are Found During Works: Actions taken to protect bats that may be found during works will depend on stage of works and weather conditions. A health check will be conducted prior to release. Bats will be captured by hand (wearing gloves, face mask and using hand spirit sanitiser) and temporarily transferred to a pet container. The bat will then be transferred into a bat box before works commenced. The access point of the bat box will be blocked with a cloth until the working day has been completed. This will allow the bat to settle in a safe place for the remainder of the day, and to emerge safely in the evening. The bat will then be able to move to a safe nearby roosting area of its own choice. Bats are known to move around between several roosting areas to avoid predators and build-up of parasites.

6.3 Permanent Mitigation

Ridge Tile Gaps: Four ridge tile gaps measuring about 20mm x 100mm will be created in the new clay tile roof areas during the works. This will allow for the bats to roost under the cavity of the ridge tiles. A ‘wet ridge system’ will ideally be used instead of a ‘dry ridge system.’ The gaps can then be created in the wet mortar. Alternatively, gaps may be cut in the lower part of the ridge tiles themselves.

See Appendix 12, 13 and 16 for position and specification of ridge tile gaps

Using ‘Bat Friendly’ Roofing Materials: 1F black bitumen roofing felt only will be used in the new clay tile roof areas of the building. Breathable membranes will not be used as they may due to wear and tear by the little bat claws can give rise to dislodged fibres which can cause bats to become tangled and strangled. A PhD study by Stacey Waring under Reading University proving the negative effect of breathable membranes to endangered species was published in 2013.

Limited External Lighting on Site and Dark Zone: Extra care will be taken to ensure that external lights are kept to a minimum and will not illuminate the bat access points or flight paths to nearby trees. The light will be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. A shield or hood will be used to control or restrict the area to be lit and limit “light spillage” on the site. Soprano and common pipistrelle bats are known to be amongst the least “light sensitive” bat species in the UK but may abandon their roosts if their access points are illuminated. A dark zone for bats will be created along the western side of the building.

See Appendix 13 for Location of Dark Zones and Night Scented Plants

6.4 Biodiversity Enhancements

Sparrow Terrace Nest Box: Bird nesting areas will be provided in the form of a one sparrow nest terrace bird nest box, that will be positioned on an external wall. This will be installed as a biodiversity enhancement for the site during the development.

See Appendix 12, 13 and 17 for location, position, and specification of sparrow terrace nest box

Night Scented Plants: An area in the garden will be landscaped and designed to provide a habitat suitable for bat foraging. Night scented plants will be used 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* sp.), violets (*Viola* sp.); or shrubs such as flowering currant (*Ribes sanguineum*), privet (*Ligustrum vulgare*), forsythia (*Forsythia* sp.), honeysuckle (*Lonicera periclymenum*), dogwood (*Cornus sanguinea*), berberis (*Berberis* sp.), pyracantha (*Pyracantha* sp.) and ceanothus (*Ceanothus* sp.).

See Appendix 13 for Location of Dark Zones and Night Scented Plants

6.5 Post Project Monitoring

Bat Mitigation Check: The bat access points will be inspected by a licenced bat ecologist on completion, or during works if deemed as easier. This will be carried out before the end of the month of April to allow for the bats to return to their roosting areas before the next active bat season of May-September.

Post Project Monitoring Surveys: Post project monitoring surveys to evaluate the success of the bat mitigation will not be necessary for this particular scenario as it involves small numbers of common species only.

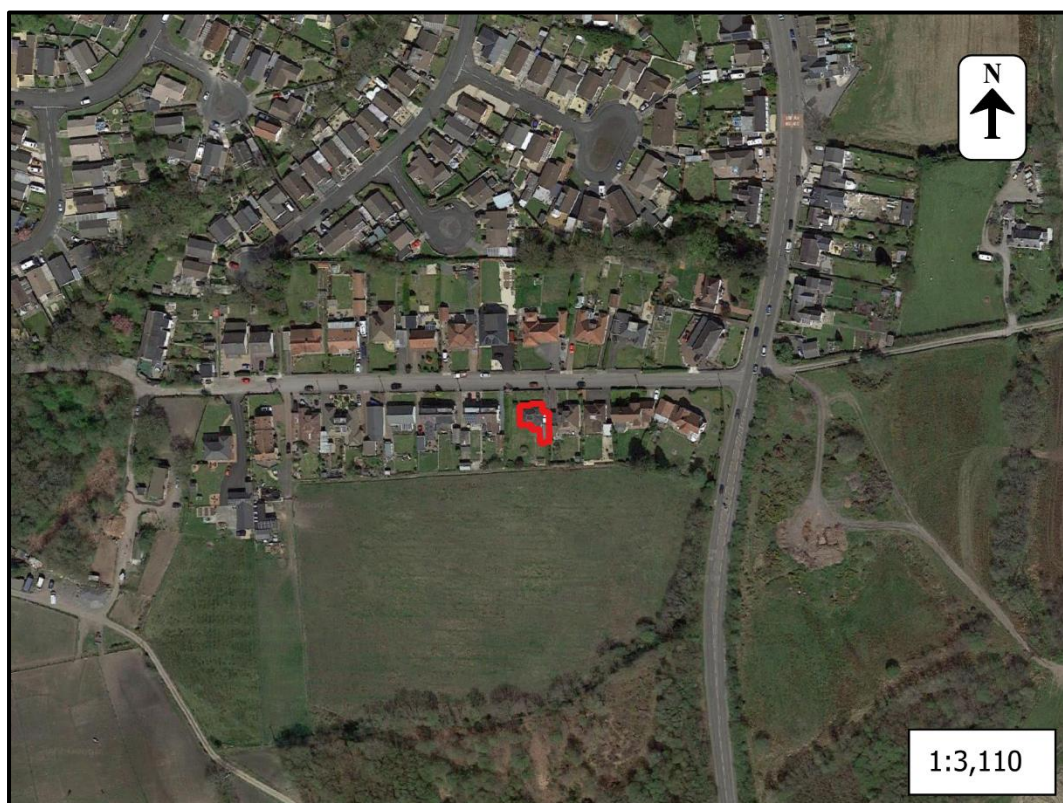
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- Waring, S., *et al*, (2013). *Double Jeopardy: The Potential for Problems when Bats Interact with Breathable Roof Membranes in the UK*. *Architecture & Environment*, 1 (1). pp. 1-13. ISSN 2329-2296

Appendix 1: Existing Satellite Views

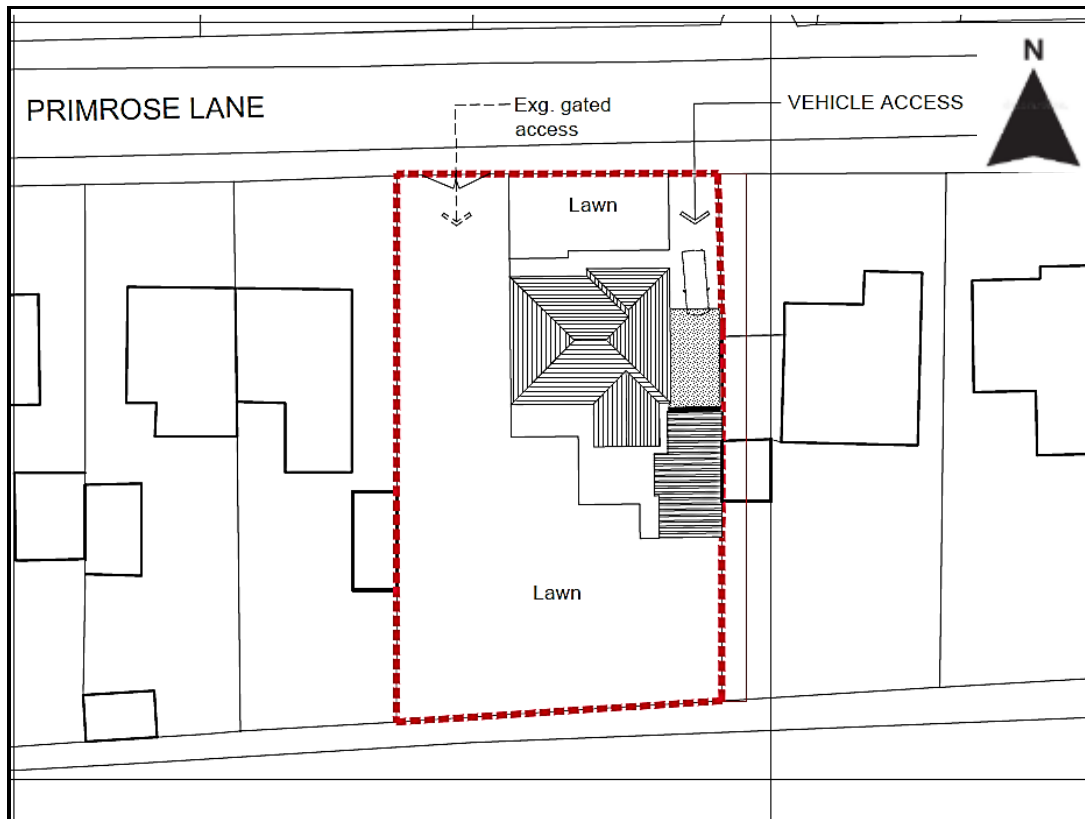


Satellite view of Glen View

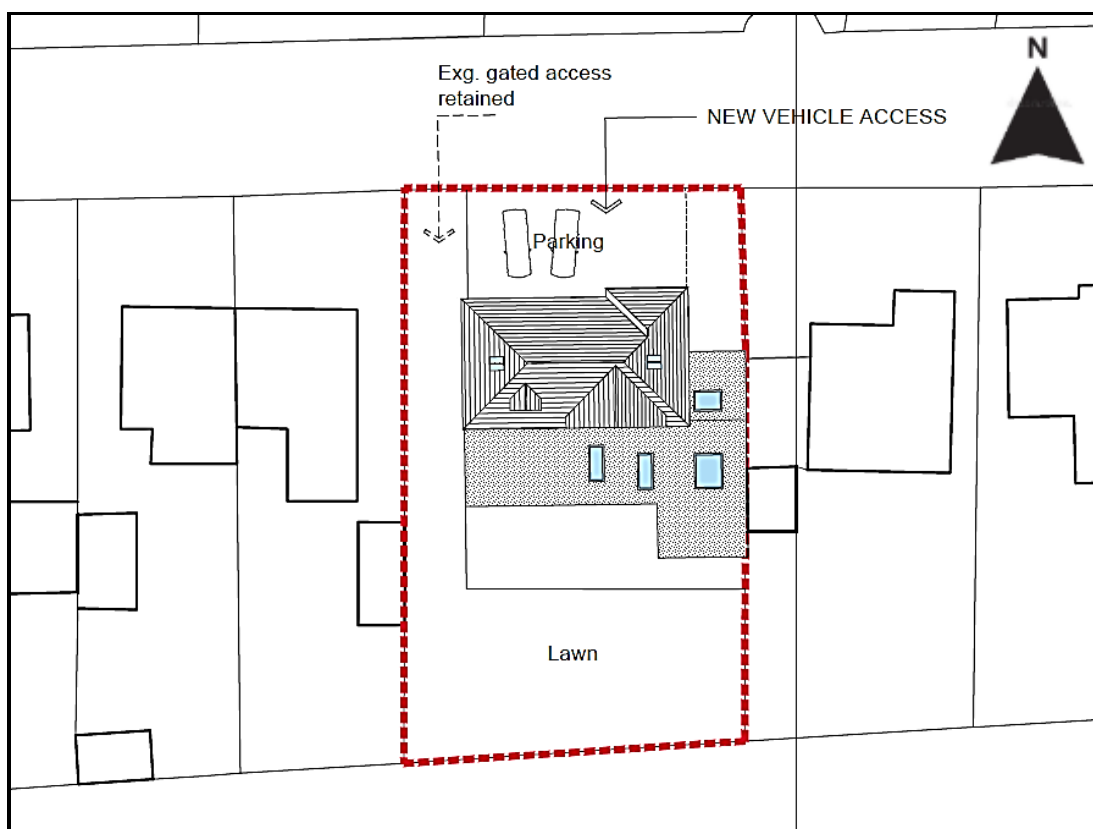


Satellite view of the surrounding landscape

Appendix 2: Existing and Proposed Site Maps



Existing Site Map of Glen View

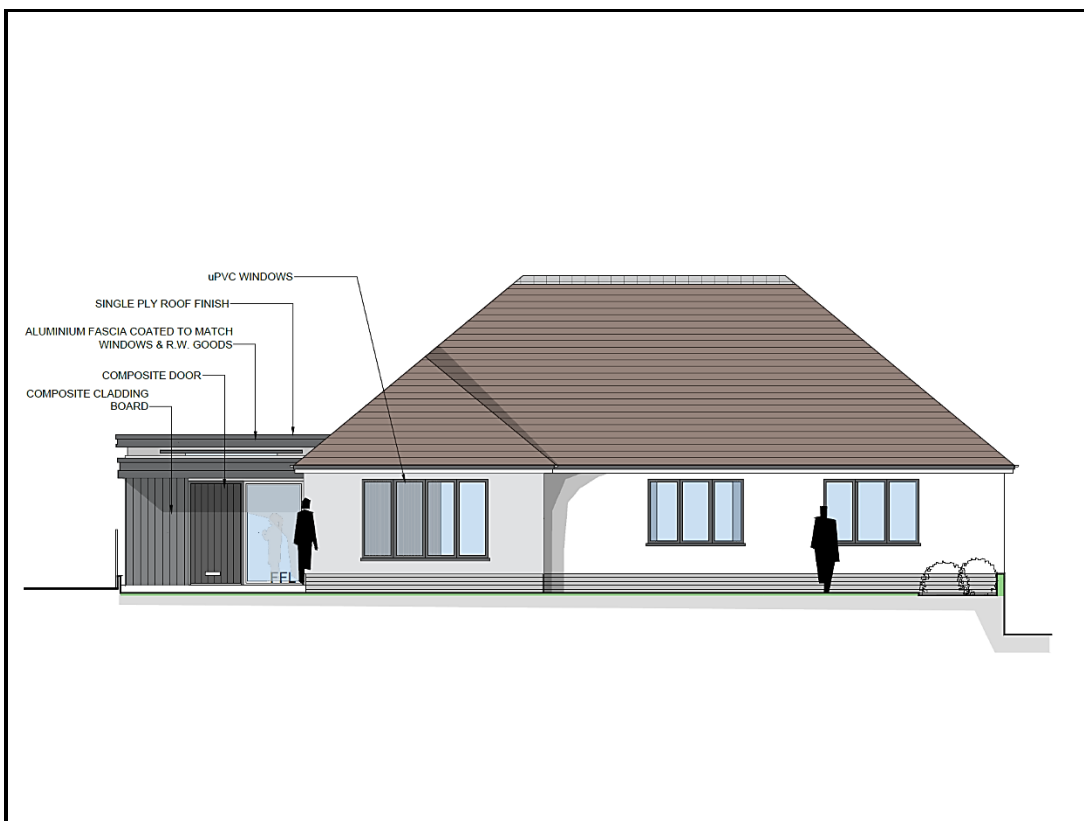


Proposed site map of Glen View

Appendix 3A: Existing and Proposed Elevations

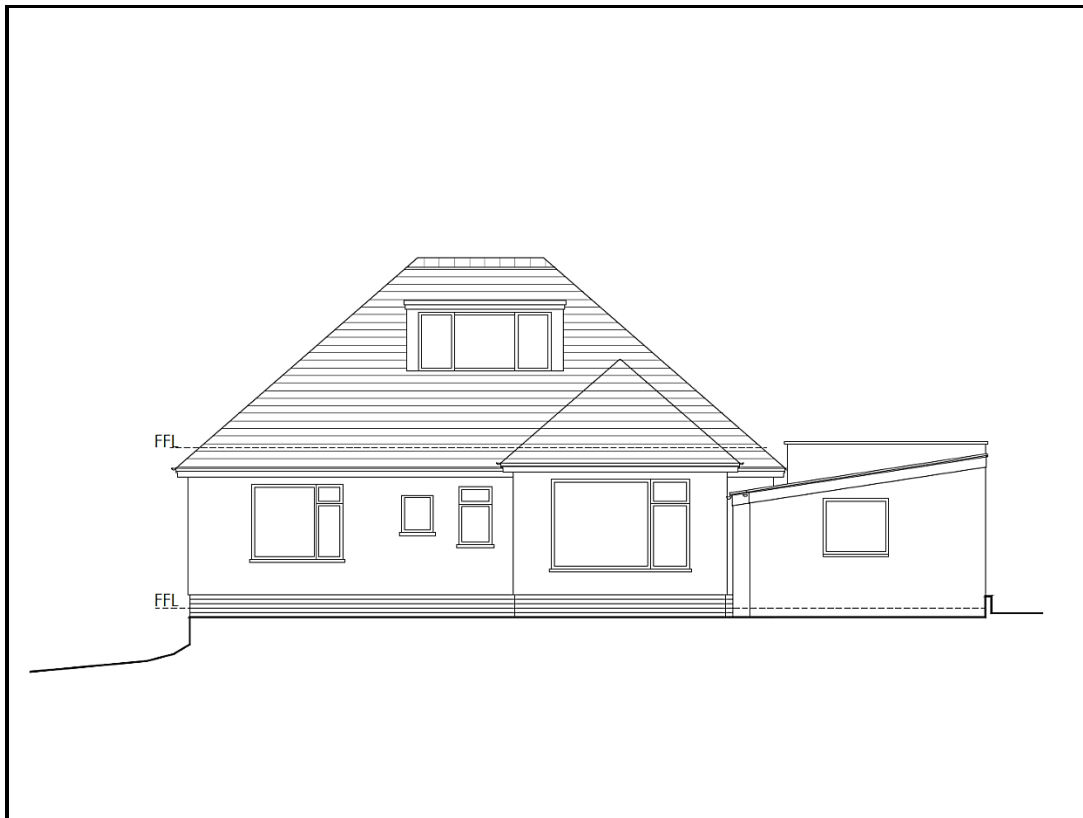


Existing North facing front elevation



Proposed North facing front elevation

Appendix 3B: Existing and Proposed Elevations

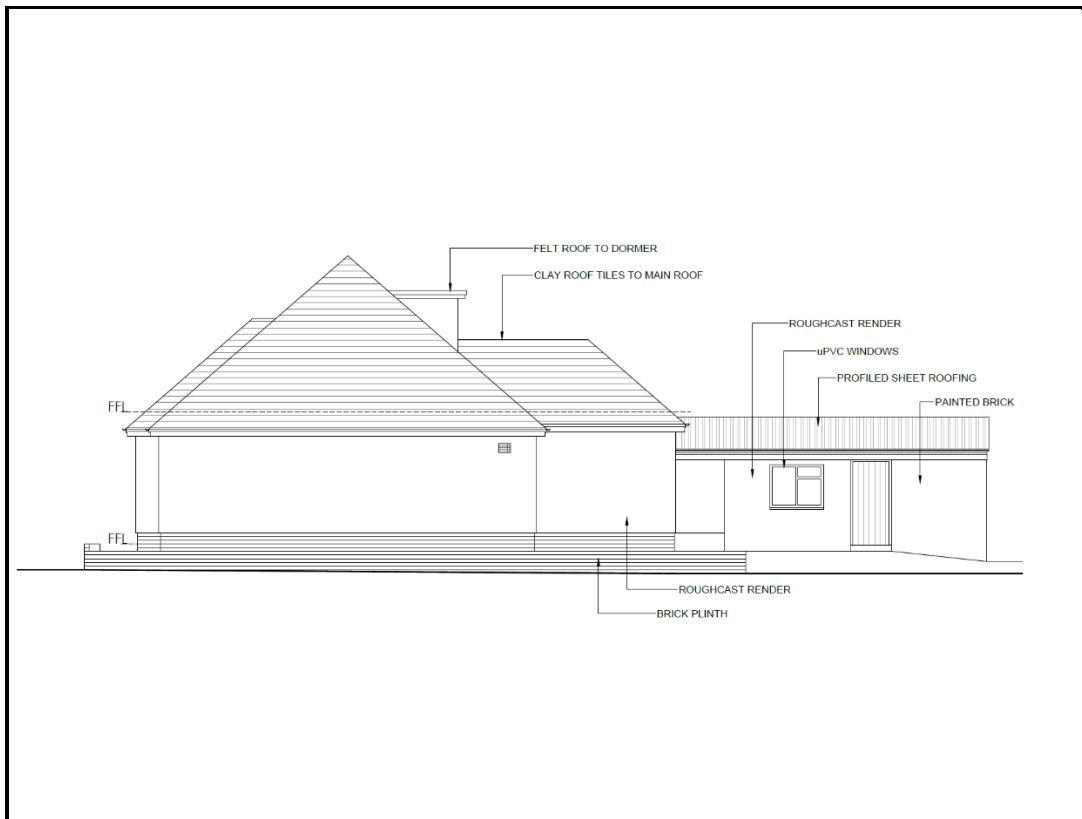


Existing South facing rear elevation



Proposed South facing rear elevation

Appendix 3C: Existing and Proposed Elevations

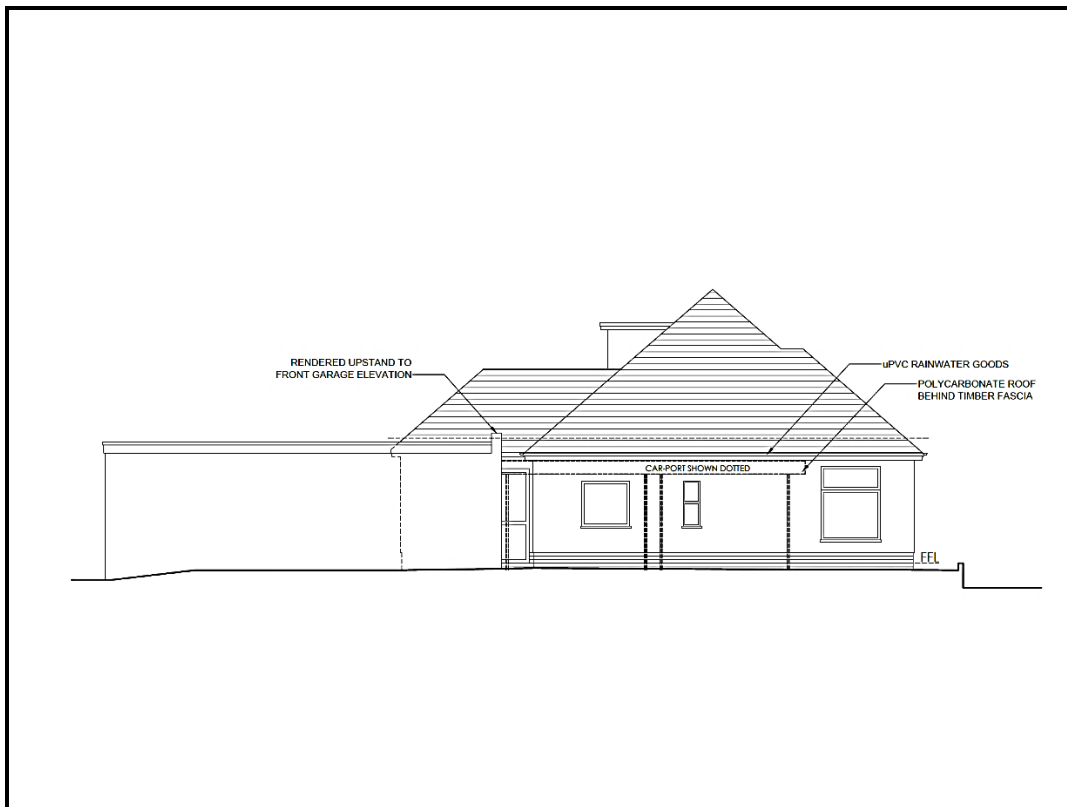


Existing West facing side elevation

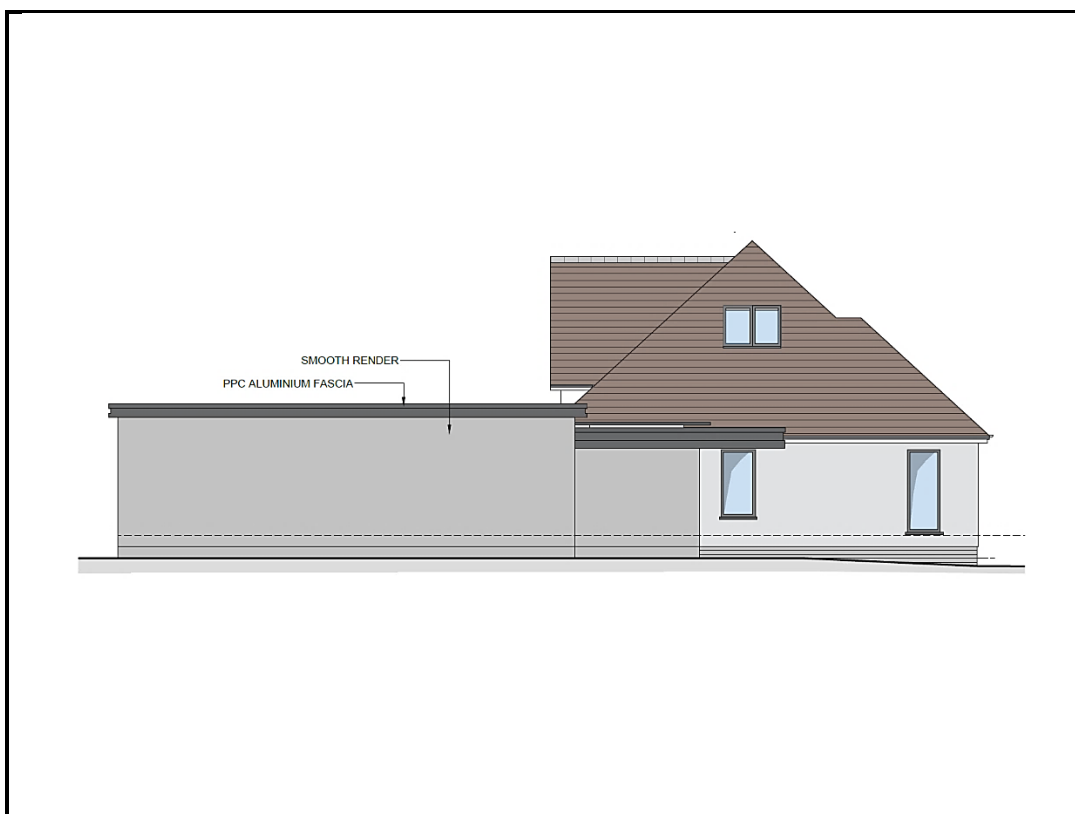


Proposed West facing side elevation

Appendix 3D: Existing and Proposed Elevations

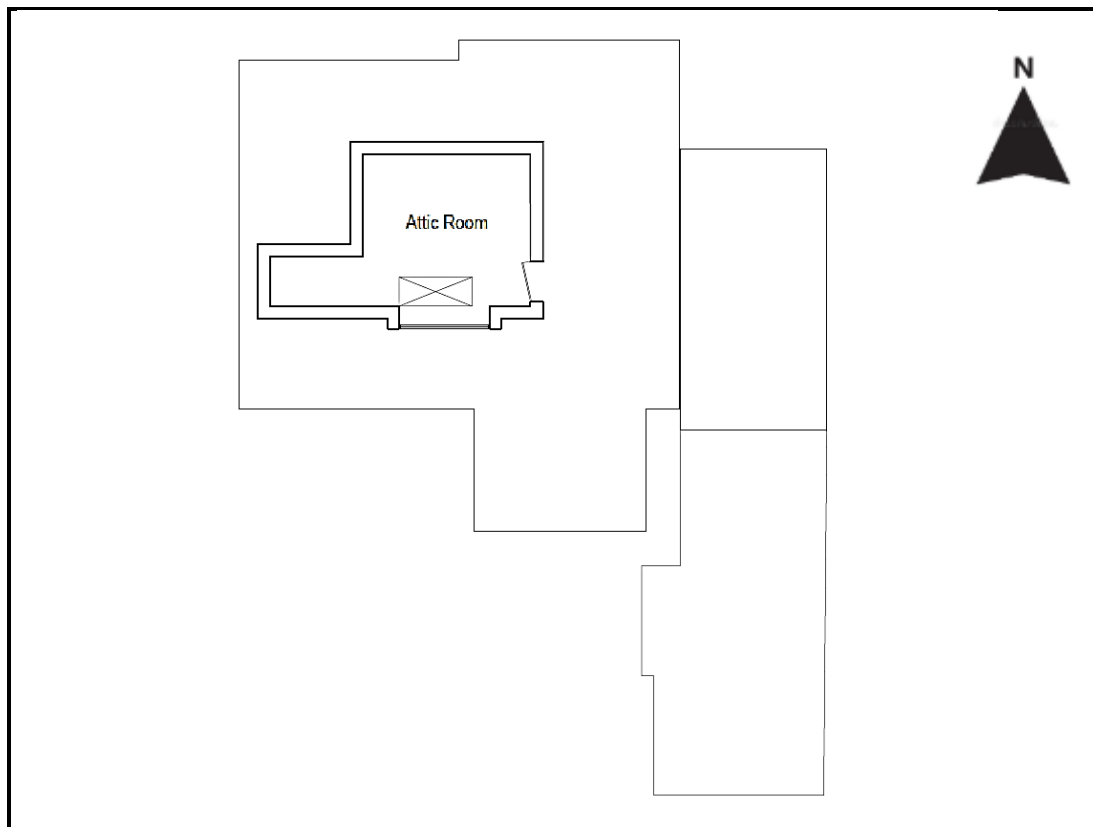


Existing East facing side elevation

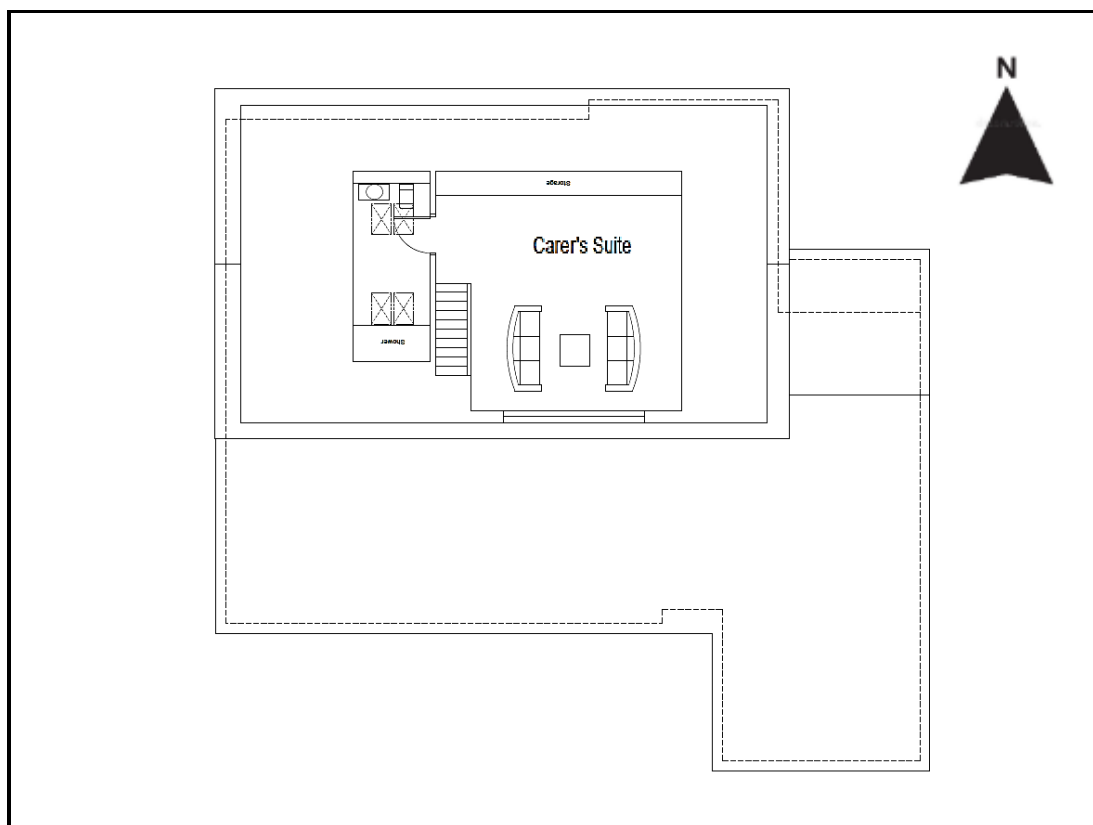


Proposed East facing side elevation

Appendix 3E: Existing and Proposed Upper Floor Plans



Existing Upper Floor Plan – Attic room to be converted



Proposed Upper Floor Plan – Some parts of the eaves loft will still be retained

Appendix 4: Surveyor Experience

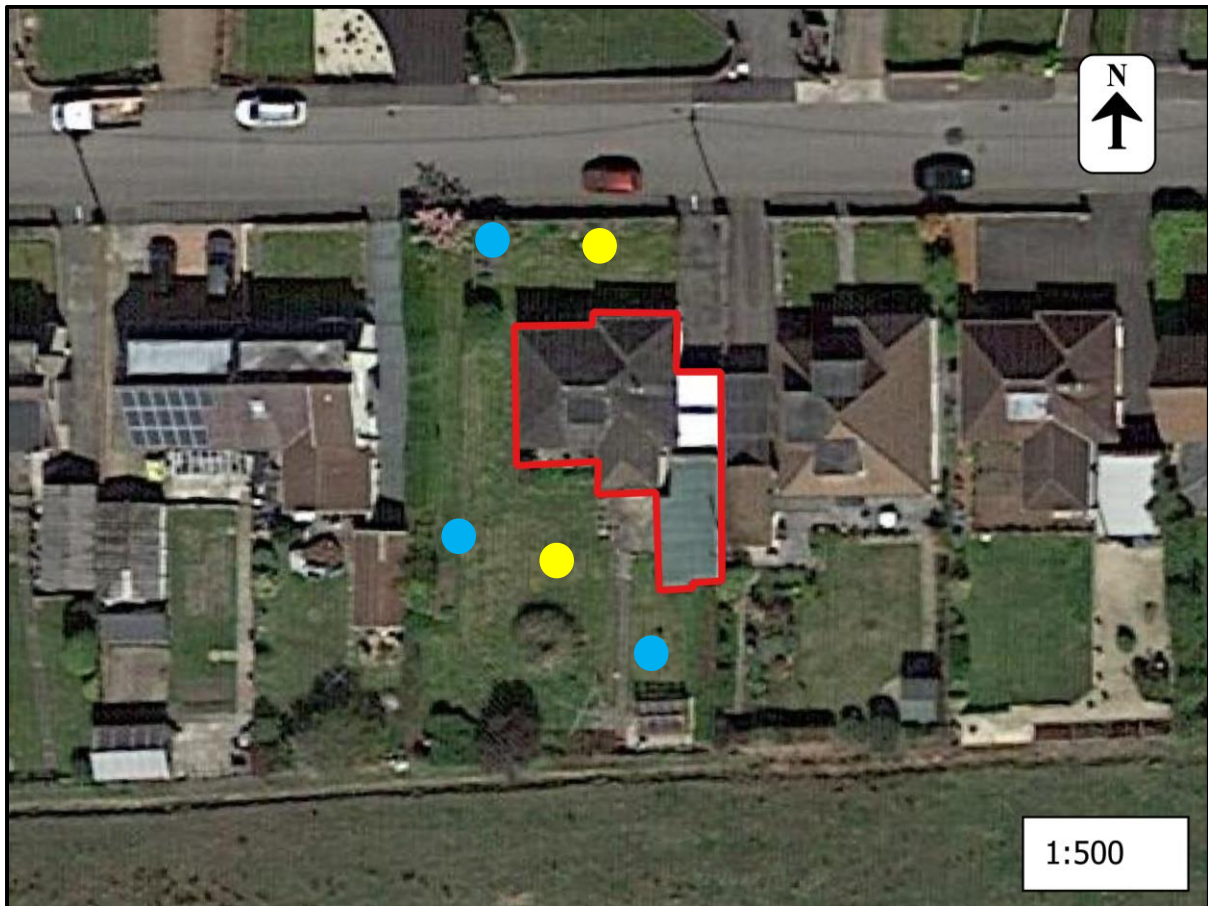
Lee Gwyther - Lee holds Class 2 (including handling) bat licences in both Wales (NRW Ref: S087986/1) and England (NE Ref: 2020-46267-CLC-CLS). He is the managing director of Grounded Trees and Ecology Ltd, an arboriculture and ecology company specializing in bats and trees. For the past five years he has been taking part in a monitoring scheme looking at bat roosts within tree, including maternity roosts. He has experience of undertaking tree climbing surveys for bats, preliminary roost assessment (PRA) building inspections, on-site supervision of building works, dusk emergence and dawn re-entry bat surveys.

Erika Dahlberg – Erika graduated from Portsmouth University with a BSc (Hons) in Animal Management and from Napier University Edinburgh with a PGDip in Wildlife Biology and Conservation. She has been conducting professional bat surveys in a full time capacity since 2009 and used to run her own business (Winchester Bat Consultancy) specialising in bat surveys for 9 years. She holds Welsh (NRW Licence Number S091598-1) and English bat licences (2015-17115-CLS-CLS) and is experienced in undertaking preliminary roost assessment (PRA) building inspections, on-site supervision of building works, dusk emergence and dawn re-entry bat surveys. Further details of her qualifications and experience can be found on LinkedIn:

<https://www.linkedin.com/in/erika-dahlberg-287b7596>.

Benjamin Livick – Ben has a BSc in Ecology from Nene University Northampton and has been undertaking training in bat ecology and bat surveys with Erika Dahlberg since May 2019, so is now on his fourth season of conducting regular surveys. He has also spent significant amounts of time volunteering for various conservation projects during the years of his education.

Appendix 5: Surveyor and Infrared Video Camera Positions



Satellite view of Glen View

● = Surveyor Position

● = Infrared Video Camera Position

Appendix 6: Protected Sites Within 2km



Appendix 7: Photos of the Buildings



Photo 1: North facing front



Photo 2: South facing rear



Photo 3: East facing side



Photo 4: West facing side



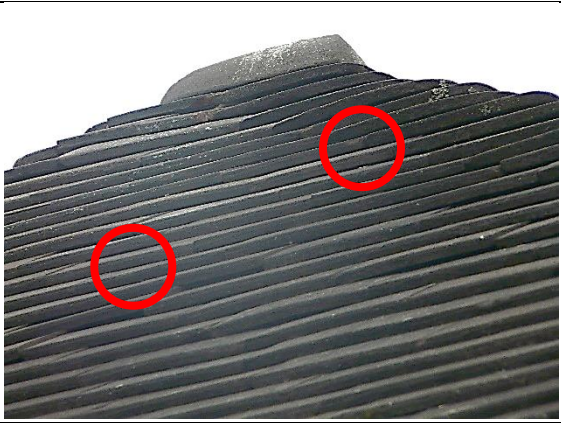
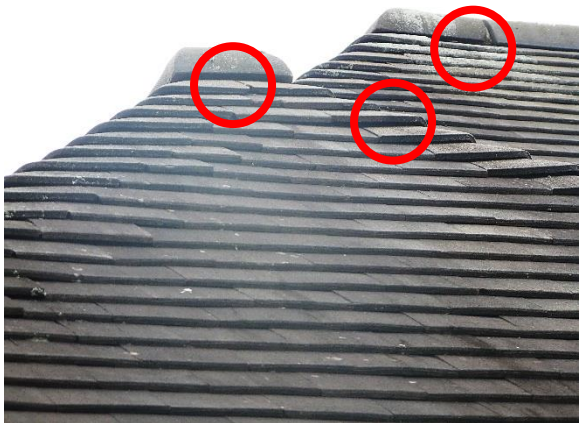
Photo 5: West facing front of garage



Photo 6: South facing side

	
Photo 7: Interior view of garage	Photo 8: Interior view of garage
	
Photo 9: Garden view - front garden	Photo 10: Garden view – west side garden
	
Photo 11: Garden view – rear garden	Photo 12: Views to the south west

Appendix 7B: Photos of Potential Bat Access Points

 A close-up photograph of a roof with dark grey concrete tiles. A white flue pipe protrudes from the roofline. A red circle highlights a gap between the tiles directly beneath the flue pipe.	 A photograph of a roof with dark grey concrete tiles. Two red circles highlight gaps between the tiles, one near the top ridge and one further down the slope.
Photo 13: Gaps under concrete tiles by flue	Photo 14: Gasp under concrete tiles
 A close-up photograph of a roof ridge with dark grey concrete tiles. A red circle highlights a gap between the tiles at the ridge line.	 A photograph of a roof with dark grey concrete tiles. Three red circles highlight gaps: one at a ridge, one under a roof bonnet, and one between tiles.
Photo 15: Gaps under ridges	Photo 16: Gaps under ridges and bonnets
 A photograph of the underside of a roof eave. A white soffit is visible above a brown plastic vent. A red circle highlights a gap between the soffit and the vent.	 A photograph of a dark brown wooden fascia board above a light-colored concrete wall. A red circle highlights a gap between the fascia board and the wall.
Photo 17: Gaps under soffits by vent	Photo 18: Gaps along fascia at garage

Appendix 7C: Photos of Loft Spaces



Photo 19: The concrete tile roof is lined with black bitumen roofing felt



Photo 20: The loft floor is insulated with yellow fibreglass material at floor level



Photo 21: Internal view of loft spaces



Photo 22: Internal view of loft spaces



Photo 23: Internal view of loft spaces



Photo 24: Internal view of loft spaces



Photo 25: Internal view of eaves loft spaces



Photo 26: Internal view of eaves loft spaces



Photo 25: Location of bat droppings found



Photo 26: Close up view of bat droppings



Photo 27: Close up view of bat droppings



Photo 28: Close up view of bat droppings

Appendix 8: DNA Testing Results of Bat Droppings

Order Number: 1485



info@groundedtrees.uk

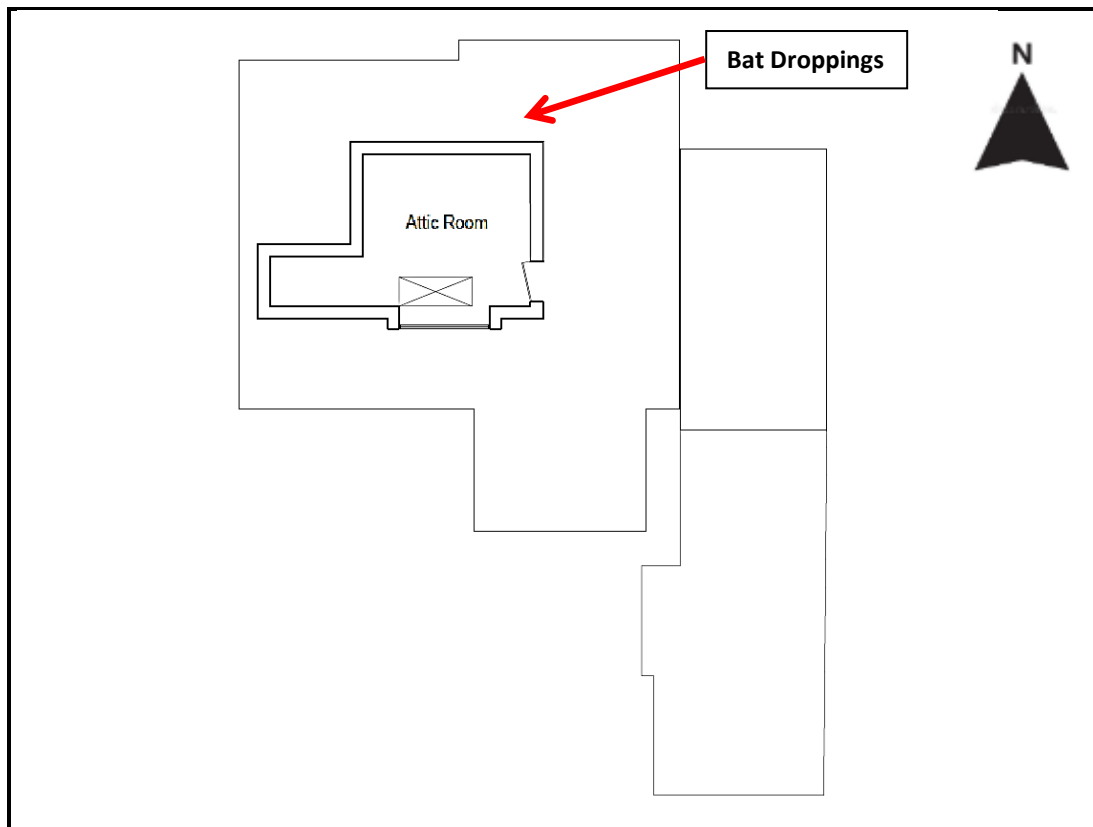
Samples submitted

Sample Code	Multi-species?	Sample Type	Date Sample Found	Species Group	Site postcode/post town /grid ref	Site description / comments (Optional)	Suspected identity of species
SEL-1485-1	No	Faecal	12/07/2022	Bats	SA8 3ES		Pipistrelle

Analysis Results

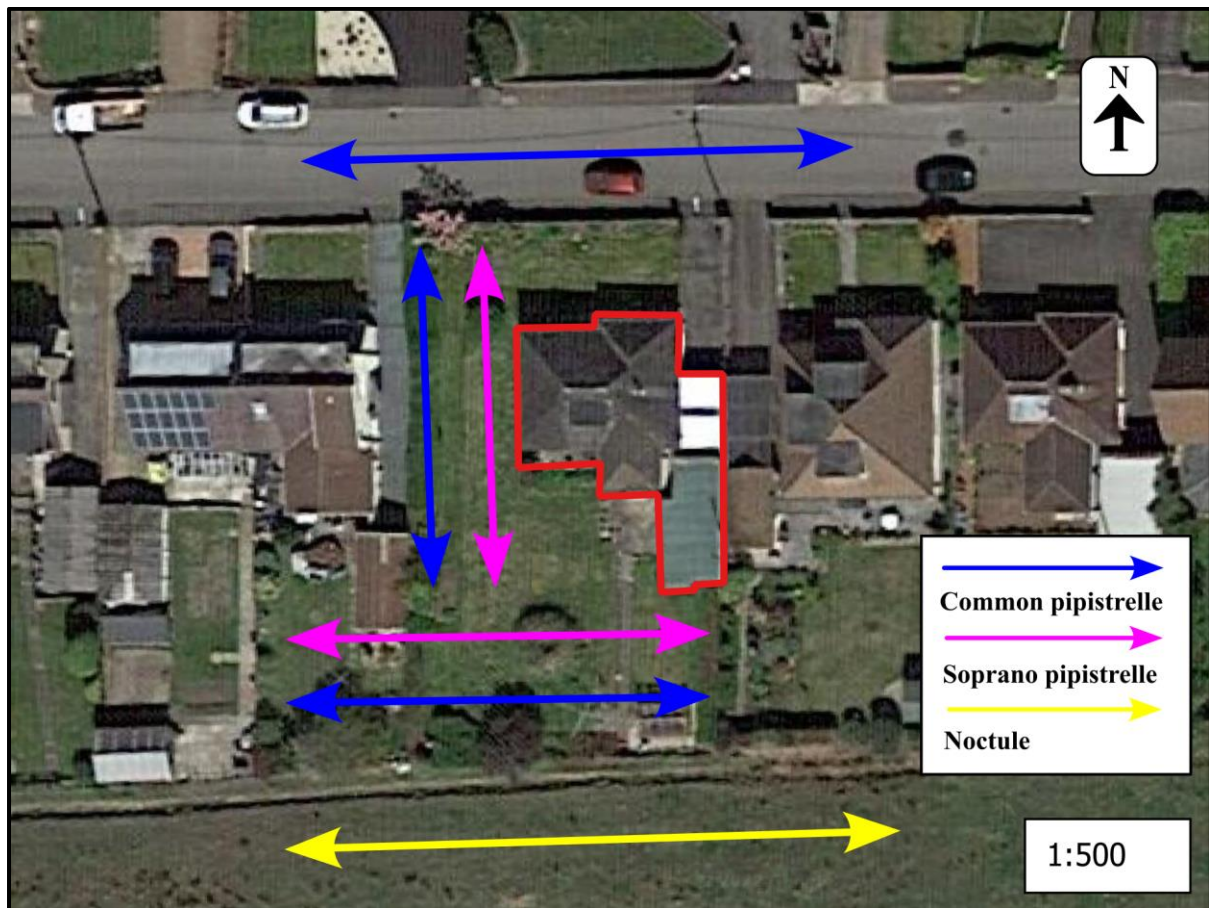
Sample Code	DNA Extraction Code	Species Identified	ID Method	Ct value	% match
SEL-1485-1	EG-2022-0926	Pipistrellus pipistrellus (Common pipistrelle bat) and Pipistrellus pygmaeus (Soprano pipistrelle bat)	qPCR	18/19	

Appendix 9: Location of Bat Droppings Inside Loft Space



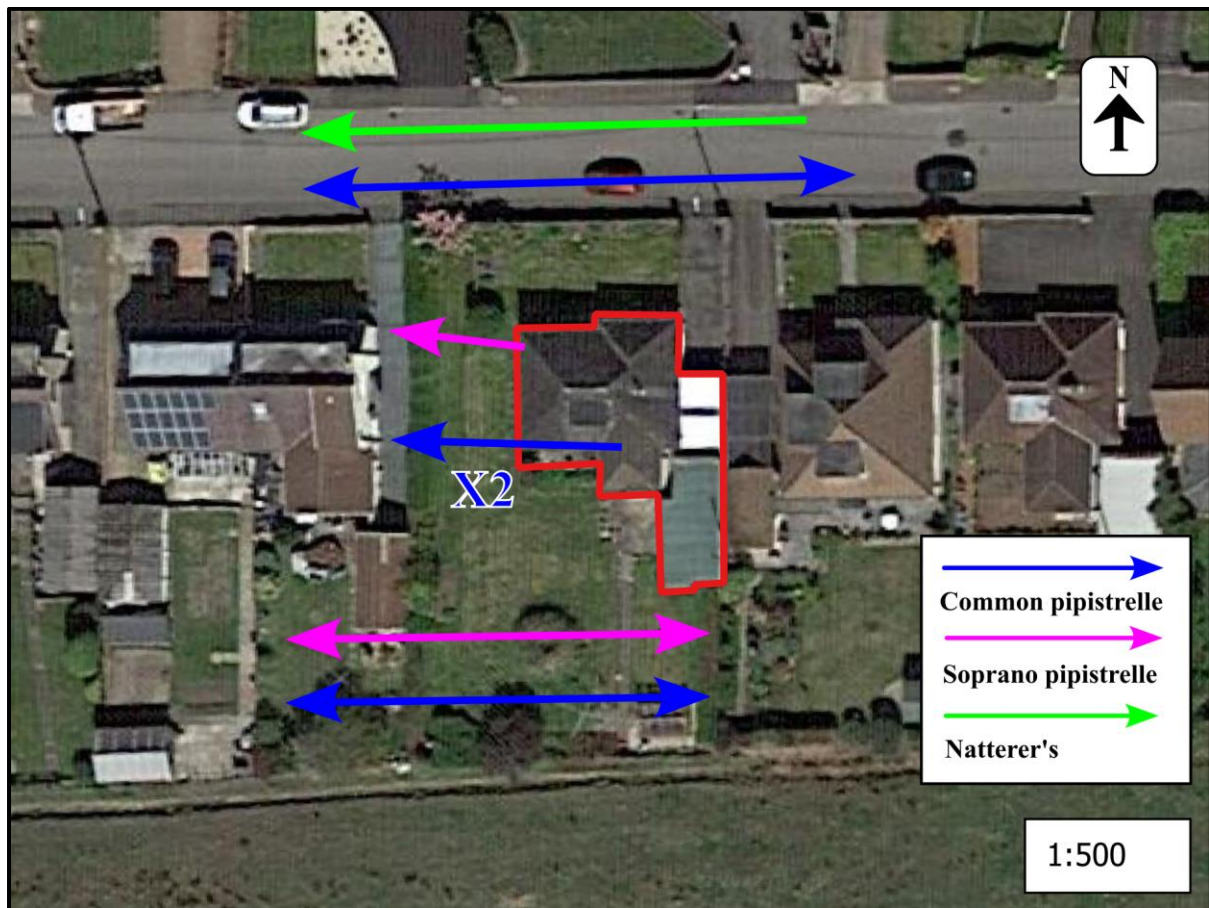
Existing Upper Floor Plan

Appendix 10A: Dusk 1 Emergence Survey Results 25 July 2022



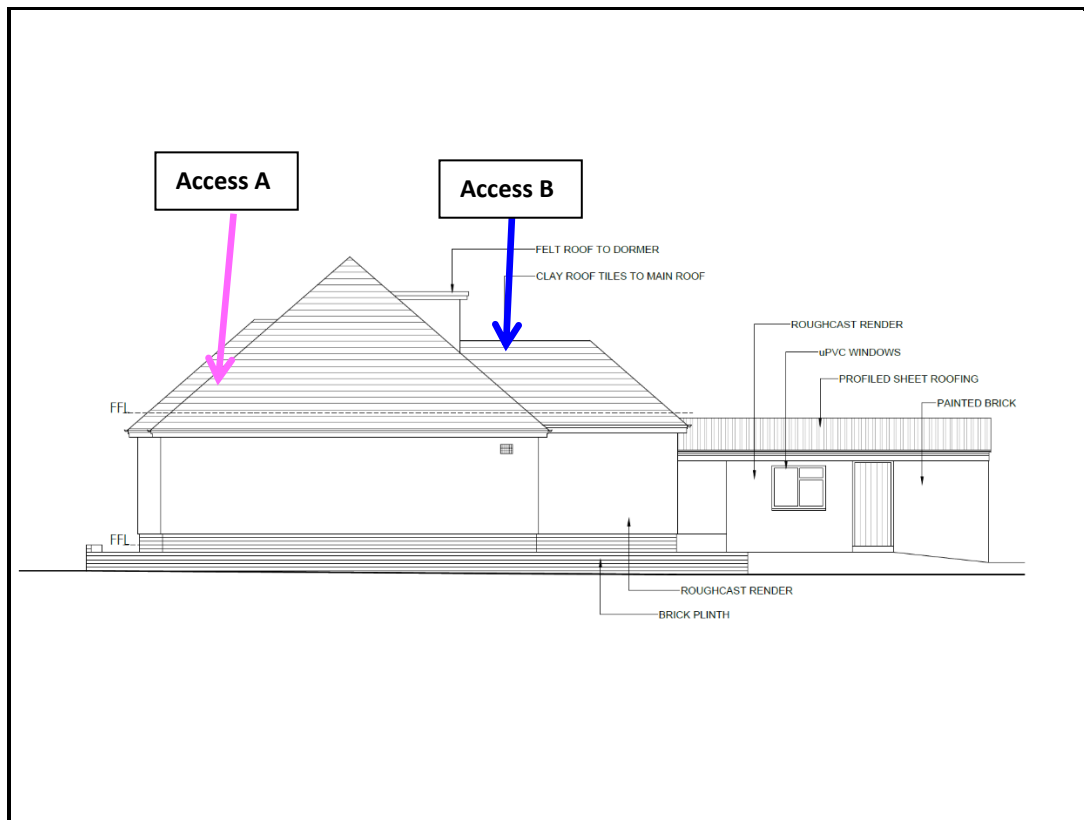
Satellite view of Glen View

Appendix 10B: Dusk 2 Survey Results 17 and 19 September 2022



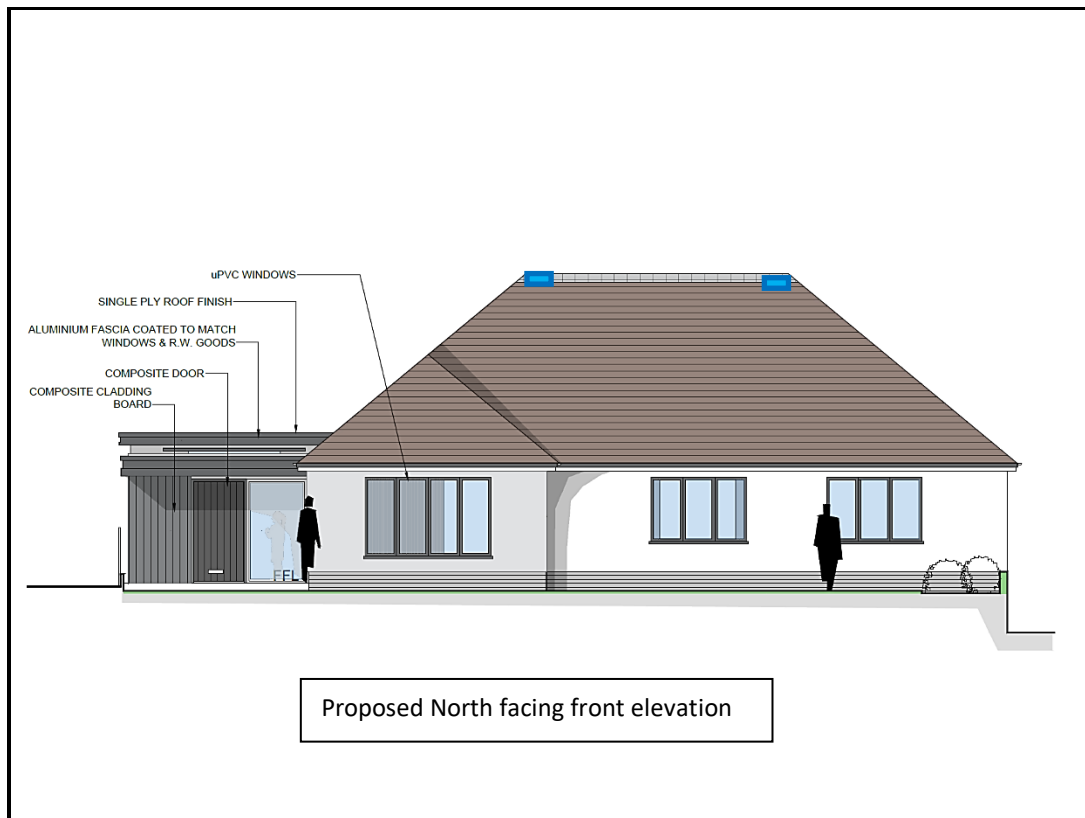
Satellite view of Glen View

Appendix 11: Position of Identified Bat Access Points

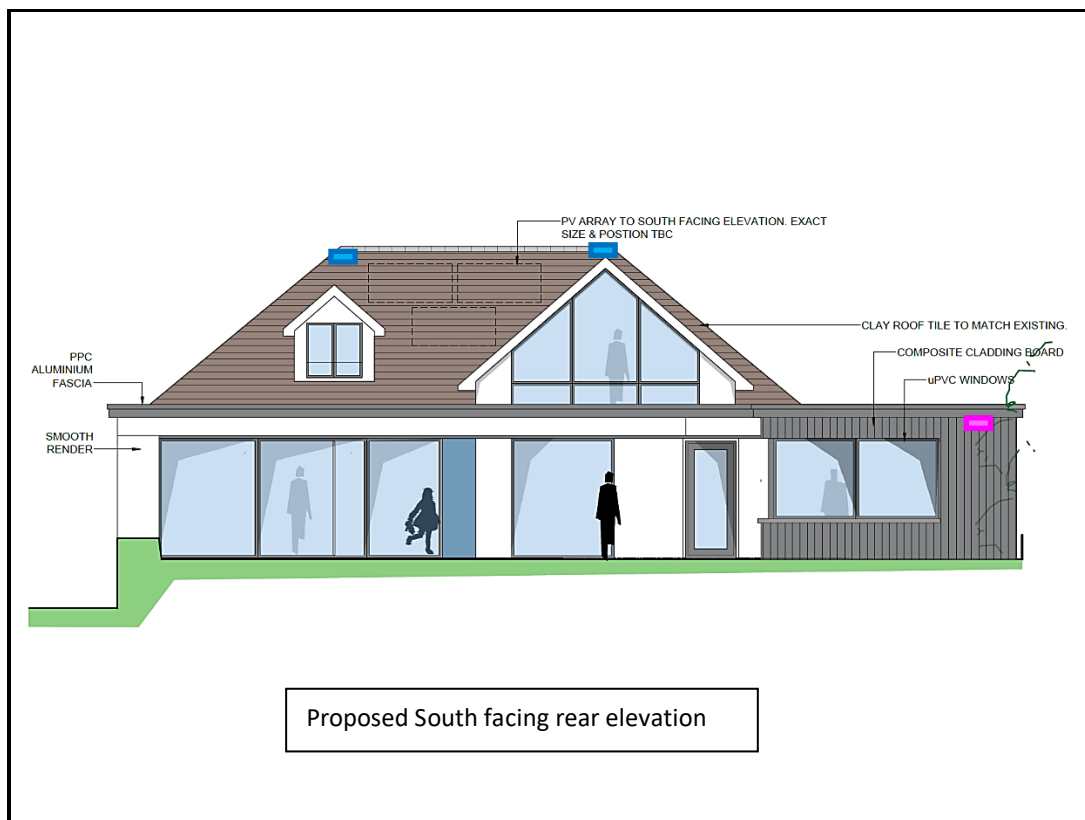


Existing West facing side elevation

Appendix 12: Position of New Bat Access Points and Bird Box

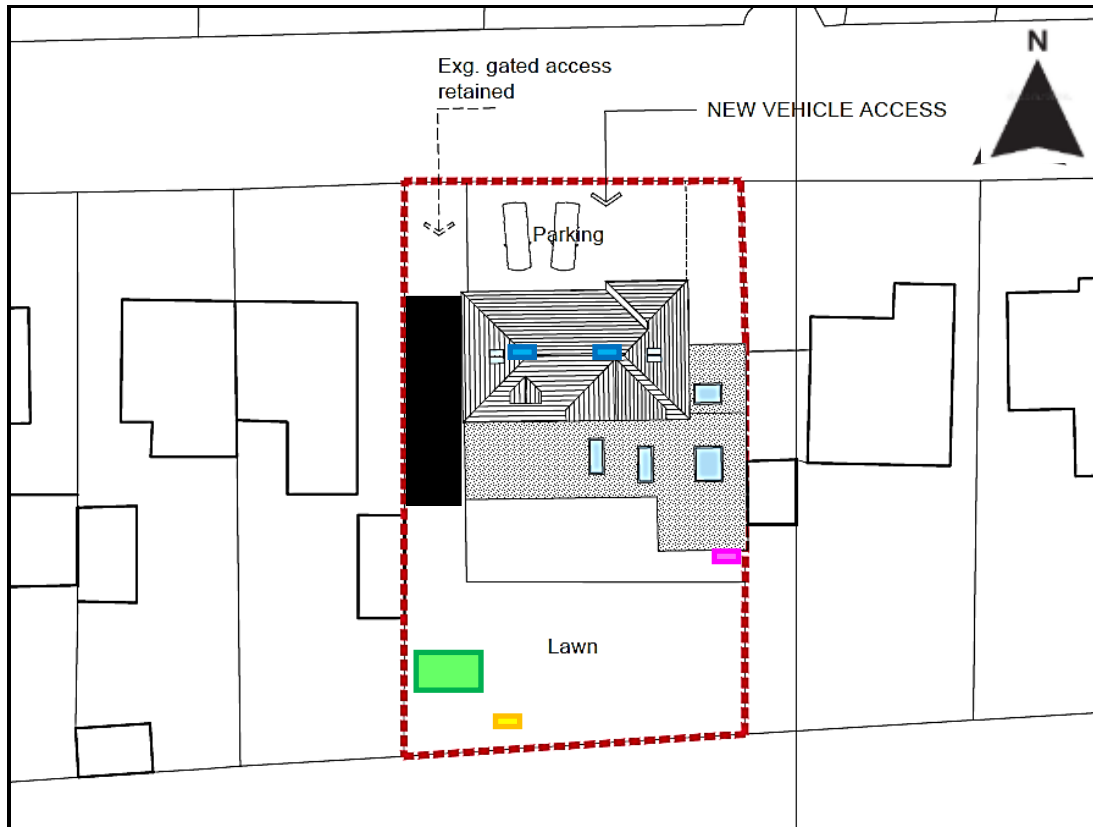


■ = Position of ridge tile gaps



■ = Position of ridge tile gaps ■ = Position of sparrow terrace nest box

Appendix 13: Location of Dark Zones and Night Scented Plants



Proposed site map of Glen View.

- = Location of night scented plants to encourage invertebrates (bat insect prey)
- = Location of dark zones with no additional external lighting that may illuminate bat access points or commuting and foraging areas
- = Position of sparrow terrace nest box
- = Position of ridge tile gaps
- = Location of bat box on small tree

Appendix 14: Specifications of Vivara Pro WoodStone Bat Box



The Vivara Pro WoodStone® Bat Box is an attractive, hardwearing bat box that will provide much needed summer roosting space for bats in both urban and rural areas. Due to changes in building construction and woodland management practices natural cavities for bat roosts are very rare, so providing a bat box can really help the bats in your area. This box is made from WoodStone®, a mixture of wood fibres from fully certified FSC wood sources and concrete, and it is designed to last for years. It is breathable so there will be no problems with condensation and WoodStone® maintains a consistent temperature inside, providing excellent insulation for roosting bats. WoodStone® also provides a rough surface which the bats can easily cling to and move around the box. The Vivara Pro WoodStone® Bat Box is black with a grey front panel.

Siting - The box can be attached to either a wall or a tree and should be sited at a height of at least 3 m from the ground. Bats prefer to change roosts to benefit from varying ambient temperatures, so bat boxes should ideally be clustered in small groups.

Dimensions - (H) 250 x (W) 190 x (D) 165 mm, weight: 4.5 kg

Bat Box Availability

The bat box is available from NHBS (www.nhbs.com) where it retails at approximately £19.99 including VAT

 = Location of bat box on small tree

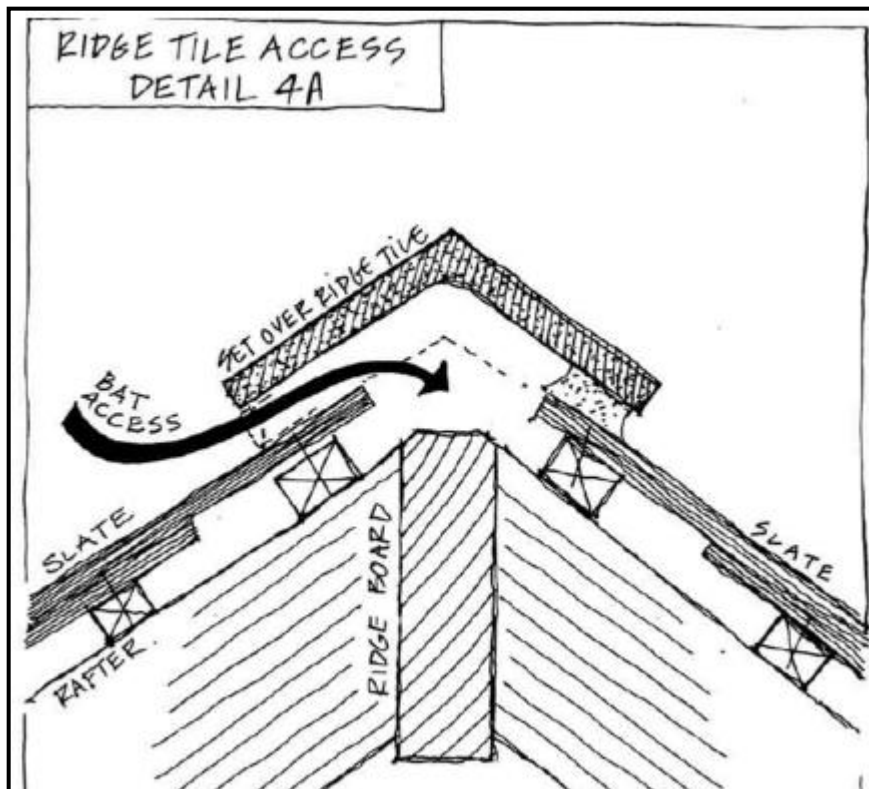
Appendix 15: Location of Bat Box on Small Tree



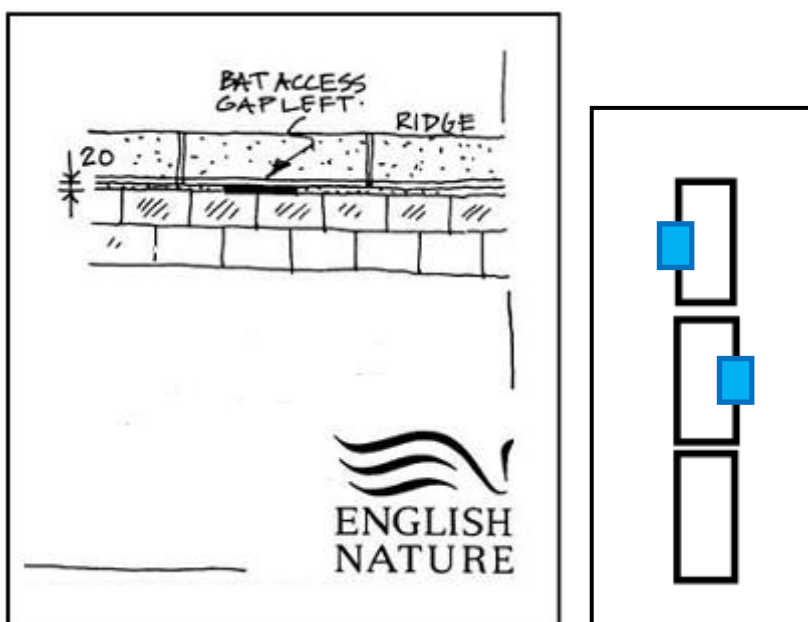
Garden view – rear garden

 = Location of bat box on small tree

Appendix 16: Design of Ridge Tile Gaps – Into Ridge



A gap of 20 x 100 millimetres will be left in the mortar to allow bats to roost inside the cavity under the ridge tiles.



■ = Position of ridge tile gaps

Appendix 17: Specifications of Sparrow Terrace 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 units 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

 = Position of sparrow nest terrace nest box

Appendix 18A: Timetable of Works

Start of works March 2023

Works to be carried out	Nov-Dec 2022	Dec 2022 - Jan 2023	Mar - Apr 2023	Mar - Sep 2023	Oct 2023
Application for planning permission with LPA					
EPS licence application with NRW					
Groundworks and building of foundations. - by builders					
Positioning of bat box on small tree - by licensed bat ecologist					
Toolbox talk to builders - by licensed bat ecologist					
Supervised soft stripping of concrete tile roof areas - by licensed bat ecologist					
Building of extensions and conversion of attic room - by builders					
Creation of four ridge tile gaps in new roof areas using clay tiles and 1F black bitumen roofing felt - by builders					
Bat mitigation check. Inspection of the new bat access gaps. - by licensed bat ecologist					

Appendix 18B: Timetable of Works

Start of works Oct 2023

Works to be carried out	Nov-Dec 2022	Dec 2022 - Jan 2023	Oct-Nov 2023	Dec 2023 –Apr 2024	May 2024
Application for planning permission with LPA					
EPS licence application with NRW					
Groundworks and building of foundations. - by builders					
Positioning of bat box on small tree - by licensed bat ecologist					
Toolbox talk to builders - by licensed bat ecologist					
Supervised soft stripping of concrete tile roof areas - by licensed bat ecologist					
Building of extensions and conversion of attic room - by builders					
Creation of four ridge tile gaps in new roof areas using clay tiles and 1F black bitumen roofing felt - by builders					
Bat mitigation check. Inspection of the new bat access gaps. - by licensed bat ecologist					