

**P J Ecological Solutions
6 Pen Y Graig, Denbigh, LL16 3YY
07545 681586
pjeecologicalsolutions@outlook.com**



Outbuilding at Plas Nantyr

Bat and Nesting Bird Assessment

**Plas Nantyr
Nantyr
Llangollen
Denbighshire
LL20 7DD**

Produced by P J Ecological Solutions

August 2023

Version 1

**Report by Matthew Whitehead
Reviewed by Paul Roberts**

Executive Summary

P J Ecological Solutions were commissioned by _____ to undertake a protected species survey of an outbuilding at Plas Nantyr, Llangollen, to ascertain whether the proposed works thereto have the potential to affect protected species, particularly bats and nesting birds, and to make recommendations as appropriate. The proposals are for the conversion of the disused outbuilding to an office space incorporating guest accommodation.

The survey results indicate that at least one brown long-eared bat and at least one lesser horseshoe bat are day roosting within the interior of the building. Additionally, at least two nests characteristic of swallow and two nest characteristics of wren were identified within the interior of the building. The proposed works will result in the loss of this roost and these nesting sites and, in the absence of mitigation, have the potential to disturb or cause harm to any bats or nesting birds present at the time.

To avoid disturbing or causing harm to roosting bats or nesting birds during the works, the works will be undertaken in accordance with the reasonable avoidance measures detailed in Section 6 of this report. In particular, the removal phase of the works will be undertaken outside of the summer roosting period/nesting bird period, to reduce the likelihood of bats or nesting birds being present at the time. ***A bat development licence from Natural Resources Wales will be required before site works can commence.***

Compensatory roosting provision for both species of bat will be incorporated into the proposals in the form of a bespoke 'bat loft', which will be created within a newly built standalone building. Compensatory nesting opportunities suitable for barn swallow will be provided in the form of four Vivara Pro WoodStone Swallow Bowls, which will also be installed within the ground level of the newly built standalone building. Compensatory nesting opportunities suitable for wren will be provided in the form of two Vivara Pro Alicante WoodStone Open Nest Boxes, which will be installed upon suitable trees within the applicant's landholding.

Subject to adherence to the reasonable avoidance measures detailed in Section 6 and subject to the delivery of the compensatory roosting and nesting provision detailed within the same, no long-term impact on the favourable conservation status of the species involved or continued ecological functionality of the site is anticipated.

To comply with Section 6 of the Environment (Wales) Act 2016, local planning authorities are required to look for biodiversity gain within the planning system. Accordingly, as biodiversity enhancement provisions, a Vivara Pro Beaumaris WoodStone Bat Box will be erected upon a south facing elevation of the newly built standalone building. A Vivara Pro Seville (32mm) WoodStone Nest Box will be erected upon the north elevation of the newly built standalone building. Additionally, a total of three native species fruiting trees –one crab apple, one wild pear and one wild plum – will be planted within the garden area of the proposed dwelling.

Contents

1	Introduction	1
2	Method	3
2.1	Desk Study	3
2.2	Preliminary Roost Assessment	3
2.1	Bat Activity Surveys	4
3	Results	6
3.1	Desk Study	6
3.2	Preliminary Roost Assessment	7
3.1	Bat Activity Surveys	16
4	Evaluation	18
5	Impact Assessment	19
5.1	Short-Term Impacts: Disturbance	19
5.2	Long-Term Impacts: Roost Modification/Roost Loss.....	19
5.3	Long-Term Impacts: Fragmentation and Isolation.....	19
5.4	Post-Development Interference Impacts	19
5.5	Predicted Scale of Impact	19
6	Required Actions	20
6.1	Further Surveys.....	20
6.2	Actions Requiring Licensing.....	20
6.3	Works to be Undertaken	20
6.4	Post-Development Site Safeguard	25
7	Biodiversity Enhancement Provisions	26

1 Introduction

P J Ecological Solutions were commissioned by _____ to undertake a protected species survey of an outbuilding at Plas Nantyr, Llangollen, Denbighshire, LL20 7DD (Grid Reference: SJ15453748; hereafter referred to as 'the site').

The survey was commissioned to ascertain whether the proposed works thereto have the potential to affect protected species, particularly bats and nesting birds, and to make recommendations as appropriate. The proposals are for the conversion of the disused outbuilding to an office space incorporating guest accommodation.

The site is set in a rural location within the Plas Nantyr estate, ~4.7km west of the village of Glyn Ceiriog and ~7.1km southwest of the town of Llangollen (see Figure 1.1). The site is situated within a parcel of managed parkland bounded by the Ochr-y-fron Wood, through which the Afon Teirw flows southeast <100m to the northeast. The surrounding area is characterised by further grazed pasture, small mixed woodlands and small waterways; the Ceiriog Forest lies ~800m to the north of the site and managed heather moorland lies ~700m to the south.

A detailed desk study of the surrounding area and a preliminary roost assessment and nesting bird assessment of the building has been undertaken, in addition to three bat activity (emergence) surveys. The aim of these efforts/this appraisal is to:

- Identify potential and actual habitat and species constraints pertinent to the development proposals.
- Detail further survey requirements and/or reasonable avoidance measures which should be adhered to during the proposed works, as appropriate.
- Identify opportunities for the proposed development to provide enhancements and add to the biodiversity resource within the site.



Figure 1.1: An aerial view of the site (in red) and the surrounding habitats.

2 Method

2.1 Desk Study

2.1.1 Statutory and Non-Statutory Designated Sites

A desk-based study was undertaken to identify nearby habitats of importance and features providing local habitat connectivity, and to identify the presence of statutory designations within the vicinity of the site. These include:

- ***International recognised statutory designations:*** Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar Sites.
- ***National recognised statutory designations:*** Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs)
- ***Local level statutory designations:*** Local Nature Reserves (LNRs)

The search (1km radius) was carried out using the Multi-Agency Geographic Information for the Countryside (MAGIC) website's interactive mapping application, and the Natural Resources Wales (NRW) website's Designated Site Search function.

2.1.2 Species Records Pertinent to the Assessment

At this stage of the project, due to the scale of the proposed development, it is considered that a full records search from COFNOD is not required, however a records search (1km radius) was undertaken using the interactive mapping applications available on the MAGIC and National Biodiversity Network (NBN) websites. This approach is consistent with the Guidelines for Accessing and Using Biodiversity Data in the UK (CIEEM, 2020).

2.2 Preliminary Roost Assessment

A preliminary roost assessment of the building was undertaken on the 10th of July 2023 by Matthew Whitehead BSc (Hons) AMRSB, an experienced bat surveyor and accredited agent upon the license of Paul Roberts UCert (license number: S088763/1). Potential roosting features were accessed using a suitably tall ladder and inspected using a Clulite CB2-L2 high-powered torch and a Eazyview Tradesman fiberscope. A detailed inspection of the building's exterior and interior was carried out in accordance with the methodology prescribed within the Bat Conservation Trust's (BCT) Good Practice Guidelines (2016). The building was then categorised in accordance with Table 4.1 of that document.

During the inspection, note was made of the number and nature of any potential roosting features, and/or of any points of entry/exit, such as:

- Cracks or crevices within walls; lifted paintwork, render, plaster, felt, or lead flashing; loose or lifted roof tiles or ridge tiles; loose windowsills and window frames, gaps behind fascias, soffits, bargeboards, weatherboard or hanging tiles; exposed eaves or wall plates; aged or badly fitted wooden roof supports; or thick vegetation cover.
- Holes within the walls or roof; broken/missing doors or windows; gaps between the walls and fascias, soffits or bargeboards; exposed eaves or wall plates; basement grills; broken ventilation outlets; or points of vegetation penetration.

A search for bats or evidence thereof (such as droppings, claw marks, or oil or urine staining) was undertaken, paying especial attention to:

- Gaps behind furnishings, such as curtains, pictures, and posters; accessible cupboards; peeling paintwork; chimneys accessible from fireplaces; loose wooden panelling; lintels above doors; roof timbers and beams (especially within mortise and tenon joints and where ridge and hip beams meet); at the top of gable end walls, connecting walls, and chimney breasts; and behind roofing felt.

During the inspection of the building, notes were made of any evidence of current or historic use by nesting birds.

The inspection was undertaken in accordance with the advice provided in the document *Guidance on Ecological Survey and Assessment in the UK During the COVID-19 Outbreak (Version 4)*, produced by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2021).

2.1 Bat Activity Surveys

Three bat activity (emergence) surveys were carried out in accordance with the methodology prescribed within *Bat Surveys for Professional Ecologists* (Bat Conservation Trust, 2016) and *Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys* (Bat Conservation Trust, 2022). The surveys were undertaken by Matthew Whitehead BSc (Hons) AMRSB, an accredited agent upon the license of Paul Roberts UCert (license number: S091932/1), using a Pettersson M500-384 bat detector as well as Canon XA50 and Panasonic HC-VX980EB-K infrared cameras, each of which was connected to a PeerSonic RPA3 bat detector (see Figures 2.1 and 2.2). The surveys were undertaken on the dates and under the conditions detailed in Table 2.1.

Table 2.1: The details of the activity surveys undertaken.

Type of Survey	Date and Time	Weather Conditions at Sunset/Sunrise
Emergence Survey	10 th July 2023 21.06 – 23.06	Sunset Time: 21.36; 15°C, Dry, 16kph (E) Wind, 100% Cloud Cover
Emergence Survey	28 th July 2023 20.40 – 22.45	Sunset Time: 21.13; 15°C, Dry, 8kph (SW) Wind, 100% Cloud Cover
Emergence Survey	19 th August 2023 20.00 – 22.02	Sunset Time: 20.32; 17°C, Dry, 12kph (SW) Wind, 100% Cloud Cover

The emergence surveys were undertaken in July and August, in dry and calm conditions, when the temperature at sunset was above 10°C, all of which is in accordance with the good practice guidelines provided in Tables 7.1 and 7.3 of the BCT's *Bat Surveys for Professional Ecologists* (2016). The surveys commenced at least 30 minutes before sunset and continued until at least 90 minutes after sunset. As such there are no limitations associated with the timing and weather conditions of the surveys.

N.B: Any bat emergence/re-entry surveys can only give a snapshot of bat behaviour at the time of the survey. As the potential of the site for roosting bats may change over time, it is recommended that bat surveys are updated after two years if development has not yet commenced.



Figure 2.1: The positions of the surveyors/equipment during the activity survey. The building to be converted is shown in red.



Figure 2.2: The field of view of each of the cameras used at the darkest part of the survey (Left: Camera 1 – the Canon XA50; Right: Camera 2 – the Panasonic HC-VX980EB-K. All footage was reviewed in real-time using the open-source PotPlayer software. All sonograms were manually reviewed using the SonoBat 30 UK bat call analysis software.

3 Results

3.1 Desk Study

3.1.1 Statutory and Non-Statutory Designated Sites

A review of the information retrieved during the desk study identified no statutory or non-statutory designated sites within or immediate to the site area. The Berwyn SSSI/Berwyn SPA/Berwyn a Mynyddoedd De Clwyd SAC, an area of national and international importance for its moorland breeding birds and vegetation, particularly *Calluna* dominated heath and blanket mire, which is also notified to conserve a colony of the rare Welsh clearwing moth (*Synanthedon scoliaeformis*), is situated ~650m south of the site (see figure 3.1); however, due to the nature of the proposals and the size of the project, no adverse impacts on these sites are anticipated because of the proposed development.

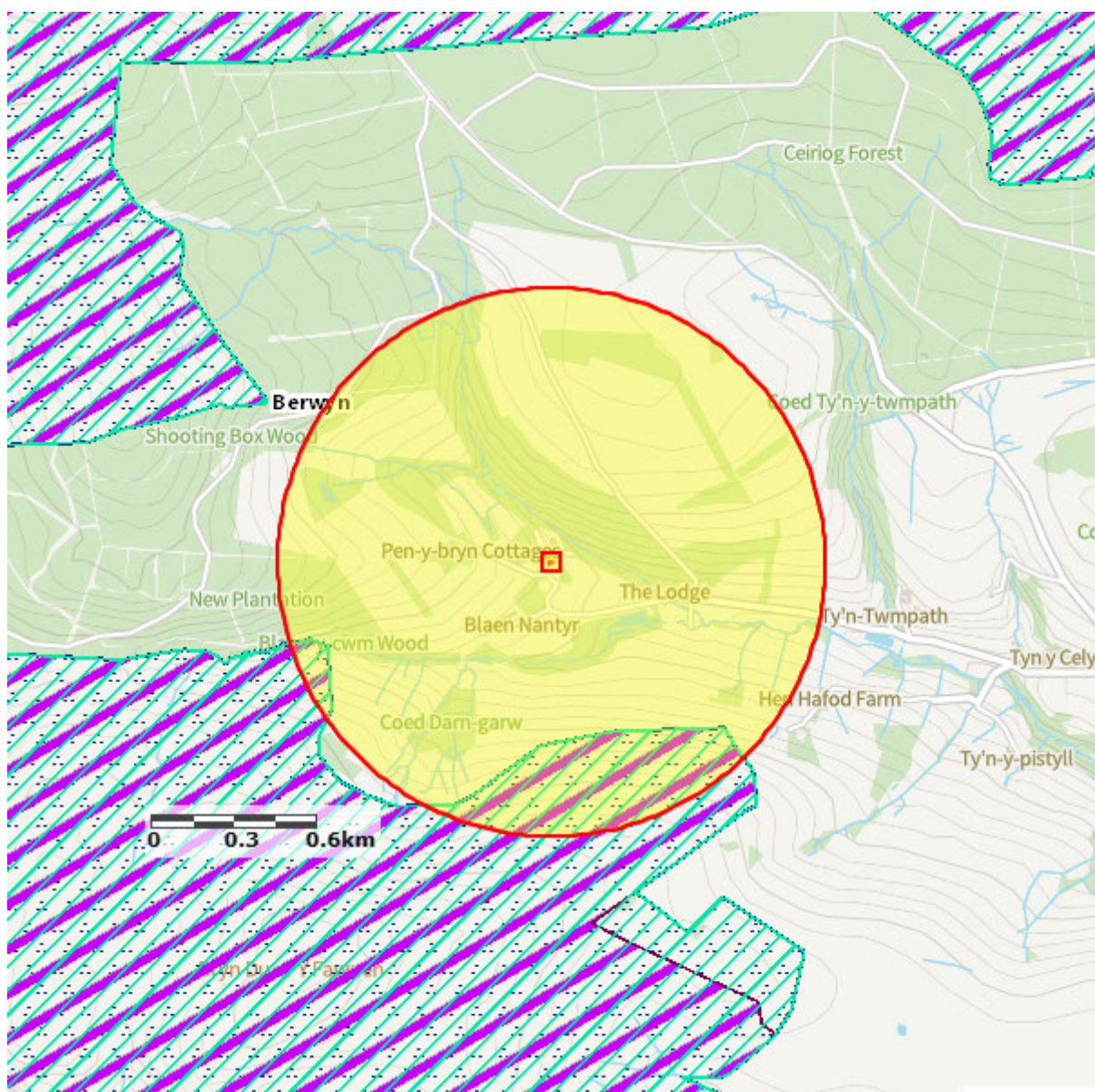


Figure 3.1: A 1:25,000 map view of the site relative to local designated sites.

3.1.2 Species Records Pertinent to the Assessment

A review of the information retrieved during the desk study identified no records of any bat species within the search area. However, common pipistrelle bats (*Pipistrellus pipistrellus*), soprano pipistrelle bats (*Pipistrellus pygmaeus*), common noctule bats (*Nyctalus noctula*), brown long-eared bats (*Plecotus auritus*), lesser horseshoe bats (*Rhinolophus hipposideros*), whiskered/Brandt's bats (*Myotis mystacinus/brandtii*), Daubenton's bats (*Myotis daubentonii*) and Natterer's bats (*Myotis nattereri*) were all recorded during previous bat activity surveys undertaken within 2023, ~120m south of the site.

In addition, 1 record of polecat (*Mustela putorius*) was retrieved ~950m west of the site; 1 record of cuckoo (*Cuculus canorus*) was retrieved ~650m southwest of the site; 2 records of curlew (*Numenius arquata*) were retrieved ~650m southwest of the site; 1 record of kestrel (*Falco tinnunculus*) was retrieved ~650m southwest of the site; 1 record of lesser redpoll (*Acanthis cabaret*) was retrieved ~650m southwest of the site; 7 records of skylark (*Alauda arvensis*) were retrieved ~650m southwest of the site; and 1 record of song thrush (*Turdus philomelos*) was retrieved ~650m southwest of the site.

Given the ecology of the above listed species and the position of the site, and given the nature of the proposals and the modest size of the project, no adverse impacts are anticipated upon the favourable local status any of the above species, or upon any other protected or priority species because of the proposed development, so long as all bat roosts and bird nests present upon or within the building to be affected have been identified, and appropriate mitigation/compensatory roosting/nesting opportunities have been provided as necessary.

No other protected or priority mammal or bird species records were retrieved. No protected or priority reptile, amphibian, invertebrate or plant species were retrieved. No records were retrieved for any species listed upon Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended).

3.2 Preliminary Roost Assessment

A description of the outbuilding to be converted is provided in Table 3.1, below.

N.B: Due to the poor condition of the floorboards, no attempt was made to explore the first-floor area of the building during the initial inspection.

Table 3.1: The building to be converted.

Exterior Fabric and Features	
Structure	The building is a detached two-storey rectangular structure featuring a symmetrically pitched gabled roof, the apex of which runs from east to west.
Walls	The walls of the building are constructed of random stone and are in a poor state of repair. The north and east-facing elevations are faced with a coat of render, whilst the south and west-facing elevations have been left exposed. Gaps and crevices are present within the stonework throughout the exposed elevations and there are numerous cracks within the render and areas of lifted render.
Roof	The roof of the building is constructed of corrugated cement-bonded asbestos sheeting and features angled ridge tiles and is in a poor state of repair. There is a small dormer-style window in the front (north-facing) elevation and a small cross-gabled roof protruding from the west-end of the rear (south-facing) elevation.

Soffits, fascias and bargeboards	Any fascia boards which may once have run along the front or rear elevations of the building have since fallen away. Wooden bargeboards are still present upon each of the gables and around the dormer window; however, these are in a poor state of repair.
Windows, doors, and other points of access	Most of the doors and windows are intact and tightly fitted. However, the first-floor window of the east-facing gable is missing several panes of glass and there are gaps around the other (boarded) windows which have become damaged. There is also a hole in the rear (south-facing) roof of the building.
External lighting	There is no artificial light spill onto any section of the building or its immediate surrounds.
Vegetation upon or immediate to the building	There is no vegetation growth upon or immediate to any section of the building.
Interior Fabric and Features	
Structure	The interior of the building comprises two ground-floor rooms and two first-floor rooms, one of which is significantly larger than the other. The interior doors are all missing or fixed ajar, so there is free access between each room and between floors.
Walls and Furnishings	The interior faces of the external walls are exposed or a faced in a coat of plaster and are in a poor state of repair. Gaps and crevices are present within the stonework throughout the exposed walls and there are numerous cracks within the plaster and areas of lifted plaster. The partition walls are constructed from wooden panelling.
Roof Structure, Roof Lining and Roof Void	The first floor of the building is open to the rafters, with no separated roof void present. The roof is supported by a cut timber frame and features several aged wooden A-frames. The roof of the smaller first floor room is wood panel lined, whereas the roof of the larger first floor room is unlined.
Light Penetration and Weather proofing	There is significant natural light penetration into the first floor of the building via the intact and broken windows and via the hole in the roof. However, there are also several very dark areas within the larger room, which is also largely sheltered from prevailing wind and rain.
Evidence of Roosting Bats or Nesting Birds	
Evidence of bats or bat roosts	Scattered droppings, characteristic of those of <i>Plecotus</i> bats, were found within the ground-floor interior of the building (no exploration of the first-floor rooms was possible).
Evidence of nesting birds	Four nests characteristic of barn swallow (<i>Hirundo rustica</i>) and two further nests characteristic of wren (<i>Troglodytes troglodytes</i>) were found within the interior of the building.

Summary: Due to the abundant potential roosting features within the building's interior and exterior wall faces and within the building's roofline; and due to the numerous points of 'fly-through' access into the building's interior, which is considered well suited to the needs of roosting bats and within which several droppings characteristic of *Plecotus* bats were found, the building was categorised as having high potential to support roosting bats.

Four nests characteristic of barn swallow and two further nests characteristic of wren were found within the interior of the building.

Photographs showing the above features and findings are included below (see Figures 3.2 to 3.15).



Figure 3.2: The north-facing (front) elevation and east-facing gable of the building.



Figure 3.3: The south-facing (rear) elevation and west-facing gable of the building.



Figure 3.4: The condition of the rear walls.



Figure 3.5: The condition of the front roof and roofline.



Figure 3.6: The condition of the rear roof and roofline.



Figure 3.7: The broken first floor window and roofline of the east-facing gable.



Figure 3.8: The west-facing gable and cross gable.



Figure 3.9: The larger of the two ground floor rooms, within the far wall of which one of the wren nests was found.



Figure 3.10: The wren nest found in the above room.



Figure 11: The smaller of the two ground floor rooms, showing two of the barn swallow nests found (in red).



Figure 3.12: The smaller of the two first floor rooms, showing one of the barn swallow nests found therein (in red). The other such nest was found at the apex of the opposite gable.



Figure 3.13: The broken window to the above room (within the east-facing gable).



Figure 3.14: The larger of the two first floor rooms, within which the other wren nest was found.



Figure 3.15: One of the bat droppings found.

3.1 Bat Activity Surveys

10th of July 2023: During the first emergence survey, a single brown long-eared bat was recorded and observed emerging from the first-floor window of the building's east-facing window (see Figure 3.7 and 3.16), at 22.29, having been observed flying within the first-floor area of the building from 22.09 onwards. In addition, soprano pipistrelle bats were recorded foraging in the vicinity of the site from 21.33 onwards; common pipistrelle bats were recorded foraging in the vicinity of the site from 21.38 until 21.42 and from 22.26 until 22.45; a common noctule bat was recorded in the vicinity of the site from 22.29 until 22.32; a Daubenton's bat was recorded in the vicinity at 22.35, and a further brown long-eared bat was recorded in the vicinity of the site at 22.50. No other bats were recorded or observed during the survey.

28th of July 2023: During the second emergence survey, no bats were recorded or observed emerging from any part of the building. Soprano pipistrelle bats were recorded foraging in the vicinity of the site from 21.19 onwards; common pipistrelle bats were recorded foraging in the vicinity of the site from 21.23 onwards; Daubenton's bats were recorded in the vicinity of the site at 21.33 and at 21.36; a common noctule bat was recorded in the vicinity of the site at 21.41; and a brown long-eared bat was recorded in the vicinity of the site at 22.51. No other bats were recorded or observed during the survey.

19th of August 2023: During the final emergence survey, a single brown long-eared bat was recorded and observed emerging from the first-floor window of the building's east-facing window (see Figure 3.7 and 3.16), at 20.55, and a single lesser horseshoe bat was recorded and observed emerging from the same place at 20.60. In addition, common pipistrelle bats were recorded foraging in the vicinity of the site from 20.54 onwards; a Daubenton's bat was recorded in the vicinity of the site at 20.54; soprano pipistrelle bats were recorded foraging in the vicinity of the site from 21.03 onwards; and a common noctule bat was recorded in the vicinity of the site at 21.28 and at 21.35. No other bats were recorded or observed during the survey.



Figure 3.16: A plan of the site showing the points from which the brown long-eared bats and lesser horseshoe bats were observed emerging from the building (in white). Notable dispersal routes and commuting routes identified are shown in yellow. Very little bat activity was observed in the direction of Plas Nantyr itself.

4 Evaluation

The survey results indicate that the building to be converted is being used as a current day roost by at least one brown long-eared bat and at least one lesser horseshoe bat, and as a nesting site by both barn swallow and wren. The surveys were not affected by any material limitations.

All species of British bat are afforded full protection under Schedule 5, Section 9 of the Wildlife and Countryside Act 1981 (as amended), and under Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended). Under these acts, it is an offence to deliberately or recklessly disturb, capture, injure or kill bats; impair their ability to survive, breed, reproduce, hibernate or migrate; affect significantly the local distribution or abundance of the species to which they belong; or damage or destroy a breeding site or resting place of that species.

All wild birds, their nests and eggs are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended), this makes it an offence to intentionally kill, injure or take any wild bird; take, damage or destroy the nest of any wild bird while it is in use or being built; take, damage or destroy the egg of any wild bird; or to have in one's possession, or control, any wild bird (dead or alive) or egg or any part of a wild bird or egg.

The proposed conversion works will result in the destruction of the identified roosts and nesting sites and, in the absence of mitigation, have the potential to disturb or cause harm to any bats or nesting birds present at the time. Suitable compensatory roosting and nesting opportunities will therefore need to be provided and the works will need to be undertaken in accordance with suitable reasonable avoidance measures.

A bat development licence from Natural Resources Wales will be required before site works can commence.

5 Impact Assessment

5.1 Short-Term Impacts: Disturbance

In the absence of mitigation (i.e., in the absence of timing restraints and if undertaken in a reckless manner), the proposed works have the potential to disturb or cause harm to any bats or nesting birds which are present at the time.

5.2 Long-Term Impacts: Roost Modification/Roost Loss

The proposed works will result in the complete destruction of the identified roosts/nests and roosting/nesting potential.

5.3 Long-Term Impacts: Fragmentation and Isolation

No linear features (hedgerows, treelines, etc.) will be affected by the works, so no fragmentation or isolation is anticipated. However, if additional artificial lighting is allowed to spill onto the compensatory roosting provision, other nearby roosts, or flightlines thereto/therefrom, the utility of the site and/or its surrounds for roosting, foraging and/or commuting bats could be adversely impacted.

5.4 Post-Development Interference Impacts

The site is set away from any busy areas and the compensatory roosting/nesting provision will be isolated from any habitable areas. As such, no disturbance issues are expected.

5.5 Predicted Scale of Impact

Across Wales, lesser horseshoe bat populations are believed to be increasing, whereas brown long-eared bat populations are believed to be stable (NBMP, 2022). Further, while lesser horseshoe bats are considered a rarer species nationally, and are listed within Annex II of the *Habitats Directive*, the region within which the site is located is considered part of the 'Northern European stronghold' for this species (ibid). As such, and due to the low numbers of bats involved, the loss of the identified roosts would have only low local significance (see Bat Mitigation Guidelines, Table 6.1; English Nature, 2004).

Barn swallow populations have experienced significant decline on a national level since 1970, although there is some evidence that they have been more stable on a local/regional level in recent years (BTO, 2021). However, even in the absence of mitigation, due to the local abundance of the species and the low numbers of birds concerned, the loss of the identified nests/nesting sites would have only low local significance. Wren populations are known to be stable on a national and increasing on a regional level (BTO, 2020).

6 Required Actions

6.1 Further Surveys

As the potential of the site for roosting bats/nesting birds may change over time, it is recommended that these surveys are updated after two years if development has not yet commenced. Should the proposals change significantly or change to affect areas outside those surveyed, further advice should be sought from a licensed ecologist.

6.2 Actions Requiring Licensing

The survey results indicate that the outbuilding to be converted is being used as a current day roost by at least one brown long-eared bat and at least one lesser horseshoe bat.

The proposed conversion works will result in the loss of the existing roosting space and of the access thereto.

Further, in the unlikely situation that bats are present at the time of the works, they are likely to be disturbed thereby and may need to be captured by hand and relocated to a place of safety.

A European Protected Species Mitigation License (EPSML) from Natural Resources Wales will therefore be required before site works can commence.

As a requirement of the license, a suitably qualified ecologist must be appointed by the licensee as the licensed site ecologist for the duration of the project.

6.3 Works to be Undertaken

6.3.1 Capture and Exclusion

Provisions for Bats Displaced During the Works: Prior to the commencement of works, a Vivara Pro Chillon WoodStone Bat Box will be erected upon a suitable tree on-site (as directed by the licensed ecologist), to provide interim roosting opportunities/a place of safety during the works. The bat box will be retained on site post-completion of works, in-perpetuity.

Timing of Works: The removal of the roof and the soft strip of the building, as well as all repointing works, will be undertaken during favourable weather conditions and outside of the bat summer roosting period (that is, during the months of October – April), when bats are less likely to be present. To avoid encountering torpid bats in roof structures, the removal phase of such works will be undertaken during periods when temperatures have not dropped below 8°C over four consecutive days and nights.

If possible, the above works will be scheduled prior to the commencement of the peak nesting period for wild birds (March to August, inclusive), when nesting birds are less likely to be present. If this is not possible, a nesting bird check will be undertaken by a suitably qualified ecologist immediately prior to the commencement of those works.

Site Induction and Toolbox Talk: The licensed ecologist or their accredited agent (hereafter referred to as 'the ecologist') will provide a 'toolbox talk' to all contractors involved with works which could affect bats, prior to the commencement of those works. All site workers will be

briefed on the legal status of bats, the likely places to find them, the working practices required to minimise and avoid disturbing or causing harm to bats (e.g., the procedure required for removing roofing material, etc.) and the action to be taken if bats are encountered during the works. All site workers will be made aware that in the event of any bats being found or suspected when the ecologist is not on site, all works must cease in the affected area until appropriate expert advice has been sought from the ecologist or NRW. A copy of the NRW licence and the Bat Licence Method Statement will remain available on site at all times and a summary sheet of guidance will be given to the builders and contractors working on the site.

Supervision of Works/Soft Strip: It will be necessary for the ecologist to be in attendance during the removal phase of all works to the roof, roof structure and roofline features. Prior to the commencement of these works, the underside of each feature to be removed will be inspected by the ecologist using a high-powered torch and endoscope, to determine whether any bats are present, as far as is possible.

Roofing material and associated timbers will be lifted off vertically, rather than rolled, and checked on its underside to ensure that no bats are clinging thereto prior to discarding/storing it. This will minimise the chance of any bats present being killed/injured. This work will be undertaken using hand tools only, (i.e., picks, crowbars, slate rippers, bow saws etc.).

During the repointing works, any cracks or crevices that have potential to be used by bats will be inspected by the ecologist to ensure they are not in use. Cavities will then be carefully prised open with a crowbar prior to being filled.

After the above works/each stage thereof has been completed, the building will be left for 24 hours (to allow any bats present the opportunity to move off on their own accord), after which the remainder of those works can be completed.

The ecologist 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.

Bat Exclusion: If, during the pre-commencement inspection, any cavities are encountered within which the absence of bats cannot be confidently determined, these will be fitted with one-way exclusion devices, so that bats can only exit and not re-enter the cavities. The excluder will remain in place over seven consecutive days and nights during which temperatures have not dropped below 8°C, and then will be checked again immediately prior to being prised open and subsequently demolished/filled. The exclusion devices will be fitted between October and April, when there will be no heavily pregnant females or dependent young present. The excluder will comprise either a plastic pipe with a 26mm bore, facing slightly downwards (to avoid water ingress), projecting at least 100mm from the wall, or a close-fitting Perspex sheet or a collapsible tube or bag fitted over the potential roost site. Cavities which, during the pre-commencement inspection, bats can confidently be determined to be absent from, will be filled in at that time to prevent bats from entering at a later date during the works.

If Bats are Encountered: If bats are encountered during supervised works, works will stop to allow them to move of their own accord. As it is not permissible to handle lesser horseshoe bats, if a lesser horseshoe bat is found during any of the pre-commencement checks, or at any other time during the works, and fails to move away, the works will be delayed until it has done so. If any other species of bat fails to move away, the ecologist will capture it with thin-gloved hands or a hand net and place it in a draw string cloth bag. Removed bats will then be transferred into one of the pre-installed WoodStone bat box on site (see above). 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.

If a bat is discovered at other, unsupervised times when the ecologist is not present, work will cease immediately and the bat(s) will be covered by the last object removed (so long as there is no risk of crushing), and the ecologist will be consulted for advice and attendance at site. Associated and nearby coverings will also be replaced if the bat(s) is/are not completely or only just covered. Bat(s) which have not moved of their own accord by the arrival of the ecologist will be rescued by the ecologist using the method described above. If a grounded bat is found, it will be covered by a cardboard box until the ecologist arrives. Any injured bats found will be immediately taken into care. If it is not possible to contact the ecologist, the Natural Resources Wales Species Protection Officer must be contacted immediately, and their advice sought. Builders, contractors, and other unlicensed personnel are explicitly forbidden to handle bats.

If Nesting Birds are Encountered: If any active nests are found during the pre-commencement check, or at any other time during the works, all works within 5m of the identified nest (or which might otherwise cause disturbance of harm to its occupants) will be discontinued and a suitable no-works zone will be established around the nest until it has been established that all the chicks have fledged. The delay caused by such an occurrence may require an amendment to the license, as the timing of works may be affected.

6.3.2 Bat Roosts and Habitat

6.3.2.1 In-Situ Retention of Roost(s)

There will be no in-situ retention of roosts.

6.3.2.2 Modification of Existing Roost(s)

There will be no in-situ retention of roosts.

6.3.2.3 New Roost Creation

Compensatory roosting provision for both species of bat will be incorporated into the proposals in the form of a bespoke 'bat loft', in the form of a bespoke 'bat loft', which will be created within a newly built standalone building. Compensatory nesting opportunities suitable for barn swallow will be provided in the form of four Vivara Pro WoodStone Swallow Bowls, which will also be installed within the ground level of the newly built standalone building. The bat loft will internally measure at least 5m in length at least 4m in width (at floor level), and at least 2.0m in drop (from the ridge to the floor).

To ensure that there is suitable flying room within the loft, the loft will feature a cut roof (i.e., will not feature trusses), the purlins and rafters of which will be left exposed and will be rough-sawn, to provide additional perching opportunities. The roof of the loft will be lined with 1F bituminous felt and the floor of the loft will be constructed of double-panelled timber.

Interior crevice-roosting opportunities will be provided within the loft via the incorporation of a double-ridge board design (an additional timber will be fitted each side of the ridge board, extending 150mm below the lower edge of the ridge board, creating a central crevice space) and by the erection of a Vivara Pro Beaumaris WoodStone Bat Box (Midi) upon the interior face of the gable wall, ~2m from the floor of the loft.

Bat access to the interior of the loft will be provided by a 300mm (width) x 200mm (height) 'letterbox-style' opening within the gable wall, positioned ~1m from the floor of the loft. A wooden panel baffle will be fitted at a ~45° angle across the internal face of this access point, to reduce light and wind penetration.

Human access into the loft will be provided in the form of a simple trapdoor-style hatch within the floor of the loft. This will be kept locked and unused except by suitably licensed ecologists engaged in monitoring the loft. The loft will not be used for any purpose other than as a bat roost.

6.3.2.4 Maintenance of and/or Modification of New and Existing Habitat

The hedgerows and trees which border and surround the site will be left in-situ and unmodified.

To avoid any post-development impacts upon the bats utilising the site and/or its surrounds for roosting, foraging and/or commuting purposes, a suitably qualified ecologist will be instructed to develop a sensitive lighting scheme bespoke to the project, which will adhere to the guidance set out in *Guidance Note 08/18 Bats and artificial lighting in the UK* (Bat conservation Trust & The Institute for Lighting Professionals, 2018). The scheme will be submitted to the local planning authority for approval and the development will proceed in strict accordance the approved scheme.

If excessive horizontal light spill is observed during the post-license monitoring work, or if bats fail to use the compensation roosts being provided, remedial work will be undertaken as appropriate, which may involve modifications to the lighting installed. Front and side hoods/shields or cowls may be installed to further prevent upwards and horizontal light spill or additional timing constraints may be implemented.

6.3.3 Bird Nests and Habitat

Compensatory nesting opportunities suitable for barn swallow will be provided in the form of four Vivara Pro WoodStone Swallow Bowls, which will also be installed within the ground level of the newly built standalone building. They will be installed together, directly beneath the ceiling of the structure (allowing for a gap of $\geq 40\text{mm}$ between the ceiling and nest edge).

Compensatory nesting opportunities suitable for wren will be provided in the form of four Vivara Pro Alicante WoodStone Open Nest Boxes, which will be installed upon suitable trees within the applicant's landholding. They will be installed in north-facing positions, between 1.5 and 3m from the ground, where they can benefit from some vegetation cover.

6.3.4 Mechanisms for Ensuring Delivery of Mitigation and Compensation Measures

Delivery will be implemented by the owners of the site through a Natural Resources Wales European Protected Species licence, which will be issued conditional to the recommendations outlined in this report. To fulfil their reporting obligations under the Habitat Directive, the licensee will provide a report, no more than four weeks after the licence expires, detailing findings of any bats encountered during the works, together with the measures taken and outcomes in terms of recovery of and maintenance of the population.

Compliance monitoring will be undertaken by the ecologist as part of their responsibilities to the licensee. The ecologist will be responsible for (i) defining appropriate key performance indicators that will inform an inspection, (ii) defining what evidence will be required to inform inspections, (iii) determining the minimum number of assessment visits required to demonstrate compliance, and (iv) progressing required remedial or contingency actions identified during audit back to the developer and NRW. It will be the licensee's responsibility to ensure that suitable access to the site and suitable funds are made available for this work.

6.3.5 Mitigation Contingencies

The building will be inspected immediately prior to the works to the roof to ensure that no bats are day roosting therein. It is considered unlikely that this will occur due to the proposed timing of the works. If any bat species not previously recorded are found during the pre-works inspection, or at any other time, discussions will take place with an NRW Species Officer with regards how to proceed and to establish whether amendments to the license or additional roosting facilities will be required.

Additionally, reasonable avoidance measures will be adopted to avoid harm to nesting wild birds. The legal status and procedure to follow if an active nest is discovered during the works will be included within the toolbox talk to be provided to all site contractors and the ecologist will undertake a nesting bird check as part of their pre-commencement check and will be on-site during the soft strip of the building. If any active nests are found during the pre-commencement check, or at any other time during the works, all works within 5m of the identified nest (or which might otherwise cause disturbance of harm to its occupants) will be discontinued and a suitable no-works zone will be established around the nest until it has been established that all the chicks have fledged. The delay caused by such an occurrence may require an amendment to the license, as the timing of works may be affected.

N.B: To avoid accidental harm to bats, any new roofs to be installed will be lined with 1F bituminous felt, and not any kind of breathable roofing membrane.

6.3.6 Biosecurity Risk Assessment

White Nose Syndrome: There have been a small number of confirmed cases of bats carrying the fungus which causes white nose syndrome (*Pseudogymnoascus destructans*). Effective measures of hygiene will be applied, such as washing hands and washing and disinfecting equipment used within the roost or when processing bats in the field before and after use. All mitigation works are to be undertaken within or immediately adjacent to the site itself and there is no requirement to move bats or other species off-site. If bats are discovered (alive or dead) which have symptoms of white nose syndrome then NRW will be notified immediately, and works will cease until such times as advice has been given by NRW.

Rabies: European Bat Lyssaviruses are known to exist in low endemic levels within the UK bat population. To control the risk of infection, the licensed ecologist and any accredited agents employed in a capacity which might require the handling of bats will be appropriately vaccinated against rabies. No one other than the licensed ecologist or their accredited agent will be involved in the handling of any bats.

SARS-CoV-2: Care must be taken to prevent the spread of the SARS-CoV 2 virus to the UK bat population. To reduce the risk of zoonotic spillover into the UK bat population, all mitigation works are to be undertaken in accordance with the advice provided in the document *Guidance on Ecological Survey and Assessment in the UK During the COVID-19 Outbreak (Version 4)*, produced by CIEEM (2021). In particular, no bat worker who has tested positive for COVID-19, who has symptoms of COVID-19, or who has recently been in contact with a person who has tested positive for COVID-19 or who has symptoms of COVID-19, will be allowed to enter any roosts or potential roosts, or to handle any bats. When entering a roost or handling bats, effective measures of hygiene must be applied, for example, washing hands and washing and disinfecting equipment used within the roost or when processing bats in the field before and after use. People coming into close proximity of bats or handling bats should wear single-use gloves (over handling gloves if needed) and cover their mouth and nose with an appropriate face mask.

A site-specific biosecurity risk assessment will be provided to the site contractors at the time of the toolbox talk and will be left accessible on-site throughout the course of the works. A log of biosecurity measures undertaken during the works will be kept.

6.4 Post-Development Site Safeguard

6.4.1 Habitat/Site Management and Maintenance

The licensee will ensure monies are secured for the site monitoring for a period of up to 5 years, and for post-development mitigation contingencies, as necessary. The licensee agrees to maintain the bat roosting/bird nesting features to be created. Management and maintenance (including remedial action) of the new bat roosting/bird nesting features will be the responsibility of the licensee. Any requirements for repairs or modifications to those features will be identified (by the ecologist) as part of the scheduled monitoring work. Should the buildings be sold, the purchasers must be made aware of the purpose of the bat roosting/bird nesting features and the legislation pertaining thereto. All documentation relating to the presence of bats will be retained by the licensee and passed on to any new owner in the event of the site being sold.

6.4.2 Population Monitoring, Roost Usage, Etc.

Future monitoring of the use of the site will be carried out by the ecologist in Years 1, and 3 post-completion of works, or until it has been established that the compensatory/other roosting provisions are being used by all of the bat species which are to be displaced. Internal inspections of the bat boxes and of the loft will be undertaken to search for evidence of roosting bats. If necessary, further emergence surveys will be undertaken.

6.4.3 Post-Development Mitigation Contingencies

The building to be converted is being used as a current day roost by at least one brown long-eared bat and at least one lesser horseshoe bat. Therefore, this mitigation scheme will be judged to have been successful once day roosting of both species has been established.

If the above is not achieved, the design of the compensation roost will be re-examined and, following consultation with NRW, alterations made as necessary.

6.4.4 Mechanism for Ensuring Delivery of Post-Development Works

There is no Section 106 agreement. The applicant agrees to maintain the bat roosting/bird nesting features to be created as detailed. Should the buildings be sold, the purchasers must be made aware of the purpose of the bat roosting features and the legislation pertaining to the roosts. Monitoring and reporting will be undertaken by the ecologist, following instruction by the applicant, who will bear ultimate responsibility therefor.

7 Biodiversity Enhancement Provisions

To comply with Section 6 of the Environment (Wales) Act 2016, local planning authorities are required to look for biodiversity gain within the planning system. Accordingly, as biodiversity enhancement provisions, a Vivara Pro Beaumaris WoodStone Bat Box will be erected upon a south facing elevation of the newly built standalone building. A Vivara Pro Seville (32mm) WoodStone Nest Box will be erected upon the north elevation of the newly built standalone building. Additionally, a total of three native species fruiting trees –one crab apple, one wild pear and one wild plum – will be planted within the garden area of the proposed dwelling.

The bat box will be installed at a height of at least 4m from the ground. Care will be taken to ensure that no artificial lighting is allowed to spill upon the box or flightlines therefrom/thereto. The nest box will be installed between 1.5m and 3m from the ground, away from any immediate clutter and out of reach of domestic cats or other terrestrial predators.

The trees will be planted within the first planting season post-completion of the development works (December to March, inclusive) and will be provided with appropriate care (i.e., watering, pruning) in accordance with the advice provided by the supplier. Whips and/or feathered trees may be used, but any specimens which fail will be replaced at the end of the given growing period. Once established, the trees may be pruned for aesthetic reasons, or to maintain their health and production, but will at least be allowed to blossom and fruit.