Llantrisant Health Park

Ely Meadow, Talbot Green

Bat and Nesting Bird Survey Report

February 2025

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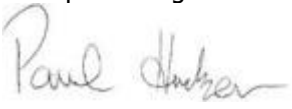
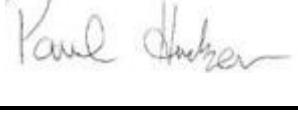
Document Verification Table

Llantrisant Health Park, Ely Meadow, Talbot Green Preliminary Ecological Appraisal				
Revision	Date	Prepared by	Checked by	Verified by
1.0	16 May 2024	Kira Everett Assistant Ecologist 	Charlotte Ingram Assistant Ecologist 	Paul Hudson MCIEEM Principal Ecologist 
Bat and Nesting Bird Survey Report				
1.0	26 February 2025	Evan Smith Assistant Ecologist 	Charlotte Ingram Assistant Ecologist 	Paul Hudson MCIEEM Principal Ecologist 

Summary

Brief and Site Location	Acer Ecology Ltd. were commissioned to conduct a preliminary ecological appraisal of land at Llantrisant Health Park (former British Airways Avionics, Engineering site), Ely Meadow, Talbot Green, Llantrisant, CF72 8XL, within the boundary of Rhondda Cynon Taf Borough Council (Ordnance Survey Grid Reference centred at: ST 0362 8387).
Development Proposals	At the time of writing, the exact development plans are yet to be determined. However, it is anticipated that the plans will involve the demolition of the existing buildings on site, followed by the construction of new buildings in their place. Minimal clearance of scrub and woodland habitats is anticipated, but the full extent of the required clearance remains unknown at this stage.
Results of Survey	The dusk emergence surveys found no evidence of bats roosting within or on the buildings. The dusk emergence surveys recorded barn swallows nesting in the buildings above the stairwells.
Predicted Impacts of Development on Bats and Nesting Birds	Based on the conclusion that bats are not currently roosting on or within the buildings, no negative direct or indirect impacts on bats are anticipated as a result of the proposed demolition. The proposals are anticipated to have a direct impact on barn swallow populations that were recorded nesting within the buildings above the stairwells. If demolition works are undertaken during the nesting period, the works will destroy active nests.
Required Actions	Detailed mitigation measures are set out in Section 6 which include: • Precautionary Measures; • Avoidance, Mitigation, Compensation and Enhancement Measures for Bats; and • Avoidance, Mitigation, Compensation and Enhancement Measures for Birds.
Licensing Requirements	None required.

1. Introduction

1.1. Brief and Site Location

Acer Ecology Ltd. were instructed by Archus on behalf of Cwm Taf Morgannwg University Health Board to conduct a bat and nesting bird survey report of land at Llantrisant Health Park (former British Airways Avionics, Engineering site), Ely Meadow, Talbot Green, Llantrisant, CF72 8XL, within the boundary of Rhondda Cynon Taf Borough Council (Ordnance Survey Grid Reference centred at: ST 0362 8387)[1].

1.2. Site Description

The site proposed for development measures approximately 8.36ha and mainly comprises three buildings in the centre of the site, all of which are almost identical with the same roof construction and layout. Car parks are located in the eastern area of the site, and woodland to the north, south and west of the buildings. Within 100m of the site to the west there is a large woodland area, and to the north are open fields. There is a hospital to the north of the site. Talbot Green town is located to the south-east of the site. The site has flat topography and sits approximately 60m above sea level.

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

1.3. Proposed Works

At the time of writing, the exact development plans are yet to be determined. However, it is anticipated that the plans will involve the demolition of the existing buildings on site, followed by the construction of a new building in their place.

1.4. Scope of the Study

The study comprised the following:

- A Preliminary Ecological Appraisal (PEA) of the site; and
- Ten dusk emergence surveys on buildings B1 - B3.

1.5. Reporting

This report aims to:

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

[1] Latitude and Longitude: 51.545465 , -3.3912730 / what3words: committee.clasping.counts

2. Methods

2.1. Field Study

2.1.1. Daytime Inspection

Preliminary Ground-level Roost Assessment

A preliminary ground-level roost assessment of the trees within the survey area was undertaken, looking for features that bats could use for roosting (Potential Roost Features[2] (PRFs)) and evidence of bats (i.e. droppings in, around or below a PRF; odour emanating from a PRF; audible squeaking at dusk or during warm weather; or staining below the PRF). A systematic inspection was carried out around all accessible aspects of the tree, from both close to the trunk and further away. A high-powered torch (Clulite), binoculars and a ladder were used as appropriate during the survey. The location of the trees is shown on Plan 4.

The trees were assessed for their suitability to support roosting and hibernating bats in accordance with Table 4.2 of the Bat Conservation Trusts Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2023) whereby trees were categorised into the following categories:

- None – Either no PRFs in the tree or highly unlikely to be any;
- FAR – Further assessment required to establish if PRF are present in the tree; or
- PRF – A tree with at least one PRF present.

Building Assessment

The suitability of the buildings was assessed using guidance from the Bat Survey Guidelines (Collins 2023). An interior inspection was not undertaken as this was not arranged at the time of the survey.

The survey was undertaken on the 15th of April 2024 by Kira Everett[3] and Isabel Humphries[4]. A high-powered torch (Clulite), binoculars and a ladder were used as appropriate during the survey.

An additional survey of the internal areas and external roof spaces that were inaccessible during the initial survey was conducted on 18th of August 2024 by Charlotte Ingram[5] and Anwen Moon[6].

The locations of the buildings are shown on Plan 4.

[2] Potential Roost Features that bats may use identified by Andrews include: woodpecker-holes; squirrel-holes; knot-holes; pruning-cuts; tear-outs; wounds; cankers; compression-forks; butt-rots; lightning strikes; hazard-beams; subsidence-cracks; shearing cracks; transverse cracks; welds; lifting bark; frost-cracks; fluting and ivy.
[3] Kira graduated with a degree in Wildlife Biology from the University of South Wales. Kira works as an Assistant Ecologist at Acer Ecology. Details of her qualifications and experience can be found at https://www.linkedin.com/in/kira-everett-221860231/
[4] Isabel graduated with a degree in Chemistry from Cardiff University. Isavel works as an Assistant Ecologist at Acer Ecology gaining ecological survey experience. Details of her qualifications and experience can be found at https://www.linkedin.com/in/isabel-humphries-a182491b9
[5] Charlotte graduated from the University of South Wales with a degree in International Wildlife Biology. She works for Acer Ecology Ltd as an Assistant Ecologist, completing survey seasons in 2023 and 2024. Charlotte acted as an accredited agent on Paul Hudson's licence (S094527).
[6] Anwen graduated from the University of South Wales with a degree in International Wildlife Biology. She is currently working as an Assistant Ecologist and receiving training from Acer Ecology in habitat and protected species survey techniques

Terrestrial Habitat Assessment

A preliminary assessment of the value of the site for bats (and any potential roost sites therein) was made in accordance with Table 4.1 of the Bat Surveys for Professional Ecologists (Collins, 2023) (see Appendix 3). The assessment was based on the relative abundance and quality of habitat features within the site, and surrounding landscape, suitable for roosting, foraging and commuting bats.

Landscape features suitable for foraging and commuting bats include linear landscape features such as watercourses, transport corridors (e.g. roads, sunken lanes railways), walls, hedgerows, coppice, woodland fringe, tree lines, ditches and rhynes and areas of scrub and pasture.

2.1.2. Dusk Emergence Surveys

The first dusk emergence surveys for B1 were undertaken on the 17th and 18th of June 2024. The second dusk emergence surveys for B1 were undertaken on the 29th and 30th of July 2024. The third dusk emergence survey for B1 was undertaken on the 13th of September 2024. The first dusk emergence survey for B2 were undertaken on the 16th and 17th of July 2024. The second survey on B2 was undertaken on the 10th of September 2024. The first dusk emergence survey on B3 was conducted on the 6th of August 2024 and the second was conducted on the 9th of September 2024. Surveyor details can be found in Appendix 2.

Surveys were undertaken following the methodology detailed in Section 7.2 of the Bat Survey Guidelines (Collins, 2023). The surveyors were all equipped with Elekon Batlogger M bat detectors, Anabat Scout detectors or Echometer EM3+ 9 detectors. The entire sections surveyed of each building was kept in view by the surveyors at all times. Each surveyor was also equipped with a Nightfox Swift 2 Pro infrared camera each supplemented with a Nightfox XB5 850nm Infrared LED flashlight. Video footage was subsequently viewed using VLC Media Viewer.

2.1.3. Nesting Bird Survey

An external visual search was undertaken for active bird nests, as well as any signs which might indicate either past or current nesting, such as guano, singing birds, birds carrying nesting material, food items, faecal sacs and calling chicks.

2.1.4. Limitations

General Temporal Limitations

Any ecological survey can only identify what was present on-site at the time the survey was conducted and habitat usage by species can change over time.

Tree Assessments

As detailed in Figure 1 of Bat Surveys for Professional Ecologists (Collins, 2023), tree surveys should preferably be undertaken when no leaves are present on the trees. This was not possible in this instance

due to the daytime inspection being conducted in April when trees when trees had already produced a substantial amount of foliage. However, this is not considered a significant constraint as a thorough and robust inspection of the trees was still possible.

3. Results

3.1. Field Study

3.1.1. Bats

Field Survey Results and Evaluation of Ecological Value of Site for Bats

Trees

All of the trees within the survey area were assessed for their suitability to support roosting bats.

The majority of the trees were young and semi-mature in age, with Diameters at Breast Height (DBH) ranging from 10-25cm, with no PRFs. They were therefore assessed as having negligible bat roost potential and were scoped out of the assessment. They are not mentioned further in this context in the report.

However, the line of trees marked G1-G7 and T1 on Plan 4 supported multiple semi-mature to mature trees. These have been described in detail in the table below and numbered on Plan 4, which should be read in conjunction with this section of the report.

Table 7: Trees Assessed for Bat Suitability

No.	Description	Evidence of Roosting Bats	PRF	Suitability for Roosting Bats (Collins, 2023)
G1	Group of six semi-mature goat willow trees towards the south-east corner of the site, behind the dense bramble scrub (Photo 1).	None observed	Some dense ivy on the majority of the trees within this group. The presence of dense ivy can obstruct the view of any potential PRF's underneath.	FAR
G2	Group of goat willows, multiple stems (Photo 2).	None observed	Dense ivy coverage on the majority of the trees within this group, obstructing the view of any potential PRFs underneath.	FAR
G3	Group of goat willows (Photo 3).	None observed	Very dense ivy coverage on all of the trees within this group, obstructing the view of any potential PRFs underneath.	FAR
G4	Group of goat willows (Photo 4).	None observed	Dense ivy coverage on the majority of the trees within this group, obstructing the view of any potential PRFs underneath.	FAR
G5	One goat willow tree inside of the metal fencing, and large overhanging tree (Photo 5).	None observed	Very dense ivy covering obstructing the view of any potential PRF's underneath.	FAR
T1	One pine tree that is just inside of the metal fencing (Photo 6).	None observed	Dense ivy coverage (Photo 7) obstructing the view of PRFs beneath.	FAR
G6	Group of pine trees (Photo 8).	None observed	Dense ivy coverage obstructing the view of PRFs beneath.	FAR
G7	Within the broadleaved woodland habitat, species	None observed	Majority of the trees have negligible potential, however, there are two	FAR

No.	Description	Evidence of Roosting Bats	PRF	Suitability for Roosting Bats (Collins, 2023)
	include silver birch, goat willow and beech (Photo 11).		trees within this group that require further assessment due to potential PRF's. One silver birch has the presence of a cavity (Photo 9 and 10) as well as another beech tree having very dense ivy (Photo 11), obstructing the view of any potential PRF's underneath.	

Photos Showing the Trees and Their Features

Photo 1: G1

Photo 2: G2

Photo 3: G3

Photo 4: G4

Photo 5: G5

Photo 6: T1

Photo 7: T1 – showing dense ivy

Photo 8: G6

Photo 9: G7 – Potential cavity

Photo 10: Close up of potential PRF

Photo 11: G7

Potential Tree Roosts

G1-7, and T1 have been assessed as FAR i.e. further assessment required.

Buildings and Other Structures

The three buildings on site were assessed externally for its suitability to support roosting bats, as set out in the table below. The buildings are all almost identical and so have been described together.

Table 8: Buildings Assessed for Bat Suitability

Building Number	Description and PRF	Evidence of Bats	Roosting Suitability	Hibernation Potential
B1-3	All of the three buildings on site are two-storey structures, comprised of uPVC cladding on all elevations, which looked to be in generally good condition (Photos 12 and 13). Due to the shape of the buildings, it was difficult to conduct an up-close inspection of the roof to survey for any potential roosting features that bats could utilise. There are large uPVC soffit boxes on all elevations of the buildings, which appear to be in good condition, however, they all appear to be slightly raised from the external walls (Photo 14) creating a roosting opportunity for bats, as well as another gap where the soffit has a plastic capping on the edges (Photo 15) that could also be exploited by roosting bats. Internal access into the buildings was not arranged at the time of the survey.	None	Moderate	Negligible

Photos Showing the Buildings and Their Features

Photo 12: Southern elevation of the buildings

Photo 13: Western elevation of the buildings

Photo 14: Example of raised soffit (circled)

Photo 15: Example of raised capping of soffit box (circled)

Potential Foraging and Commuting Habitat

The site is collectively considered to provide high-quality foraging and commuting habitat for bats due to the areas of semi-natural broadleaved woodland and the semi-improved neutral grassland within the site. The woodland on the western and southern boundaries and the large watercourse that runs adjacent to the western boundary of the site provide continuous habitat corridors which provide ecological connectivity between the site and the surrounding mixed woodland.

Dusk Emergence Surveys

The results of the dusk emergence surveys are summarised overleaf:

Table 1: Summary of Conditions During Dusk Emergence Surveys for B1

	Survey 1		Survey 2		Survey 3
Sections	B1a	B1b	B1a	B1b	B1a + B1b
Date	17/06/24	18/06/24	29/07/24	30/07/24	13/09/24
Sunset time	21:33	21:34	21:05	21:04	19:31
Start time	21:18	21:19	20:50	20:49	19:16
Finish time	22:03	23:04	22:35	22:34	21:01
Start Temperature (°C)	14	14	22	20	11
Sunset Temperature (°C)	14	14	22	20	11
Rain	None	None	None	None	None
Wind (Beaufort Scale)	1	3	3	2	3
Cloud Cover (Oktas)	1	3	1	1	2

Table 2: Summary of Conditions During Dusk Emergence Surveys for B2

	Survey 1		Survey 2
Sections	B2a	B2b	B2a + B2b
Date	16/07/24	17/07/24	10/09/2024
Sunset time	21:23	21:22	19:38
Start time	21:08	21:07	19:23
Finish time	22:53	22:52	21:08
Start Temperature (°C)	15	15	10
Sunset Temperature (°C)	15	15	10
Rain	None	None	None
Wind (Beaufort Scale)	2	0	2
Cloud Cover (Oktas)	7	8	0

Table 3: Summary of Conditions During Dusk Emergence Surveys for B3

	Survey 1	Survey 2
Date	06/08/24	09/09/24
Sunset time	20:52	19:41
Start time	20:37	19:26
Finish time	22:27	21:11
Start Temperature (°C)	18	12
Sunset Temperature (°C)	18	12
Rain	Light rainfall[7]	None
Wind (Beaufort Scale)	2	2
Cloud Cover (Oktas)	4	1

[7] It is to be considered that there was light rain for a short duration throughout survey 1 on B3 however, it is to be noted that bat activity continued following the rain.

Table 4: Summary of Survey Results for Dusk Emergence for B1 (B1a and Survey B1b) on 17/06/24 and 18/06/24

	Survey 1
Emergences	No bats were found emerging from or interacting closely with the building throughout the survey.
Important Commuting/ Foraging Routes	Commuting and foraging routes for common pipistrelles (*Pipistrellus pipistrellus*) and soprano pipistrelles (*Pipistrellus pygmaeus*) were identified primarily in the woodland to the north of the site boundary, and adjacent to the southern elevation of the building.
Bat Activity[8]	Moderate levels of common pipistrelles and soprano pipistrelles were recorded regularly during the survey.

Table 5: Summary of Survey Results for Dusk Emergence for B1 (B1a and B1b) on 29/07/24 and 30/07/24

	Survey 2
Emergences	No bats were found emerging from or interacting closely with the building throughout the survey.
Important Commuting/ Foraging Routes	Commuting and foraging routes for common pipistrelles and soprano pipistrelles were identified primarily in the woodland to the north of the site boundary.
Bat Activity	There were moderate levels of common pipistrelle and soprano pipistrelle activity recorded throughout this survey.

Table 6: Summary of Survey Results for Dusk Emergence for B1 on 13/09/24

	Survey 3
Emergences	No bats were found emerging from or interacting closely with the building throughout the survey.
Important Commuting/ Foraging Routes	There were no important foraging or commuting routes recorded during this survey.
Bat Activity	No bat activity was recorded throughout this survey.

Table 7: Summary of Survey Results for Dusk Emergence for B2 (B2a and B2b) on 16/07/24 and 17/07/24

	Survey 1
Emergences	No bats were found emerging from or interacting closely with the building throughout the survey.
Important Commuting/ Foraging Routes	Common pipistrelles were found commuting and foraging along the western elevation of the building throughout this survey, towards the woodland along the west of the site boundary.
Bat Activity	Low levels of common pipistrelle and soprano pipistrellus.

Table 8: Summary of Survey Results for Dusk Emergence for B2 on 10/09/24

	Survey 2
Emergences	No bats were found emerging from or interacting closely with the building throughout the survey.
Important Commuting/ Foraging Routes	Commuting and foraging routes for common pipistrelles and soprano pipistrelles were identified primarily in the woodland to the north of the site boundary and common pipistrelles were found commuting along the woodland at the west of the site boundary.

[8] Activity thresholds have been quantified using personal judgement according to past experience of surveying similar sites.

Bat Activity	There were moderate levels of common pipistrelle and soprano pipistrelle activity recorded throughout this survey.

Table 9: Summary of Survey Results for Dusk Emergence for B3 on 06/08/24

	Survey 1
Emergences	No bats were found emerging from or interacting closely with the building throughout the survey.
Important Commuting/ Foraging Routes	There were no important foraging and commuting routes recorded during this survey.
Bat Activity	There were low levels of common pipistrelle and soprano pipistrelle activity throughout the survey.

Table 10: Summary of Survey Results for Dusk Emergence for B3 on 09/09/24

	Survey 2
Emergences	No bats were found emerging from or interacting closely with the building throughout the survey.
Important Commuting/ Foraging Routes	There were no important foraging or commuting routes recorded during this survey.
Bat Activity	There were low levels of common pipistrelle and soprano pipistrelle bats activity recorded throughout this survey. There were also low levels of Leisler's bats (*Nyctalus leisleri*) recorded during this survey.

3.1.2. Bat Activity Surveys (Static Detector and Night-time Bat Walkover Surveys)

Please refer to the Bat Activity Survey Report, Acer Ecology (2025) for results of the static detector and night-time bat walkover surveys.

3.1.3. Further Assessment of Trees

Further assessment of the trees is yet to be carried out.

3.1.4. Birds

Field Survey Results

A moderate number of birds were recorded on site during the preliminary ecological appraisal, including: blackbird (*Turdus merula*), buzzard (*Buteo buteo*), Eurasian wren (*Troglodytes troglodytes*), goldfinch (*Carduelis carduelis*), herring gull (*Larus argentatus*), long-tailed tit (*Aegithalos caudatus*), mediterranean gull (*Ichthyaetus melanocepalus*), robin (*Erithacus rubecula*), wood pigeon (*Columba palumbus*), and wren (*Troglodytes troglodytes*).

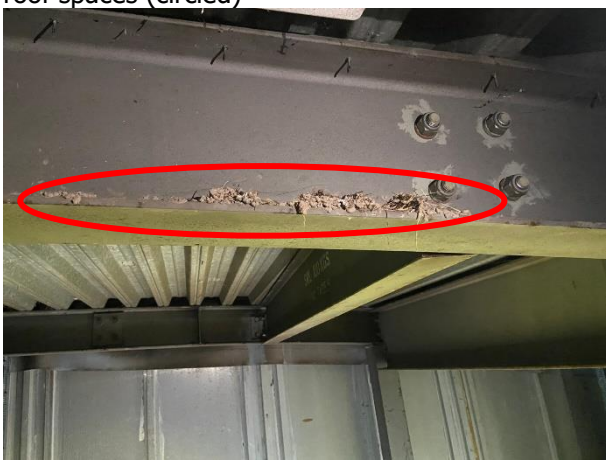
Barn swallows (*Hirundo rustica*) were recorded nesting within the buildings above the stairwells during the dusk emergence surveys, with several barn swallows seen leaving and returning to their nests.

Additionally, during the updated building inspection, a significant number of defunct barn swallow nests were found in the roof spaces above all 12 external stairwells (Photos 16 & 17). In total, 22 nests were identified, most of which were defunct, while two contained eggs.

Photos Showing Defunct Nests

Photo 16: Example of defunct nests found in the roof spaces (circled)

Photo 17: Example of defunct nests found in the roof spaces (circled)



Evaluation of Ecological Value of Site for Birds

Ten species were observed on site. The dense scrub, scattered trees and broadleaved woodland habitats contain a variety of native tree and shrub species with a range of age class present, providing a range of nesting and foraging opportunities for tree and scrub nesting bird species. The woodland on site has good ecological connectivity to the wider landscape, including the broadleaved and mixed woodland on its western, northern and southern sides. Due to the low sward height and lack of tussocky vegetation, the semi-improved neutral grassland is unlikely to be suitable for ground nesting birds, however, may provide moderate foraging opportunities.

Overall, the site is considered to be of high ecological value to birds due to the woodland habitats found on its western, northern and southern boundaries and good ecological connectivity to the suitable habitats within wider landscape.

4. Evaluation

4.1. Summary of Dusk Emergence Surveys of B1 - B3

The dusk emergence surveys found no evidence of bats roosting within or on the buildings.

4.2. Summary of Nesting Bird Survey

The update building inspection and dusk emergence surveys recorded barn swallows nesting in the buildings above the stairwells.

5. Impact Assessment

5.1. Potential Impacts on Bats

Based on the conclusion that bats are not currently roosting on or within the buildings, no negative direct or indirect impacts on bats are anticipated.

5.2. Potential Impacts on Birds

The proposed works are expected to directly affect barn swallow populations, as active nests have been recorded within the buildings above the stairwells.

If demolition occurs during the nesting season, there is a risk of destroying active nests. To mitigate this, precautionary measures have been outlined in Section 6.

Additionally, since the demolition will result in the permanent loss of nesting sites, compensatory provisions have been recommended to replace lost nesting opportunities. Further details can be found in Section 6.

6. Required Actions

6.1. Licensing Requirements

No further survey work is considered necessary. A protected species licence is not required as the survey indicates a likely absence of roosting bats in the buildings.

6.1.1. Climbing Surveys/Further Work – G1-7, and T1

Trees within G1-7, and T1 were assessed during the preliminary ecological appraisal as requiring further assessment to assess if they can support roosting bats, however this is assessment was made from ground level without the inspection of all potential features. There are three options on how to proceed, which are set out in three options below:

Option 1: A climbing survey of G1-7, and T1 should be undertaken to fully assess the potential roost features for bats. If the potential roost feature is re-assessed as having negligible or low potential for roosting bats then the tree can be felled following a precautionary method statement. If the feature is assessed as having moderate potential or higher, then further dusk emergence surveys (or climbing surveys) of the tree will be required, as set out in Option 2 and 3 below.

Option 2: If the assessment of G1-7, and T1 remains as having moderate potential to support roosting bats then current best practice guidelines (Collins, 2023) state that two separate survey visits should be undertaken on G1-7, and T1 comprising two dusk emergence surveys. The surveys should be undertaken between May to September, with at least one of the surveys between May and August.

If the assessment of G1-7, and T1 is upgraded to high potential to support roosting bats then current best practice guidelines (Collins, 2023) state that three separate survey visits should be undertaken on G1-7, and T1 comprising three dusk emergence surveys. The surveys should be undertaken from May to September with at least two of the surveys undertaken between May and August.

Option 3: Alternatively, if all the potential roosting features (PRFs) can be inspected fully from a climbing survey then these can be carried out instead of the dusk emergence surveys. Features assessed as having moderate potential for supporting roosting bats will have two climbing surveys undertaken with the PRFs being fully inspected using endoscopes and other equipment if necessary. These climbing surveys should be spaced at least three weeks apart and undertaken from May to September with at least one of the surveys between May and August.

6.2. Precautionary Measures

No evidence of any use by roosting bats in any of the buildings proposed for demolition, it is therefore highly unlikely that bats or their roosts will be affected by the demolition works. No precautionary timing conditions on works are required for this phase of the works. However, it is not possible to rule out bat use entirely, and there is also a risk of an offence being committed if active bird nests are present. The following recommendations are made to minimise risks to bats and birds during the demolition:

- It will be clearly understood, and contractors made aware that in the event of any bats being found, the contractor must halt works. Appropriate advice will be obtained from a suitably qualified bat consultant or NRW and, if necessary, a bat development licence obtained before work can resume;

- Contractors will check for the possible presence of bats on the undersides of any features that could potentially be used by bats for roosting. Features such as roofing tiles, ridge tiles, fascias, soffits and bargeboards etc. where present will be check as they are lifted off. This is especially important at the outset of the works, since once the works have started, the disturbance is likely to drive any bats which are present away voluntarily;

- If demolition works commence during nesting bird season (March – September inclusive), a pre-works inspection for any active bird nests will be conducted by a suitably qualified ecologist; and

- The services of an appropriately qualified and licensed ecological consultant will be available on an 'on-call' basis at all stages of the works to deal with any unexpected encounters with bats or nesting birds. Contact details of such will be held on site. Acer Ecology Ltd. could be retained to provide this support.

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

6.3.1. Installation of Bat Boxes

In advance of the works, ten Schwegler 2F general bat boxes (see Appendix 7) (or suitable alternative) will be erected on suitable, large trees[9] within the site to provide compensatory alternative roosting habitats for any bats which may be displaced as a result of the works. Ideally, the bat boxes will be installed at a height of 4m from ground level. Where applicable, the bat boxes should utilise straps rather than nails to avoid damaging trees. Ash trees should be avoided due to future problems with Chalara or ash dieback (*Hymenoscyphus fraxineus*). The bat boxes will be retained on site after completion of the works in-perpetuity as a biodiversity enhancement.

6.3.2. Sensitive Lighting Strategy for Bats and Mammals

The lighting design for the site will be kept to the minimum level which meets the needs of security and health and safety. The unnecessary lighting of habitats which could potentially be used by bats, dormice and otter such as nearby trees, hedgerows and watercourses etc. will be avoided.

External lighting will be minimised and installed at low-level only (i.e. no higher than eaves level and lower than 2.4m) and directed downward (i.e. below the horizontal plane with no upward tilt). Fully shielded

[9] The bat box should ideally be positioned to face either south-east, south or south-west and located as high as possible, ideally located in a sunny position which is as close as possible to the previous roosting location. A flight path clear from any obstructions should be maintained around the bat box once in situ. The bat box should be positioned away from horizontal branches directly below or above the bat box which could easily be accessed by cats. Ash trees should be avoided due to future problems with Chalara or ash dieback (*Hymenoscyphus fraxineus*).

lights with front and side hoods/shields or cowls will be installed to prevent upwards and horizontal light spill. The lighting source will not be visible.

Lighting will not be located in the vicinity of, or shine towards the trees and areas of scrub which surround the site, thus maintaining a 'dark corridor' and avoiding/minimising disturbance to commuting and foraging bats and dormice. Any security lights used will operate on a passive infrared (PIR) motion sensor sensitive to large objects only, to avoid constant triggers by bat passes and with timers set on a short duration (i.e. a maximum 'on' time of one minute) to reduce the amount of 'lit time'. The lights will either have an integrated LED light source or use LED bulbs. They will be low intensity (i.e. circa 11 watts) and have a warm white colour temperature of 3000K or less (ideally 2700K if commercially available). White, blue and green lighting sources including mercury or metal halide, CPO and CDO (ceramic discharge metal-halide) bulbs which have significant effect on bats will be avoided.

See Plan 5 for the proposed dark corridor.

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

6.4.1. Timing Restrictions

Demolition of the buildings that are used by nesting barn swallows should, wherever possible, be undertaken from September to February outside the bird breeding season (March to August inclusive). Alternatively, any works undertaken from March to August will be subject to a check for nesting birds by a suitably qualified ecologist immediately prior to the works. If any active nests are found these will be protected, along with an appropriate buffer zone of approximately 5m-10m, until the nesting is complete, and the young have fledged.

6.4.2. Nesting Bird Provision

<u>Compensatory Barn Swallow Nesting Provision</u>

The proposed demolition of the buildings will result in a loss of multiple nesting sites for barn swallows.

A total of twenty defunct and two active swallow nests were recorded during the survey. Replacement opportunities for nesting swallows will be provided within the development site.

Swallows prefer to nest in covered structures, such as open-fronted log sheds, carports, or porches. However, as the development site lacks suitable existing or planned features of this kind, five purpose-built swallow nesting structures will be installed in the south of the site to compensate for the loss of nesting opportunities. The recommended locations for these structures are shown in Plan 11 and further details of the proposed structures can be found in Appendix 8.

If nest cups are installed internally, they should be placed as high as possible, preferably on timber beams and positioned at least 1m apart.

Enhancement for Other Bird Species

Opportunities for nesting swifts will also be provided with the installation of three Schwegler No. 17 Triple Cavity Swift Boxes on the external walls of the proposed buildings. Details of the swift nest box can be found in Appendix 9.

Additionally, four Vivara Barceona WoodStone Open Nest Boxes (or suitable alternative) will be erected upon the scattered trees at the south and west of the site. These will be located in a secluded position, ideally within dense cover and at a minimum height of 3 metres from ground level. The peripheral vegetation of the site provides suitable locations for such boxes.

Open fronted nest boxes cater for a range of bird species, including thrush, blackbird, robin, dunnock, wren, pied wagtail, redstart and flycatcher. Due to the more exposed nature of these nest boxes, it is especially important to ensure that they are located in dense cover in order to avoid the attention of potential predators.

See Plan 6 for suggested locations of the bird boxes and Appendix 10 for details of the Vivara Barceona WoodStone Open Nest Box.

6.5. Longevity of Report

If development works do not begin within eighteen months to two years of the date of this report, an update survey is likely to be required in accordance with guidance from NRW[10], CIEEM (2019) and BS 42020:2013[11], to determine if conditions have changed since those described in this report.

[10] As set out in Point 5 of the NRW *Bat Surveys - Frequently Asked Questions* and Point 4 of the guidance included within the NRW European Protected Species Development Application Form.
[11] As set out in Section 6.2.1, point 7 which states that ecological information should not normally be more than two/three years old, or as stipulated in good practice guidance).

7. References and Bibliography

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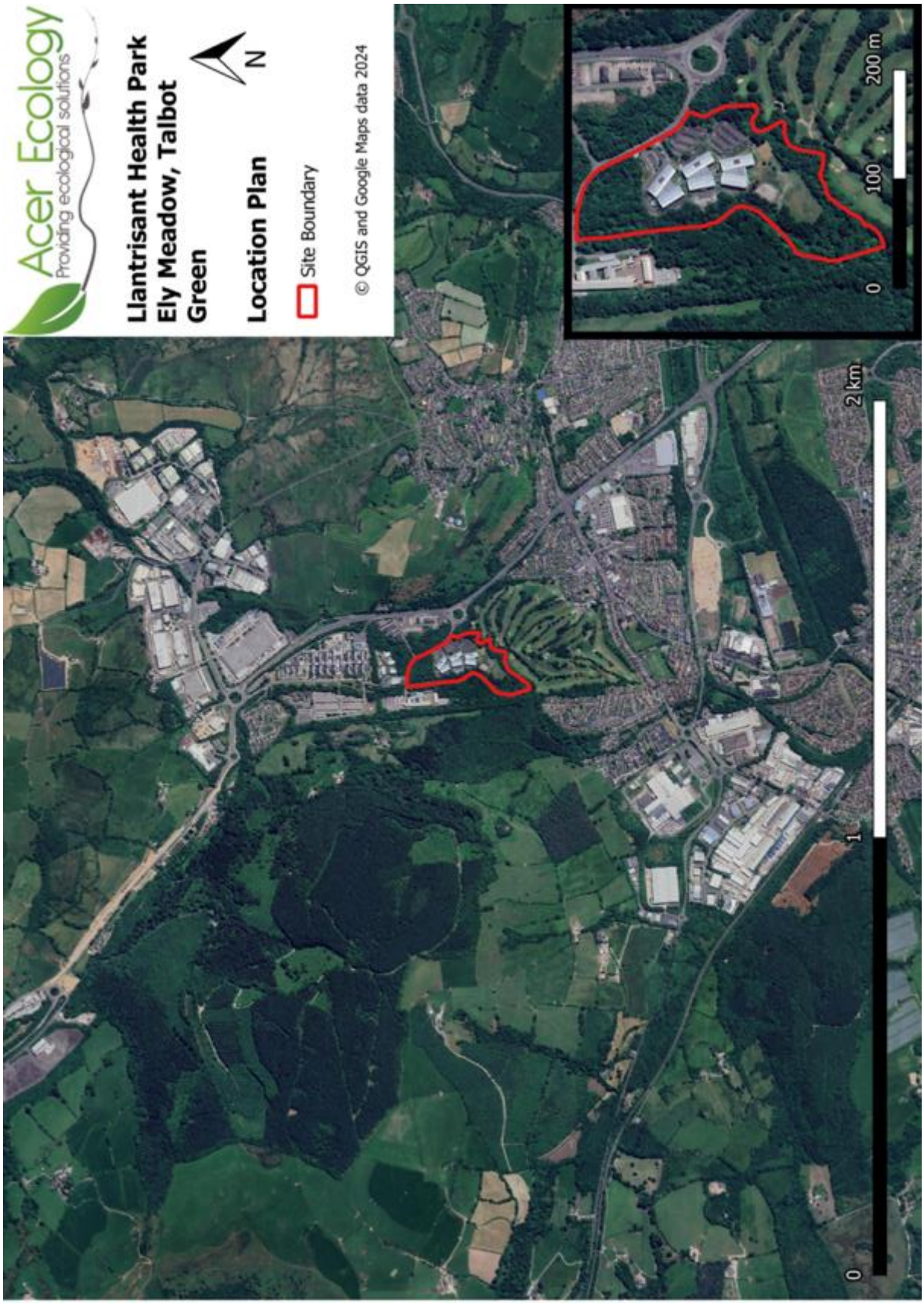
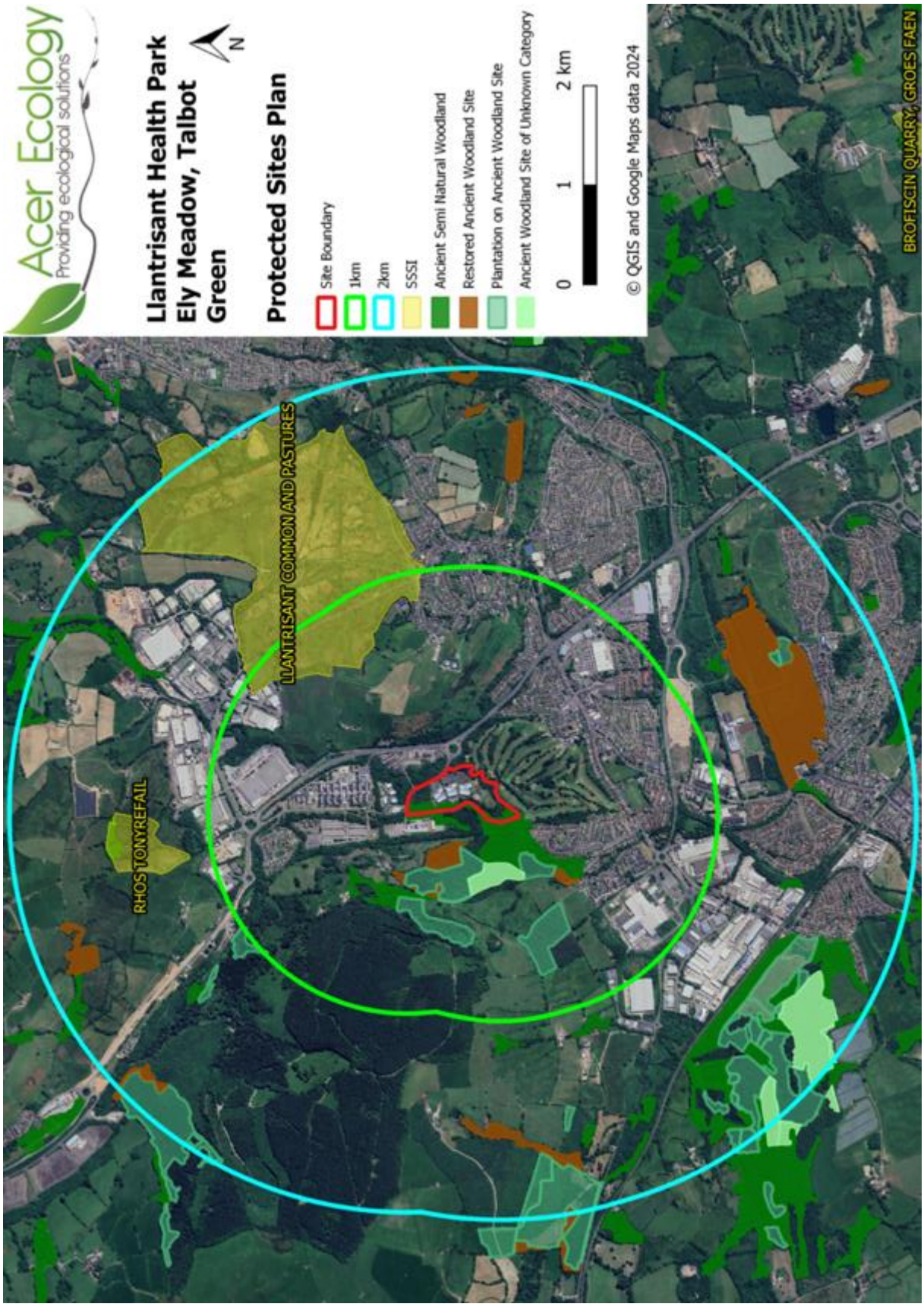
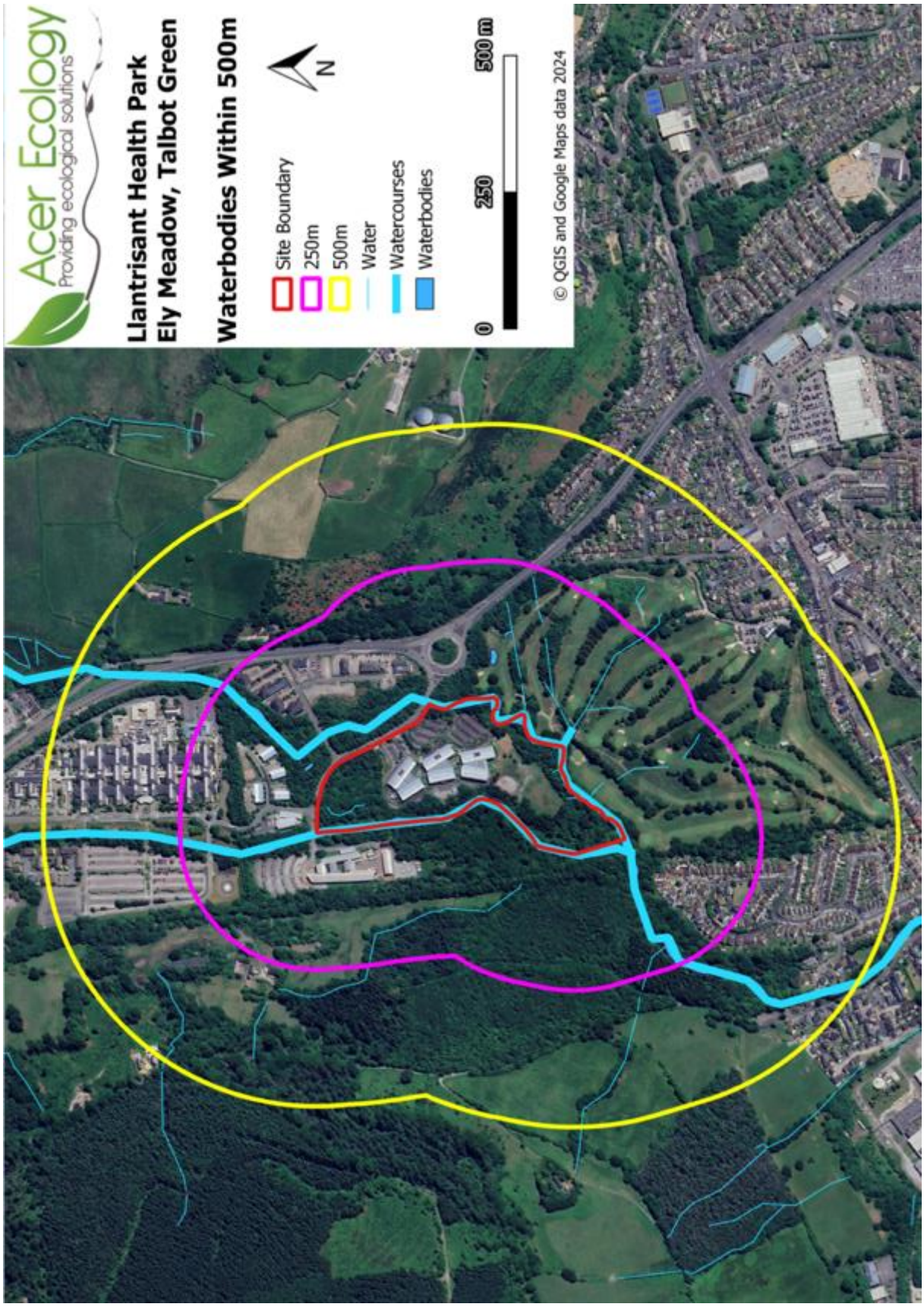
Plan 1: Site Location



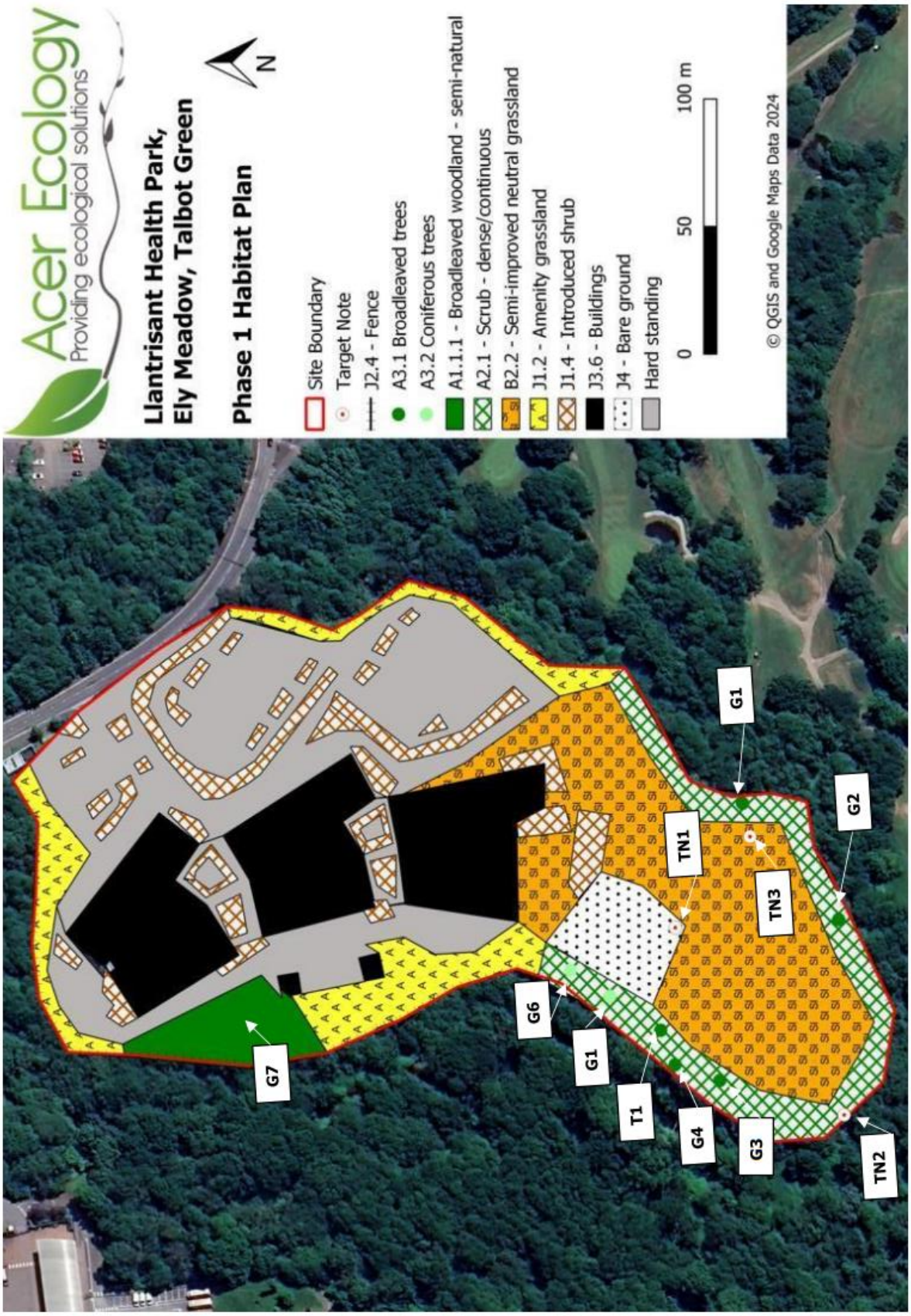
Plan 2: Site Location and Protected Sites (2km Buffer)



Plan 3: Location of Water Bodies within 0.5km of Site



Plan 4: Habitats and Vegetation

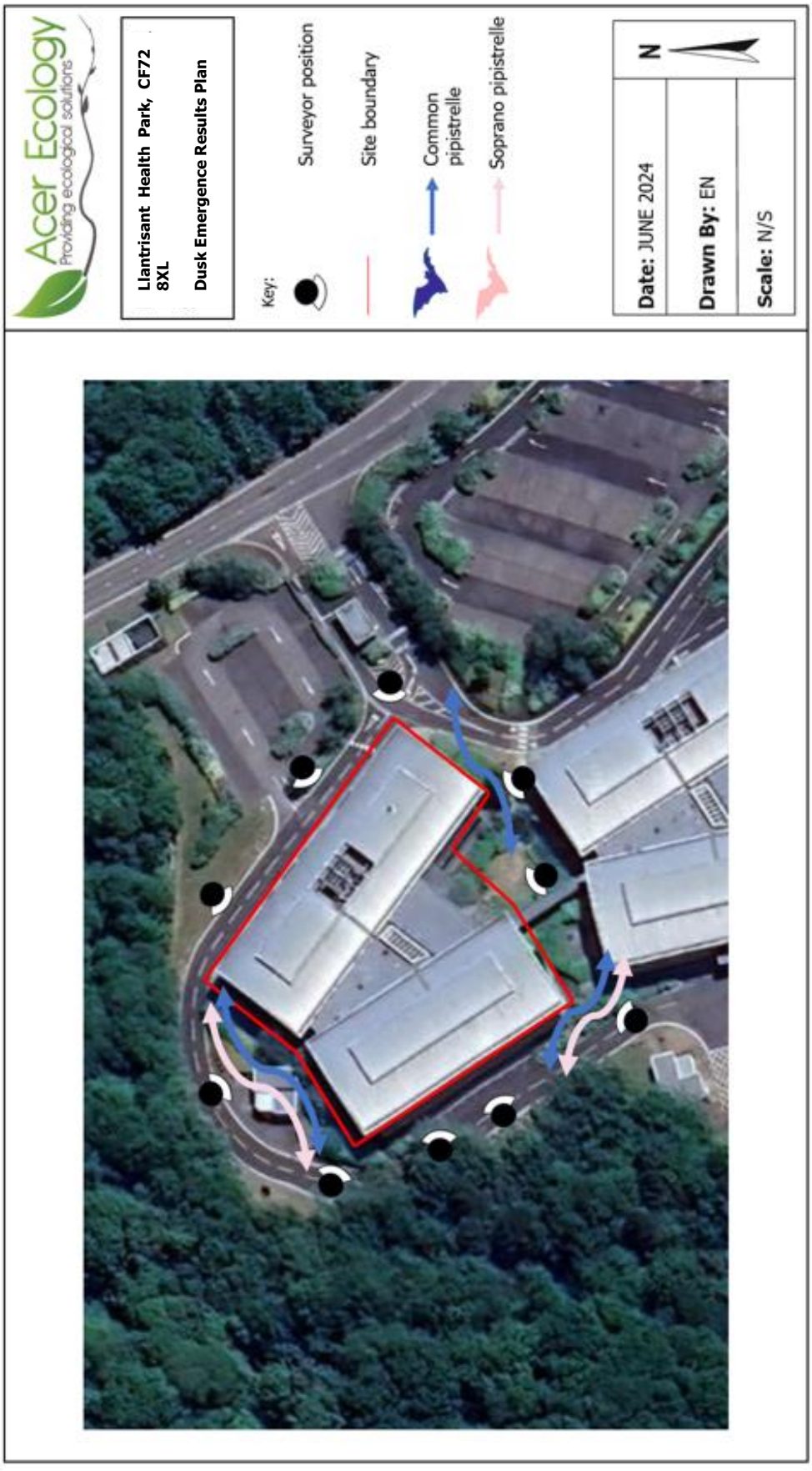


TN1 – Nesting bird, TN2 – Gap under gate, TN3 - Potential fox faeces

Plan 5: External Lighting

Plan 6: Mitigation Plan

Plan 7: Dusk Emergence Survey Results (Surveys 1a and 1b) – 17/06/2024, 18/06/2024



Plan 8: Emergence Survey Results (Surveys 2a and 2b) – 29/07/2024, 30/07/2024

Plan 9: Dusk Emergence Survey Results (Survey 3) – 13/09/2024

Plan 10: Dusk Emergence Survey Results (Surveys 1a and 1b) – 16/07/2024, 17/07/2024

Plan 11: Recommended Swallow Shelter Location

Appendix 1: Protected Species Legislation Relevant to Site

Birds

All wild British birds (while nesting, building nests and sitting on eggs), their nests and eggs (with certain limited exceptions) are protected by law under Section 1 of the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way Act 2000. Included in this protection are all nests (at whatever stage of construction or use) and all dependent young until the nest is abandoned and the young have fledged and become independent. Particularly rare species such as barn owl (*Tyto alba*) are listed on Schedule 1 which gives them additional protection from disturbance whilst nest building, whilst near a nest with eggs or young, or from disturbing the dependent young.

Section 10.8 of the Conservation of Habitats and Species Regulations 2017 state that Local authorities must use all reasonable endeavours to avoid any deterioration of habitats of wild birds.

Bats

All species of bats and their roosting sites are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 which continues to apply in UK law through the Conservation of Habitats and Species (Amendment) (EU Exit) ['CHSAEU'] Regulations 2019.

All species of UK bats are designated as 'European protected species'. Seven species of bat (soprano pipistrelle (*Pipistrellus pygmaeus*), barbastelle (*Barbastella barbastellus*), Bechstein's (*Myotis bechsteinii*), noctule (*Nyctalus noctula*), brown long-eared (*Plecotus auritus*), lesser horseshoe (*Rhinolophus hipposideros*) and greater horseshoe bats (*Rhinolophus ferrumequinum*)) are listed under Section 7 of the Environment (Wales) Act 2016 as being of principal importance for maintaining and enhancing biodiversity in Wales.

Regulation 55(2) of the Conservation of Habitats and Species Regulations 2017 defines the circumstances where derogation is allowed for an affected EPS and a license could be issued by Natural Resources Wales. All three test are to be met by the proposals prior to planning permission being allowed which include:

1. The first test set out in Regulation 55(2)(e) deems that the need for the development should be in the interests of public health, public safety and an imperative reason of overriding public interest, which includes beneficial consequences of primary importance for the environment;
2. The second test set out in Regulation 55(9)(a) deems that there should be and 'no satisfactory alternative';
3. The third test set out in Regulation 55(9)(b) deems that the development should have no detrimental effect on the favourable conservation status of an EPS.

Appendix 2: Surveyor Experience

17/06/24

Jonathan Dixon – Jonathan graduated with a degree in Renewable Energy and the Built Environment from the University of Wales Trinity Saint David. He is in his fourth season of bat survey work. Further details of his qualifications and experience can be found at: https://www.linkedin.com/in/jonathan-dixon.

Kira Everett – Kira graduated with a degree in Wildlife Biology from the University of South Wales. Kira works as an Assistant Ecologist at Acer Ecology. Details of her qualifications and experience can be found at https://www.linkedin.com/in/kira-everett-221860231..

Hannah Byrne – Hannah graduated from Swansea University with a degree in Zoology, and Cardiff University with an MSc in Global Ecology and Conservation. She is in her second year of bat surveying. Further details of her qualifications and experience can be found at: https://www.linkedin.com/in/hannah-byrne-264622291/.

Josh Maidment – Josh is currently in his second season of undertaking bat dusk emergence survey work with Acer Ecology Ltd.

Carly Parsons – Carly has over 10 years of research experience, including property research and searches on residential and commercial sites. This also included new and planned housing developments. She has also graduated with a degree in Environmental Science and has over 6 years of wildlife and conservation experience, carrying out surveys, monitoring and recording species with a local wildlife and conservation groups and has been a volunteer with the Bat Conservation Trust where she undertook bat protection training.

18/06/24

Jonathan Dixon – Same as above.

Kira Everett – Same as above.

Callum Mills – Callum graduated with a Bachelors degree in Zoology from the University of Cumbria and a Masters in Endangered Species Recovery and Conservation from Nottingham Trent University. He has completed a number of bat walks with Natur am Byth and the Wild around the Swansea area. He has also participated in emergence surveys for the Vincint Wildlife Trust in the Gower and attended a multitude of online courses ran by the Bat Conservation Trust. Callum is in his first season of bat survey work.

Carly Parsons – Same as above.

Kelsey Marshall – Kelsey is undertaking her second season of dusk and dawn bat survey work with Acer Ecology.

16/07/2024

Ella Newton – Ella is currently completing a degree in Wildlife Ecology and Conservation Science at the University of the West of England (UWE). In addition, she currently volunteers with the Bat Conservation Research Lab (University of Bath) conducting research on the impact of ambient lighting at night (ALAN) on bat activity. She is in her first season of surveying and is currently receiving training from Acer Ecology.

Alice Thorne – Alice is currently studying for a BSc (Hons) Natural History degree from the University of South Wales. Alice is currently in her third season of bat surveying, working as an Assistant Ecologist at Acer Ecology. Further details of her qualifications can be found at https://www.linkedin.com/in/alicethorne.

Sonia Lemon – Sonia has a Bachelor of Science (Honours) degree in Natural Sciences, with specialisation in Environmental Science. She has written multiple scientific reports on vulnerable/endangered species, whilst studying at university. She is in her first surveying season and has a certificate in Bat Ecology and Surveying.

Jack Hole – Jack graduated from Swansea University with a degree in Zoology. He is in his second year of bat surveying.

Jonathan Dixon – As above.

17/07/2024

Liv Taylor – Liv is currently studying a degree in Physical Geography at the University of Birmingham and is currently receiving training from Acer Ecology, working as an Assistant Ecologist, gaining ecological surveying experience. Further details of Liv's qualifications and experience can be found at: https://www.linkedin.com/in/liv-taylor-857b18316/.

Evan Smith – Evan graduated with a degree in Conservation Biology and Ecology from the University of Exeter. Evan is currently working as an Assistant Ecologist and receiving training from Acer Ecology. Further details of his qualifications and experience can be found at https://www.linkedin.com/in/evan-smith-9b73a719a.

Jonathan Dixon – As above.

Jack Hole – As above.

Alice Thorne – As above.

29/07/2024

Anwen Moon – Anwen graduated from the University of South Wales with a degree in International Wildlife Biology. Anwen worked as an Assistant Ecologist with Capita Real Estate and Infrastructure (now WSP) from August 2021 - November 2022. During her time at Capita, Anwen undertook regular ecological fieldwork throughout sites in the UK, and has extensive experience writing ecological reports and using QGIS. Anwen has experience undertaking bat dusk emergence and dawn re-entry surveys, along with Preliminary Roost Assessments. Added experience includes: providing written and verbal advice to contractors and clients, with ecological supervision experience. Regular work with Phase 1 Habitat Surveys,

and experience with protected species surveys including hazel dormouse, reptile, otter, badger, bird. Further details of her qualifications and experience can be found at https://www.linkedin.com/in/anwen-moon-75945828b.

Alice Thorne – As above.

Erin Lightbody – Erin recently graduated from Cardiff University, with an Integrated Masters degree in Biological Sciences. She is currently working with Acer Ecology in her first season of bat surveying and undertaking training. More details can be found at: www.linkedin.com/in/erin-lightbody-a66259230.

Sonia Lemon – As above.

30/07/2024

Alice Thorne – As above.

Anwen Moon – As above.

Sonia Lemon – As above.

Jonathon Dixon – As above.

Liv Taylor – As above.

06/08/2024

Rhys Davies – Rhys recently finished his degree in in Zoology from Cardiff University and is currently receiving training from Acer Ecology, working as an Assistant Ecologist and gaining ecological surveying experience. Further details of Rhys's qualifications and experience can be found at: https://uk.linkedin.com/in/rhys-davies-1049b2115

Callum Mills – As above.

Mathew Passmore – Matthew is currently studying Natural History at the University of South Wales. Matthew is excited to have gained bat emergence and re-emergence surveying experience with Acer over his first season. To find more about his experience: http://www.linkedin.com/in/matthew-passmore-38b1bb247

Alice Thorne – As above.

Sonia Lemon – As above.

Ffion Ashford – Ffion is currently a student at the University of South Wales, studying BSc Natural History. Over summer she worked with Acer Ecology, gaining new skills and completing her first bat season. To find out more: http://linkedin.com/in/ffion-ashford-ab1a54260

Liv Taylor – As above.

Alys Murphy – Alys Murphy is a graduate of the University of Wales Trinity Saint Davids. She graduated with a BA in Education Studies. She is currently subcontracting for Acer Ecology in her first season of bat surveying.

Jonathan Dixon – As above.

Anwen Moon – As above.

Jonathan Dixon – As above.

09/09/2024

Sonia Lemon – As above.

Jonathan Dixon – As above.

Loretta Lemon – Loretta has a Bachelor of Science (Honours) in Psychology, she researched the impacts of nature and the environment on people's mental and physical wellbeing. She is in her first bat survey season and regularly volunteers with various environmental organisations.

Bharat Baral – As above.

Siôn Smith – Sion is currently studying zoology at Swansea University. He is working in his second season of bat survey work and is receiving training from Acer Ecology. Further details of his qualifications and experience can be found at: http://www.linkedin.com/in/sion-smyth-462443253

Tom Whittle – Primary career working within mental health services for the NHS. First season of experience conducting bat emergence surveys. Experience with Arbtech, Acer Ecology and Home Counties ecology conducting bat emergence and transect surveys. Keen to further knowledge and experience within field of ecology.

Anwen Moon – As above.

Gavin Brooks – As above.

Callum Mills – As above.

Hannah Judd – As above.

10/09/2024

Evan Smith – As above.

Gavin Brooks – As above.

Holly Redfearn – As above.

Loretta Lemon – As above.

Tom Whittle – As above.

Jonathan Dixon – As above.

Callum Mills – As above.

Siôn Smyth – As above.

Sonia Lemon – As above.

Hannah Judd – As above.

13/09/2024

Evan Smith – As above.

Holly Redfearn - Holly graduates this summer from Gloucestershire University, with a Postgraduate Diploma in Applied Ecology. She is currently working with Acer Ecology in her first season of bat surveying and volunteering with the Vale of Glamorgan and Bridgend Bat group.

Callum Mills – As above.

Bharat Baral – Bharat has graduated from University of South Wales, with a Masters degree in Wildlife and Conservation Management. He am currently working with Acer Ecology as a subcontractor for bat surveying also I am working as a field surveyor (Ecology) in Tyler Grange. More details can be found at: https://www.linkedin.com/in/bharat-baral-329b1a17b.

Natalie Bowell- As a recent graduate from the Open University, She is currently performing bat surveys on a freelance basis for Acer ecology. She is also experienced in surveying GCN and ornithology. Natalie has a qualifying CIEEM membership with QGIS knowledge.

Rebecca Jenkins – Rebecca is undertaking her first year of surveying with Acer Ecology.

Hannah Judd – Hannah is currently completing her Masters in Conservation and Wildlife Management at the University of South Wales. She is in her second season as an ecologist, having gained the majority of her experience in great crested newt mitigation. She has just completed her first season of bat surveying with Acer Ecology.

Rachel Haynes – Rachel is currently undertaking an MRes in Behavioural Ecology and Evolution at Swansea University and has a BSc in Zoology from University of Exeter. She has recently joined Acer Ecology, having completed two seasons of bat surveying, including volunteering with Vincent Wildlife Trust's horseshoe bat monitoring.

Fraser Mathieson - Fraser graduated from Portsmouth University with a degree in Geography and Aberdeen University with a MSc in Geographic Information System. He is currently in his first season of undertaking bat dusk emergence survey work with Acer Ecology.

Gavin Brookes – Gavin graduated with 1st class honours from the University of South Wales in Civil Engineering. He is currently completing a Certificate in Ecological Consultancy with Ecology Training UK. He also holds a RHS Practical Horticulture level 3 qualification from Pencoed College. He is undertaking his first season of bat survey work.

Appendix 3: Guidelines for Assessing the Suitability of Trees on Proposed Development Site for Bats

2023 Guidelines – Based upon Table 6.2 from Collins (2023)

Suitability	Description
None	Either no PRFs in the tree or highly unlikely to be any.
FAR	Further assessment required to establish if PRFs are present in the tree.
PRF	A tree with at least one PRF present.

PRFs can be further categorised according to the below:

Suitability	Description
PRF-1	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony
PRF-U	Unknown if PRF could only be used by individuals or could be used by multiple bats and therefore used as a maternity roost.

Appendix 4: Guidelines for Assessing Potential Suitability of Building on Proposed Development Site for Bats [12]

Suitability	Description of Roosting Habitat	Commuting and Foraging Habitat
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting and foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection appropriate conditions[13] and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity) or hibernation[14]. A tree of sufficient size and age to contain PRFs but with none seen from the ground[15].	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only) the assessments in this table are made irrespective of conservation status, which is established after presence is confirmed.	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

[12] Table 4.1 in Collins (2016)

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

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

[15] This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015).

Appendix 5: Recommended Survey Number for Dusk Emergence Surveys

Table 7.1. Recommended timings for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees where other methods such as PRF inspection are not possible, but unlikely to give confidence in a negative result). To be used in tandem with Table 7.2.

Low roost suitability or PRF-I	Moderate roost suitability	High roost suitability or PRF-M
May to August (structures) No further surveys required (trees)	May to September[a], with at least one of surveys between May and August[b]	May to September[a], with at least two of surveys between May and August[b]

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

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

Appendix 6: Minimum Recommended Number of Repeats for Activity Surveys

Table 8.3. Minimum recommended number of repeats for activity surveys.

Survey type	Low suitability habitat for bats[a]	Moderate suitability habitat for bats	High suitability habitat for bats
NBW	One survey visit[b] per season (spring – April/May, summer – June/July/August, autumn – September/October)[c]. Further surveys may be required if these visits, or the results of static detector surveys, reveal activity of interest that requires more observation on site.		
Automated/static bat detector surveys[d] The same locations should be used for each survey for comparison.	Data to be collected for a minimum of five consecutive nights per season (spring – April/May, summer – June/July/ August, autumn – September/October)[c] in appropriate (or the best available) weather conditions for bats.	Data to be collected for a minimum of five consecutive nights per month (April to October)[c] in appropriate (or the best available) weather conditions for bats.	

a If the habitat has been classified as having low suitability for bats, particularly on small sites with relatively few features, an ecologist should make a professional judgement on how to proceed based on all of the evidence available. It may or may not be appropriate for bat activity surveys to be carried out in low suitability habitats. However, caution should be exercised in fringe areas (e.g. some areas of Scotland) where 'low suitability habitat for bats' may be important to local bat populations due to the relative scarcity of better habitats. In such situations, bats are likely to also be more widely dispersed and may use a larger number of sites, therefore survey effort may actually need to be increased to detect use on the proposed site in question.

b A survey visit should aim to cover all habitats represented in the survey area that could be impacted by the proposed activities. This may consist of a single walkover carried out on a single night for small sites (e.g. small housing developments) with low habitat diversity, but could range up to multiple walkovers carried out over one or several nights (depending on number of ecologists) on a larger site (e.g. road schemes) with greater habitat diversity.

c April and October surveys are both weather- and location-dependent. Conditions may become more unsuitable in these months, particularly in northern England and Scotland. Surveys in the 'shoulder' seasons may, however, help to identify activity close to transitional or hibernation roosts or help to understand how bats adapt their behaviour in different weather conditions. Professional judgement should be used on the necessity for surveys during these months.

d Detector locations should be assigned to provide a representative sample of all habitats in the survey area that could be impacted by the proposed activities. This could mean a single detector location at a small site with only one habitat represented but could range up to many detector locations on larger sites. Automated/static surveys are also useful when assessing collision risk, e.g. detectors can be placed at crossing points on proposed roads or railways. However, these surveys should generally be complemented by manual surveys where observations of how bats interact with the site can be made.

Note: Multiple survey visits should be separated by at least three weeks, preferably longer, to observe temporal changes in activity.

Appendix 7: Schwegler 2F Bat Box

Schwegler 2F General Bat Box

The Schwegler 2F General Bat Box is the standard and most popular bat box. Ideal for summer roosts and is constructed of woodcrete, providing a breathable, stable temperature within and is suitable for long-term mitigation projects.

Position: Ideal for trees, should be mounted on tree trunks at a height of 3m – 6m. Can be positioned in clusters of three, with each box facing west through a south-eastern aspect to provide a variety of micro habitats.
Height: 33cm.
Diameter: 16cm.
Weight: 4kg.

Selection of Trees

Selected trees should ideally be a minimum of 500mm diameter at the height of fixing. Trees should not be obviously unstable or badly rotted. The timber and bark at the point of fixing should be sound.

Position of Boxes on Trees

Boxes should be mounted on tree trunks, rather than on boughs or branches. The mounting location should not be heavily shaded. Boxes should be mounted vertically on the tree. Where applicable, the bat boxes should utilise straps rather than nails to avoid damaging trees.

Bat boxes should be mounted a minimum of 3m from the ground, and ideally placed in clusters of three.

The entrance to the box should be clear of obstructions and obstacles in the flight-path towards it. An 'open airspace' of about 3m square should be preserved in front of and below the entrance, and elsewhere any overhanging branches should be at least 1m away.

The mounting location should be readily and safely accessible by ladder, but not accessible by someone climbing up the trunk or onto an adjacent tree or wall etc.

Some lower branches may need to be trimmed below the box to remove ready handholds or footholds for would-be tree-climbers (as well as any small branches crowding the entrance).

As far as possible, boxes should be placed in locations which are not conspicuous from the ground, so as not to attract unwanted attention from passers-by. This objective is assisted by selecting locations which are not visible/accessible from public footpaths, byways etc.

Double Roost Panel

An internal double front panel creates roosting opportunities for crevice-inhabiting bats such as common and soprano pipistrelles.

Bat Box Availability

The 2F bat box is available from a number of suppliers including Jacobi Jayne (www.jacobijayne.com), NHBS (www.nhbs.com) where it retails at approximately £35.95+VAT.

Appendix 8: Swallow Nesting Provision

james&nicholas

2.0 GENERAL ARRANGEMENT

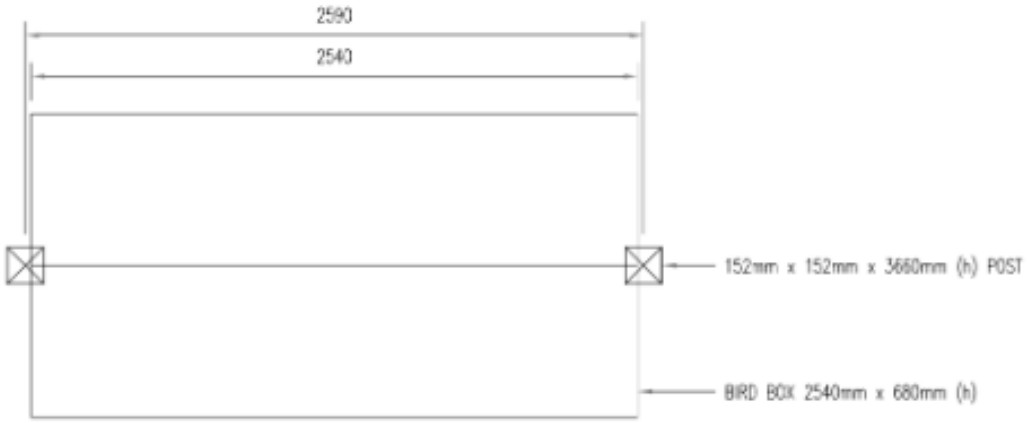


Figure 1: General Arrangement Plan

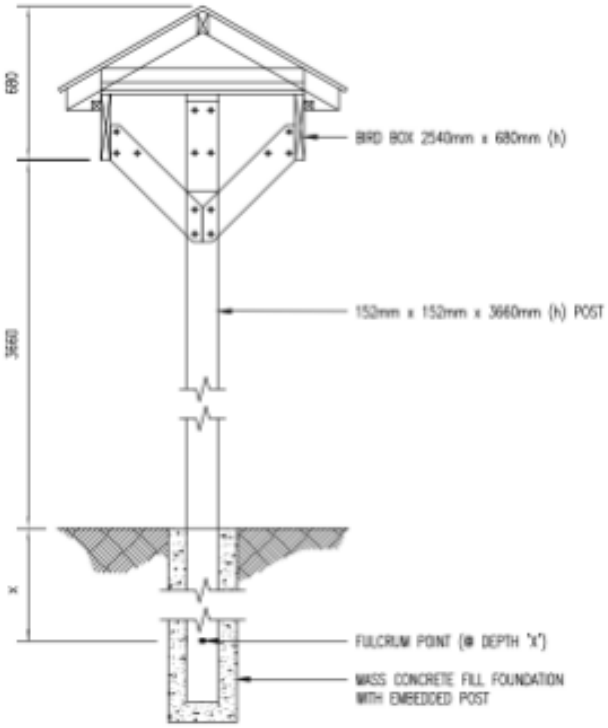


Figure 2: Side Elevation

Foundation Design, Swallow Shelter,
Llantrisant Health Park, TSF Contracts
Ref: 25.19 • Issue: 1 • February 2025

No. 10 Schwegler Swallow Nest

It is important that swallows have access to the nest during the breeding period. Swallows can occupy the nests as soon as they return in March/ April from their winter quarters in Africa.

Positioning: Distance between top of nest and ceiling should be at least 6 cm but ideally not more than 8cm.
Although Barn Swallows are sociable birds, the nests should not be placed directly adjacent to one another but at intervals of approximately 1 m.
Site: Inside buildings of all kinds, porches, livestock sheds, barns, sewage works, etc. Always ensure unobstructed access through open windows and skylights. A distance of at least 6cm is required between the top of the nest and the roof or ceiling. Multiple nests should not be placed at less than 1m intervals.
Maintenance: Cleaning of the bowl is recommended, although not strictly necessary.
Material: Woodcrete nesting bowl made of wood-concrete and wooden panel of formaldehyde-free chipboard.
Height: 110mm
Length: 250mm

Depth: 140mm
Weight: 1kg approx.

Provision of Roughwood Timber

Alternatively, roughwood timber could be installed towards the top of the walls with the top of the timber between 6 and 8cm from the ceiling which could be utilised by swallows for building their own nests.

In this photo a swallow has chosen to build its nest in this way.

Appendix 9: Swift Nest Box

Schwegler No 17 Triple Cavity Swift Box

Code: 002098D

This nest box is designed by Schwegler for swifts and constructed from plant-fibre based material to mimic their natural nest sites. The No 17 Triple Cavity can accommodate 3 pairs of swifts, assisting the rapid formation of colonies. It should be sited 6-7m above the ground, near the roof of a building or on a steep rock face.

Positioning: Under or close to roofs, or on a rock face, at least 5m from the ground. Ensure unobstructed access for birds.
Suitable for: Common
Material: Vegetable fibre material (asbestos-free)
Height: 150mm
Width: 900mm
Depth: 150mm
Weight: 7kg

Appendix 10: Vivara Barcelona WoodStone Open Nest Box

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

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

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

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

Bird Box Availability

The bird box is available from NHBS (www.nhbs.com) where it retails at approximately £22.99 including VAT.