Llantrisant Health Park

Bat Activity Survey Report

March 2025

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Llantrisant Health Park Bat Activity Survey Report				
Revision	Date	Prepared by	Checked by	Verified by
1.0	31 March 2025	Erin Lightbody Assistant Ecologist	Charlotte Ingram Assistant Ecologist	Paul Hudson MCIEEM Principal Ecologist

Summary

Site Location	This report presents the findings of a bat survey of Llantrisant Health Park, located at Ely Meadow, Talbot Green, Llantrisant, CF72 8XL (Ordnance Survey Grid Reference: ST 0362 8357).
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.
Survey Methodology: Bats	Bat activity surveys comprised two elements: • Three night-time walkover surveys; and • A total of 24 days of static monitoring, undertaken in May 2024 to October 2024 (eight nights on each occasion).
Bat Survey Results	In total, six species of bat were recorded during the transect surveys, common pipistrelle, soprano pipistrelle, noctule, a Myotis species, brown long-eared and lesser horseshoe. Levels of bat activity across the site were generally moderate. The majority of the activity was observed in the scrub and woodland habitats bordering the site to the north, south and west.
Predicted Impacts on Bats	Provided the measures detailed in Section 6 are implemented, no negative impacts are anticipated.
Mitigation Strategy	Mitigation focuses on maintaining a dark corridor along the woodland and scrub habitats forming much of the site boundary and also includes: • A sensitive lighting strategy; • Provision of bat boxes; and • Hedgerow/scrub management.

1. Introduction

1.1. Brief

Acer Ecology Ltd was commissioned by Archus on behalf of Cwm Taf Morgannwg University Health Board to conduct a bat survey of land at Llantrisant Health Park, located at Ely Meadow, Talbot Grn, Ynysmaerdy, Pontyclun, CF72 8XL (Ordnance Survey Grid Reference centred at: ST 0362 8357). The area proposed for development is referred to as the 'site' throughout this report and lies within the boundary of Rhondda Cynon Taff Borough Council.

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. There are car parks 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. The town of Talbot Green is located to the south-east of the site. The site has flat topography and sits approximately 60m above sea level

The location of the Llantrisant Health Park 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. It is anticipated that a small amount of vegetation will need to be cleared within the site to facilitate the proposed works; however, the full extent of the required clearance remains unknown at the time of writing.

1.4. Legislation

Bats

All UK species of bat are designated as 'European Protected Species'. Their breeding sites or resting places[1] (roosts) are fully protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017.

Works affecting bats are subject to licensing procedures by Natural Resources Wales (NRW). The legal protection and licensing procedures are summarised in Appendix 2.

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

1.5. Scope of the Study

The survey comprised the following:

- Three transect surveys; and
- Three sessions of passive static bat detector recording, using one detector.

1.6. Reporting

This report aims to:

- Outline the methodology used during the survey;
- Identify what bat species (if any) are using the site and identify any commuting routes and key foraging areas used by them;
- Provide an interpretation of the findings, in relation to the potential impacts of the development;
- Specify the legal and policy constraints which may affect the development; and
- Provide an indication of potential licensing requirements and mitigation, compensation and enhancement measures that may be required.

2. Methods

2.1. Field Study

Night-time Walkover and Static Detector Survey

Three separate bat activity night-time walkover surveys were conducted following methodology detailed in Sections 8.2.14-8.2.28 of Bat Survey Guidelines for Professional Ecologists (Collins, 2024).

The first on 24th May 2024 by Rebecca Corley and Charlotte Ingram; the second on 27th June 2024 by Kira Everett and Kelsey Marshall; and the third on 30th October 2024 by Sonia Lemon and Erin Lightbody. Each survey began at sunset with the first half hour in a static position. A walked transect then took place until two hours after sunset. In line with best practice guidance, night-time walkover surveys were carried out on nights when the minimum temperature at sunset was above 10°C.

The transects were walked at a slow pace along a set route as shown on Plan 2. General bat activity was recorded whilst walking between each monitoring point. The bat detectors were set using the PARS editor software so that the longest recording was twenty seconds. A bat being recorded continuously for 21 seconds would register as two different recordings.

In addition, one Anabat Express Chorus static detector was deployed in the south-east of the site, as shown on Plan 2. The detectors were set to record for a total of seven nights. Bat activity between dusk and dawn was recorded. Analysis of the bat survey data was made using the Analook Insight analysis software to determine the number of bat passes recorded[2]. The detectors were sited in order the achieve the best results, based on field observations whereby it was placed within a tree along the bordering treeline of the site.

The north-east site boundary had no suitable locations to deploy a detector.

Data Analysis

The sound files recorded by the static detectors were analysed using Analook call analysis software and were identified to species (or to genus in the case of the *Myotis* spp.) level. The number of bat passes of each species and the time at which they were recorded was noted and plotted in Tables 3A and 3B to display the total number of bat passes in each survey period.

The sonograms from the night-time bat walkover surveys were analysed using batexplorer software.

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

2.2. Constraints

General Temporal Constraints

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

3. Results

3.1. Night-time Walkover Surveys

The results of the night-time walkover surveys are provided in the table below.

Table 1: Summary of Transect Surveys

Date	Start Time	End Time	Wind[3]	Air Temp. (°C)	Cloud cover	Rain
24th May 2024	20:30	22:30	2	13	5/8	0
High levels of common pipistrelle (64 echolocations and three social calls) and soprano pipistrelle (63 echolocations and three social calls) and noctule (8 echolocation calls) were recorded.						
27th June 2024	21:24	23:24	6	14	8/8	0
Low levels of common pipistrelle (four echolocations) and soprano pipistrelle (eight echolocations) and noctule (2 echolocations) were recorded.						
30th October 2024	16:50	18:50	1	13	6/8	0
Very low levels of soprano pipistrelle activity (one echolocation and one social call) was recorded.						

3.1.1. Static Detector Surveys

A summary of the results of the static detector surveys is provided in the table below:

Table 2: Total Number of Bat Passes for Each Species in Each Survey Period

Species	Total Number of Passes (May 2024)	Average Number of Calls Per Night in May	Total Number of Passes (June 2024)	Average Number of Calls Per Night in June	Total Number of Passes (October 2024)	Average Number of Calls Per Night in October
Common pipistrelle	573	71.63	88	11	42	5.25
Soprano pipistrelle	70	8.75	16	2	21	2.63
Noctule	30	3.75	20	2.5	15	1.88
Brown long-eared	5	0.625	2	0.25		
Myotis species	2	0.25				
Lesser horseshoe	6	0.75	4	0.5		
Total Bat Passes Per Survey Period	**686**	**85.75**	**130**	**16.25**	**78**	**9.75**

[3] Estimated on site using the Beaufort scale.

4. Evaluation

In total, six species of bat were recorded during the transect surveys, common pipistrelle, soprano pipistrelle, noctule, a Myotis species, brown long-eared and lesser horseshoe.

4.1. Night-time Walkover Surveys

Several key observations were made during the night-time walkover surveys:

- Bat activity was high during the night-time walkover in May, but low throughout the other two night-time walkover surveys;
- Bat activity was greatest along the south, south-west and north-west site boundaries and in close proximity to the recommended dark corridor (Plan 3);
- Common and soprano pipistrelles were the most frequently recorded species throughout the night-time walkover surveys;
- There was highest levels of artificial light at night along the west of this site; and
- Human disturbance appeared to be negligible on the site.

4.2. Static Detector Survey

Several observations were made during the static detector surveys:

- Bat activity was high throughout the monitoring period in May 2024, activity then decreased during the following two static monitoring periods (June and October);
- Common and soprano pipistrelles were the most frequently recorded species, being most consistently recorded across all time periods; and
- No other clear patterns of use over time were noted.

5. Impact Assessment

The potential impacts are based on the development proposals at the time of writing. This impact assessment must be reviewed and amended as necessary in light of any alterations to the development proposals. Suitable avoidance, mitigation compensation and enhancement measures are subsequently described in Section 6 to minimise and avoid the impacts of the kind mentioned below.

5.1. Direct Impacts

No direct impacts are anticipated as a result of the works.

5.2. Indirect Impacts

Hedgerow and Scrub Clearance and Habitat Loss

A minimal amount of vegetation clearance is anticipated to be required to facilitate the development, however the exact extent of clearance required is unknown at the time of writing. Vegetation clearance has some limited potential to impact on commuting and foraging routes, however, this impact is expected to be negligible given the high quality of the surrounding landscape. The site is bordered by woodland, which provides alternative foraging and commuting opportunities for bats. Additionally, the retention of boundary vegetation and the implementation of a sensitive lighting strategy will help to minimise any disruption to bat activity.

The majority of the scrub and woodland habitats that form the boundary vegetation within the site will be retained and therefore the commuting and foraging areas bordering the site will be largely conserved maintained and not affected by the proposed development.

Excessive clearance of scrub could reduce its value for invertebrates, nesting birds, and foraging bats. To minimise ecological impact, scrub clearance should be kept to a minimum, with detailed recommendations provided in Section 6.

Bat activity recorded on site was primarily concentrated along the woodland edges to the north and south, with few bat passes detected in the central part of the site. This suggests that the core of the site does not serve as a key foraging area for bats. As a result, development in this area is unlikely to significantly impact local bat populations. However, to further support bat foraging and commuting, habitat connectivity should be maintained through the retention of boundary vegetation and the implementation of appropriate lighting strategy.

Artificial Lighting

The main potential impact to bats from the proposed development is the likely increase in artificial lighting at night. Most UK bat species are sensitive to light pollution, which can act as a barrier to roost access, foraging, and dispersal (Stone, 2013). Lesser horseshoe bats (Schofield, 2008), long-eared bats, and some Myotis species, such as Natterer's bat, are particularly affected due to their reliance on darker environments for navigation and hunting.

Artificial lighting can disrupt natural bat behaviour by altering flight paths, deterring species from using established commuting corridors, and reducing the availability of nocturnal insect prey. The site's boundary vegetation, particularly to the north, south, and west, is actively used as commuting and foraging habitat, mainly by pipistrelle bats. Increased lighting in these areas could fragment the habitat and force bats to take longer or less optimal routes, increasing energy expenditure and predation risk.

There is existing artificial lighting near the site entrance in the north-eastern portion of the site. If additional lighting is introduced without mitigation, it could further contribute to habitat fragmentation, particularly if it spills onto boundary vegetation or key flight paths. To minimise these impacts, a sensitive lighting strategy should be implemented, ensuring that light levels are kept as low as possible in bat-sensitive areas. This could include the use of directional, low-intensity, warm-spectrum LED lighting, and shielding to prevent unnecessary light spill onto retained vegetation.

A sensitive lighting strategy must be formulated and incorporated into the architectural plans, as detailed in Section 6.

6. Required Actions

6.1. Mitigation Strategy

The following recommendations have been developed to minimise potential impacts on bats.

6.1.1. Lighting

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 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.

Street Lighting

Any newly installed lights at the perimeter of the site will ideally be low wattage (i.e. 11 watts), glass glazed, compact fluorescent light sources fitted with appropriate UV filters. Hoods/ shields or cowls will be installed to prevent upwards and horizontal light spill onto the peripheral areas. White lighting sources including mercury or metal halide, CDO and CPO which have a significant effect on bats will be avoided, and instead low intensity, low pressure sodium or warm light LED light bulbs will be used.

Street lighting will be focussed away from any retained habitats, to maintain a dark corridor. The lower the level any street lighting is installed, the better. Consideration will be given to the use of ground level, bollard and other low-level lighting to eliminate the need for 'overhead' lighting which is more disruptive to wildlife.

See Plan 3 for the proposed dark corridor.

6.1.2. Installation of Bat Boxes

In advance of the works, ten Schwegler 2F general bat boxes(or suitable alternative) will be erected on suitable, large trees[4] 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.

6.1.3. Hedgerow Enhancement

The hedgerows within the car parking areas in the northern and eastern sections of the site will be enhanced by replacing non-native species with native species of local provenance. This replacement will improve foraging opportunities for bats by providing a richer diversity of invertebrates, a key food source. Additionally, native plants will support a wider range of pollinators and other invertebrates, indirectly benefiting bats by increasing their prey availability. Native hedgerows will also enhance habitat connectivity, creating better commuting corridors and potential roosting opportunities in adjacent trees or structures. Overall, this will improve the site's ecological suitability for supporting a variety of bat species, as well as other wildlife.

6.2. Longevity of Report

If development works do not begin within two years of the date of this report, an update survey is likely to be required in accordance with guidance from Natural Resources Wales (NRW)[5] and BS 42020:2013[6], to determine if conditions have changed since those described in this report.

[4] 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*).

[5] 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.

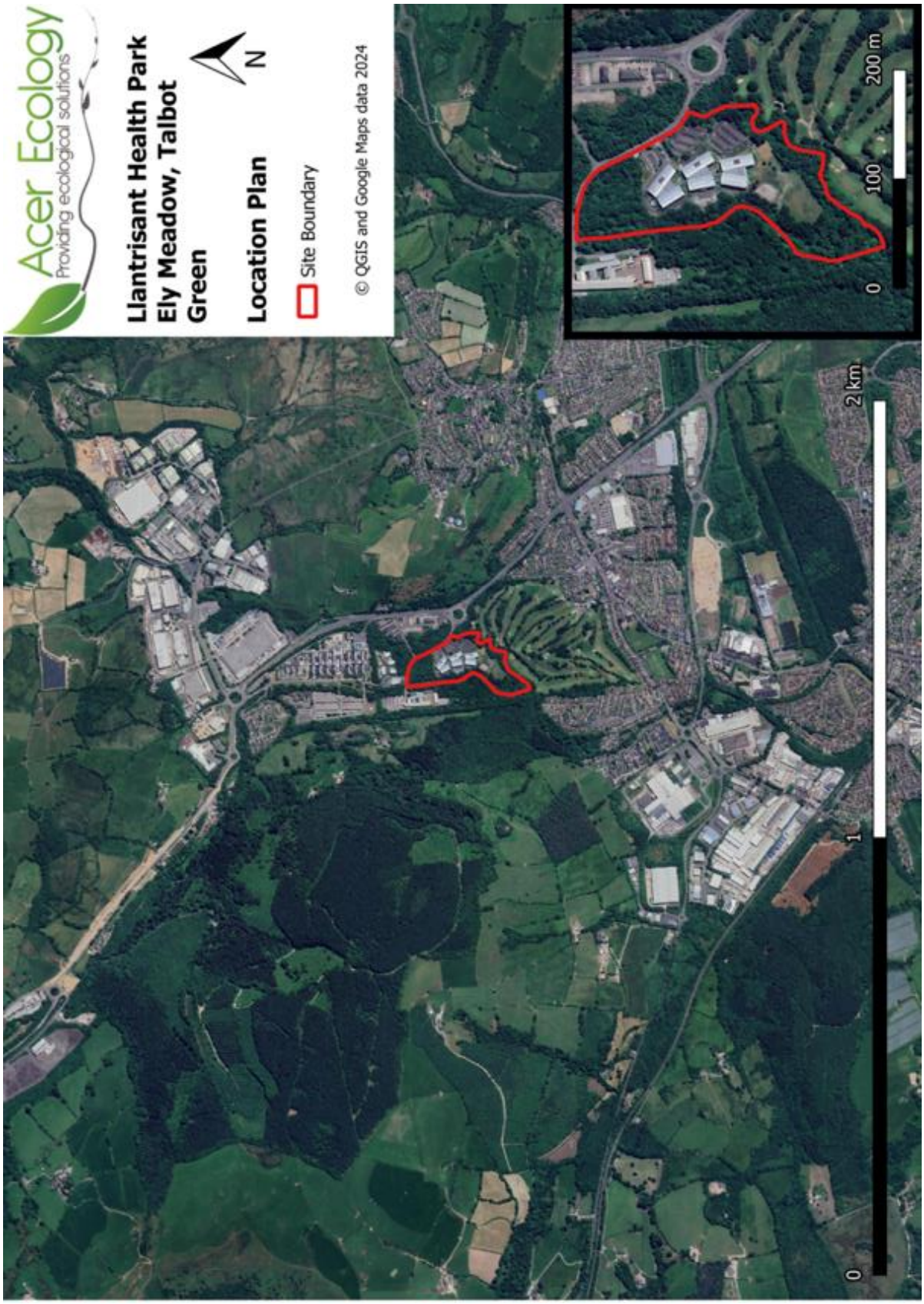
[6] As set out in Section 6.2.1, point 7 which states that ecological information should not normally be more than two/three years old, or as stipulated in good practice guidance).

7. References and Bibliography

Collins, J. (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edition).* The Bat Conservation Trust, London.

Stone, E.L. (2013) *Bats and lighting: Overview of current evidence and mitigation guidance.* University of Bristol. Available online at http://www.batsandlighting.co.uk/downloads/lightingdoc.pdf

Plan 1: Location Plan



Plan 2: Walked Night-time Walkover Route & Static Detector Locations

Plan 3: Proposed Dark Corridor

Appendix 1: Guidelines for Assessing Bat Habitat Suitability

Suitability	Commuting and Foraging Habitat
Negligible	Negligible habitat features on-site likely to be used by commuting and foraging bats.
Low	Commuting Habitat Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Foraging 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	Commuting Habitat 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. Foraging Habitat Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Commuting 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. Foraging Habitat 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. Proximity to Known Bat Roosts Site is close to and connected to known roosts.

Appendix 2: Recommended Survey Effort 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 3: Surveyor Experience

Rebecca Corley - Rebecca graduated with a degree in Biological Science from the University of Birmingham and an MSc in Global Ecology and Conservation from Cardiff University. Rebecca is currently in her third season of bat surveying, working as an Ecologist and receiving training from Acer Ecology. She is listed as an accredited agent on Paul Hudson's bat licence (S091671-1). Further details of her qualifications and experience can be found at: https://www.linkedin.com/in/rebecca-corley-b33b61138/.

Charlotte Ingram – Charlotte graduated from the University of South Wales with a degree in International Wildlife Biology. She is currently working for Acer Ecology as an Assistant Ecologist, completing survey season in 2023 and 2024. Charlotte is listed as an accredited agent on Paul Hudson's licence (S094527).

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

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

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.

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.