wardell-armstrong.com

ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
INFRASTRUCTURE AND UTILITIES
LAND AND PROPERTY
MINING AND MINERAL PROCESSING
MINERAL ESTATES
WASTE RESOURCE MANAGEMENT

AECOM

PLASYFELIN PRIMARY SCHOOL

BAT ACTIVITY SURVEY REPORT

NOVEMBER 2024

wardell armstrong | PART OF SLR

Wardell Armstrong
Tudor House, 16 Cathedral Road, Cardiff, CF11 9LJ, United Kingdom
Telephone: +44 (0)29 2072 9191 www.wardell-armstrong.com

DATE ISSUED:	**NOVEMBER 2024**
JOB NUMBER:	**CA13112**
REPORT NUMBER:	**001**
VERSION:	**V1.0**
STATUS:	**Final**

AECOM

PLASYFELIN PRIMARY SCHOOL

BAT ACTIVITY SURVEY REPORT

NOVEMBER 2024

PREPARED BY:

Alba Saur-Pacheco Ecologist

REVIEWED & APPROVED BY:

Sally Caveill Technical Director (Ecology)

CONTENTS

APPENDICES

DRAWINGS	TITLE	SCALE
CA13112-001	Site Location Plan	1:5,000@A3
CA13112-004	Night-time Bat Walkover Survey Results – Spring	1:1,000@A3
CA13112-005	Night-time Bat Walkover Survey Results – Summer	1:1,000@A3
CA13112-006	Night-time Bat Walkover Survey Results – Autumn	1:1,000@A3
CA13112-007	Automated Detector Location Plan	1:1,000@A3

EXECUTIVE SUMMARY

Wardell Armstrong LLP (WA) was commissioned by AECOM to undertake bat activity surveys in support of the proposed redevelopment of the Plasyfelin Primary School site, centred on approximate National Grid Reference ST 15258 87754.

The Preliminary Ecological Appraisal Report prepared by AECOM, identified the site to be of 'moderate' suitability for foraging and commuting bats.

Bat activity surveys were undertaken at the site by WA in 2024, following the requirements for a site of 'moderate' suitability under the Bat Survey Guidelines (BCT, 2023). These comprised night-time bat walkover (NBW) surveys and automated detector surveys.

At least five species out of the 17 resident breeding bat species were recorded foraging and/or commuting during the 2024 bat activity surveys. Of these, three species (common pipistrelle, soprano pipistrelle and *Myotis sp.*) were identified during the NBW surveys, and all five species (common pipistrelle, soprano pipistrelle, *Myotis sp.,* noctule and serotine) were identified during the automated detector surveys.

During the NBW surveys, common pipistrelle was the most frequently recorded, followed by soprano pipistrelle. *Myotis sp.* was only identified during analysis of recordings. Activity levels were highest in the northeastern corner of the site, near the school pond and the woodlands adjacent to the site.

During the automated detector surveys, a total of 24,257 bat passes were recorded from May to October 2024. Common pipistrelle was the most frequently recorded species, accounting for 82% of all passes recorded, followed by soprano pipistrelle accounting for 17%. Other recorded species cumulatively accounted for 2% of passes recorded, including *Myotis sp.,* noctule and serotine. The detectors were located where bat activity was highest, on the northern and eastern edges of the site, explaining the high number of bat passes recorded.

The survey results identify that there is suitable foraging and commuting habitat for bats on site, particularly within the northeastern area of the site.

1 INTRODUCTION

1.1 Terms of Reference

1.1.1 Wardell Armstrong LLP (WA) was commissioned by AECOM to undertake bat activity surveys in support of the proposed redevelopment of the Plasyfelin Primary School site, centred on approximate National Grid Reference ST 15258 87754.

1.2 Site Context

1.2.1 The Plasyfelin Primary School site is located on Caenant Road, Caerphilly, as shown on Drawing Number CA13112-001 (Site Location Plan).

1.2.2 The site is dominated by school buildings, hardstanding in the form of parking spaces and hard play surfaces, and amenity grassland used primarily for recreational activities. There are two areas of broadleaved semi-natural woodland, lines of trees, and scattered trees and scrub. Also present are areas of semi-improved grassland, standing water, ephemeral-short perennial vegetation, intact species-poor hedges, bare ground, and artificial surfaces (astroturf, wet pour and wooden decking). The site boundary is marked by fences and walls. The Nant yr Aber River connects the site to a series of broadleaved woodland areas.

1.2.3 Caerphilly town makes up the surrounding wider area, which is predominantly residential, with scattered areas of woodland and recreational fields. Caerphilly Castle is approximately 500m southeast of the site.

1.3 Description of Development

1.3.1 The proposed development comprises the replacement of the existing school buildings with one main building as well as creating new recreational areas and a hardstanding carpark.

1.4 Background

1.4.1 An assessment of the habitats on site for foraging and commuting bats was conducted by AECOM on 25th and 26th September 2023, the results of which are present in the Preliminary Ecological Appraisal (PEA) and BREEAM report for this site (AECOM, 2023).

1.4.2 The desk study undertaken as part of the PEA identified 70 records of bat activity within 2km of the site. This included the following species:

- Brown long-eared *Plecotus auritus;*
- Common pipistrelle *Pipistrellus pipistrellus;*

- Daubenton's *Myotis daubentonii;*
- Lesser horseshoe *Rhinolophus hipposideros;*
- Myotis species *Myotis spp.;*
- Natterer's *Myotis nattereri;*
- Noctule *Nyctalus noctula;* and
- Soprano pipistrelle *Pipistrellus pygmaeus.*

1.4.3 The desk study also identified 16 records of bat roosts within 2km of the site. This includes but is not limited to:

- Common pipistrelle *Pipistrellus pipistrellus* roost 0.2km east of the site;
- Common pipistrelle maternity roost 1.3km southeast of the site;
- Daubenton's *Myotis daubentonii* roost 0.4km east from the site;
- Nathusius' pipistrelle *Pipistrellus nathusii* roost 0.5km south from the site;
- Brown long-eared *Plecotus auritus* roost 1.5km south of the site;
- Soprano pipistrelle *Pipistrellus pygmaeus* roost 1.5km south of the site; and
- Greater horseshoe *Rhinolophus ferrumequinum* roost 1.5km south of the site.

1.4.4 The PEA identified the habitats within the site to have 'moderate' suitability for foraging and commuting bats.

1.5 Legislative Framework

1.5.1 All UK bat species are protected by legislative framework, a summary of which is provided in Appendix 1.

1.6 Bat Ecology

1.6.1 There are 17 species of bat found breeding in Britain, all of which are insectivorous. These species have different life cycles and strategies but in general each require:

- Hibernation roost sites: sites which in winter have a constant temperature of between 3°C and 7°C e.g. underground sites such as caves, mines and built environments offering similar conditions;
- Nursery sites where females gather in spring/summer to give birth and rear offspring e.g. roof spaces, crevices/hollows in mature trees;

- Roost sites for individual males during spring – autumn e.g. roof spaces and trees; and
- Habitats with numerous insects to feed upon.

1.6.2 Roosting habitat includes buildings and structures, caves and trees and means any structure or place that is used for shelter or protection whether or not bats are present at the time.

1.6.3 Bats also use a variety of habitats for foraging with broad-leaved woodland and water habitats the most favourable. Arable, improved grassland and moorland are less favoured. Within these less favoured landscapes, linear features such as hedgerows, lines of trees and riparian strips are often used by bats as they provide rich food sources, shelter and commuter corridors.

1.7 Report Objective

1.7.1 This report summarises the methodology and results of the bat activity surveys undertaken in 2024.

2 METHODOLOGY

2.1 Activity Surveys

2.1.1 In accordance with the best practice guidelines for sites of 'moderate' suitability, one night-time bat walkover (NBW) survey was undertaken per season i.e., once during spring (April/May), once during summer (June/July/August), and once during autumn (September/October) in appropriate weather conditions for bats. In addition, following these guidelines, two automated/static bat detectors were deployed on site, with data recorded on five consecutive nights per month (May to October) in appropriate weather conditions for bats.

Night-time Bat Walkover (NBW) Surveys

2.1.2 A pre-determined route across the site was walked during each survey which, where access was possible, allowed complete coverage of the site and opportunities for stopping and recording bat behaviour. The survey routes are shown on Drawing Numbers CA13112-004 to 006 (Night-time Bat Walkover Survey Results).

2.1.3 Dates, times, and weather conditions during the surveys are provided in Appendix 2.

2.1.4 Echo Meter Touch (Wildlife Acoustics, Inc., Massachusetts) bat detectors and iPads (Apple Inc., California) or Samsung Galaxy Tablets were used to detect foraging or commuting bats and the built- in Kaleidoscope classifiers were used to assist species identification. Observations of bat behaviour, size and the direction of the flight path were also noted where possible.

Automated Detector Surveys

2.1.5 Two Sound Meter SM4BAT+ Bioacoustics Recorder (Wildlife Acoustics, Inc.) were deployed at the site during each survey. One detector was located along the northern site boundary at approximate National Grid Reference (NGR) ST 15226 87820 (Location 1), and the other was located along the eastern boundary at approximate NGR ST 15320 87776 (Location 2). Both locations can be seen in Drawing Number CA13112-007 (Automated Detector Locations).

2.1.6 Dates of the surveys are provided in Appendix 2.

2.1.7 The detectors were programmed to record ultrasound continuously from 30 minutes before local sunset to 30 minutes after local sunrise for five consecutive nights.

2.1.8 After retrieval of the recording devices the data files were downloaded as Wildlife Acoustic Audio Compression Files (WAC) and converted to Kaleidoscope Pro 4 Output files and analysed using Kaleidoscope Pro 4 analysis software (Wildlife Acoustics, Inc).

2.2 Assessment Limitations

2.2.1 The bat surveys have not attempted to produce a comprehensive list of all bat species and their activities within the site, as any ecological survey will be limited by factors that affect their presence, such as time of year, weather conditions, migration pattern and behaviour. The surveys instead aim to provide a general overview of the range of bat species using the site and to highlight key commuting corridors and pinpoint possible bat roosts.

2.2.2 Species from the genera *Myotis* and *Nyctalus* are difficult to distinguish individual species within the genera from sonogram calls alone. Where an individual species cannot be determined, a genus is recorded.

2.2.3 Echolocation calls of the brown long-eared bats (*Plecotus auritus)* are significantly quieter than many other bat species within this country, therefore this species can be difficult to record and may at times go unrecorded. Similarly, some bats produce louder calls which travel greater distances with less attenuation, as a result louder calls produced at greater distances from the detectors will be recorded (during activity and automated surveys) more readily whereas quieter calls produced from the same location maybe missed which can lead to bias.

2.2.4 During the automated detector survey in June 2024, the SD cards were stolen from the detectors at both locations and therefore, the data for June 2024 was lost. However, given the data recorded across the remaining season, which consists mainly of species that are common and widespread, it is considered that this is not a significant constraint to this survey.

2.2.5 During the automated detector survey in August 2024, the detector at location 1 failed to record and therefore, data is missing for this location. This is not deemed a significant constraint, as the detector at location 2 was still able to record and given the proximity of both detectors, the difference in activity or species diversity would not be significant.

2.3 Quality Assurance & Environmental Management

2.3.1 The surveys and assessments have been overseen by and the report checked and verified by a full member of the Chartered Institute of Ecology and Environmental

Management (CIEEM) who is bound by its code of professional conduct. All surveys and assessments have been undertaken with reference to the recommendations given in British Standard BS 42020, and as stated within specialist guidance, as appropriate and referenced separately.

3 RESULTS

3.1 Summary of Findings

3.1.1 During the 2024 bat activity surveys (night-time bat walkovers and automated detectors) at least 5 of the resident breeding 17 bat species were recorded, these were:

- Common pipistrelle;
- Soprano pipistrelle;
- Myotis spp.
- Noctule
- Serotine

3.1.2 Species present during the 2024 bat activity surveys per month are summarised in Table 1 below.

Table 1: Species present during the 2024 bat activity surveys per month on the NBW and automated detectors surveys. Ticks (✓) represent species recorded that month, and (-) represents species which were not recorded.

Species	Month									
	Spring		Summer				Autumn			
	May		July		August		September		October	
	Walked Transect	Automated Detector	Walked Transect	Automated Detector	Walked Transect	Automated Detector	Walked Transect	Automated Detector	Walked Transect	Automated Detector
Common Pipistrelle	✓	✓	✓	✓		✓	✓	✓		✓
Soprano Pipistrelle	✓	✓	✓	✓		✓	✓	✓		✓
Nyctalus sp.	-	-	-	-		-	-	✓		✓
Myotis sp.	-	✓	✓	✓		✓	-	✓		✓
Serotine	-	✓	-	-		-	-	-		-

3.2 Night-time Bat Walkover Survey

3.2.1 The dates, times and weather conditions of the NBW surveys are provided in Appendix 2. Locations of bats recorded during the NBW surveys are shown on Drawing Numbers CA13112-004 to 006 (Night-time Bat Walkover Survey Results).

3.2.2 Species present during the 2024 NBW surveys per month are summarised in Table 2 below.

Table 2. Species present during the 2024 night-time bat walkover surveys. Ticks (✓) represent species recorded that season, and (-) represent species that were not recorded.

Species	Spring 2024	Summer 2024	Autumn 2024
Common pipistrelle ***Pipistrellus pipistrellus***	✓	✓	✓
Soprano pipistrelle ***Pipistrellus pygmaeus***	✓	✓	✓
Noctule ***Nyctalus noctula***	-	-	-
Serotine ***Eptesicus serotinus***	-	-	-
Myotis spp.	-	✓	-

3.2.3 During the 2024 NBW surveys, a high level of activity was recorded, predominantly within the northeastern area of the site. It is considered that this part of the site is most optimal for foraging and commuting bats due to the proximity to riparian woodland and the school pond, which is likely to contain a high number of invertebrates.

3.2.4 Common pipistrelles were most frequently recorded during each survey. Multiple individuals were recorded at once, while exhibiting social calls and feeding buzzes.

3.2.5 Soprano pipistrelles were also frequently recorded, but in lower numbers.

3.2.6 A *Myotis sp*. was recorded during the analysis of the July 2024 NBW survey data, but this was not picked up during the survey and so is not present on Drawing Number CA13112-005 (Night-time Bat Walkover Survey Results – Summer).

3.3 Automated Detector Survey

3.3.1 The results from the automated detector surveys at each location, and the total results from all locations combined, separate and monthly, is shown below in Table 3.

3.3.2 Location 1 and 2 are shown on Drawing Number CA13112-007 (Automated Detector Locations).

Table 3: Total Passes Recorded during the Automated Detector Surveys							
Locations	**Month**	**Species**					**Total Passes**
		Common Pipistrelle	**Soprano Pipistrelle**	***Nyctalus noctula***	***Myotis* sp.**	**Serotine**	
		Total Passes per Automated Detector					
Location 1	**May**	5533	599	0	17	1	**6150**
Location 2		2687	158	0	30	0	**2875**
Location 1	**July**	1273	30	0	6	0	**1309**
Location 2		1890	544	0	9	0	**2443**
Location 1	**August**						
Location 2		3921	89	0	29	0	**4039**
Location 1	**September**	1710	1786	0	102	0	**3598**
Location 2		1196	82	2	51	0	**1331**
Location 1	**October**	632	108	3	4	0	**747**
Location 2		1143	611	0	11	0	**1765**
Total Passes at both locations		**19985**	**4007**	**5**	**259**	**1**	**24257**

3.3.3 A total of 24,257 bat passes were recorded during the automated detector surveys from May to October 2024, inclusive. Location 1 had most bat activity, comprising 58% of all total passes, while location 2 comprised 42%.However, this excludes August 2024 for which location 1 is missing.

3.3.4 Both areas can be considered important for foraging and commuting bats due to the high level of bat activity recorded at both locations.

3.3.5 Location 1 was situated on the edge of a woodland, which provides potential roosting habitat for bats, as well as commuting and foraging habitat.

3.3.6 Location 2 is adjacent to a riparian woodland, which contains suitable foraging habitat and a dark corridor suitable for commuting bats.

3.3.7 Both automated detector locations are located on either side of the school pond, which is likely to contain invertebrates, and on the edge of the school playing field providing suitable foraging habitat as well as suitable commuting habitat.

3.4 Species

3.4.1 Overall, the diversity of bat species on site was found to be moderate; supporting at least 5 of the 17 British resident species.

Pipistrelle species

3.4.2 Common pipistrelle was the most frequently recorded species within the site, with soprano pipistrelle the second most frequent. This was consistent throughout both NBW surveys and automated detector surveys.

3.4.3 Both species were recorded during every NBW survey and automated detector survey, at both locations.

3.4.4 During the automated detector surveys, common pipistrelle comprised approximately 82% of all bat passes, and soprano pipistrelle comprised approximately 17%.

Myotis species

3.4.5 *Myotis sp.* could be any of five species of bat; the ecology and conservation value of this species group is similar, but the species can be difficult to distinguish through acoustic analysis, therefore identification of *Myotis sp*. calls to species level is beyond the scope of this report.

3.4.6 *Myotis sp*. comprised 1% of all bat passes recorded during the automated detector surveys and was recorded during every month, at both detector locations (Location 1 and 2).

3.4.7 *Myotis sp*. was only recorded during the summer NBW survey.

Noctule

3.4.8 Noctule made up 0.02% of all bat passes recorded during the automated detector surveys. It was only recorded at Location 2 in September 2024, and at Location 1 in October 2024.

3.4.9 Noctule was not recorded during the NBW surveys.

Serotine

3.4.10 Serotine was only recorded once during the automated detector surveys, at Location 1 in May 2024. Meaning it only made up 0.004% of all bat passes recorded.

3.4.11 Serotine was not recorded during the NBW surveys.

4 CONCLUSION AND RECOMMENDATIONS

4.1 Conclusion

4.1.1 The survey results suggest that there are reasonably high levels of forging activity on site, but this is largely from common and widespread species (common pipistrelle and soprano pipistrelle) and is localised predominantly along the northeastern area of the site.

4.1.2 A broader range of less common and widespread species (*Myotis sp.* and serotine) utilise the site for foraging and commuting, but in considerably lower numbers than the aforementioned species.

4.1.3 The key foraging and commuting routes can be seen on Drawing Numbers CA13112-004 to 006 (Night-time Bat Walkover Survey Results).

4.1.4 There are trees with roosting potential present on site (see AECOM PEA and BREEAM report), and suitable roosting habitat within the woodlands adjacent to and on site. Therefore, the site could be used for foraging and for commuting between roosts.

4.2 Recommendations

4.2.1 It is recommended that impacts of the proposed development on bats is fully assessed within an Ecological Impact Assessment.

4.2.2 It is recommended that suitable habitats for foraging and commuting bats are retained and protected, where possible. This includes the woodland habitat in the southeast corner of site, the grassland along the northern and eastern edge of site, and the pond in the northeast corner of the site.

4.2.3 Any foraging / commuting bats utilising the site could be disturbed by the construction works should these works be undertaken at night through noise and light disturbance. It is therefore recommended that night working is avoided and lighting, if required, is directed away from woodlands on site and adjacent to site.

4.2.4 Foraging and commuting bats could be affected by an increase in light once the development is complete. Therefore, the location of bat foraging and commuting routes should be considered within the design of the development.

4.2.5 Should lighting be permanently introduced as part of the development, it is recommended that the lighting is designed with input from an ecologist and with reference to the IJP and BCT Guidelines on Bats and Artificial Lighting (IJP & BCT, 2018).

APPENDICES

Appendix 1

Summary of Protection Legislation

Appendix 1: Summary of Protection Legislation

Protection of Bats

1.1.1 All UK bat species are listed under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) whereby legal protection is retained under domestic law. As such bats receive protection under Part 3 of the act, which makes it an offence to:

- Deliberately capture, injure or kill a bat;
- Deliberately disturb a bat; and
- Damage or destroy a breeding site or resting place of a bat.

Under the Regulations, disturbance of bats includes any action which is likely to:

- Impair their ability to survive, breed or reproduce, to rear or nurture their young to hibernate or migrate; and
- Significantly affect the local distribution or abundance of the species in question.

1.1.2 Further, where significant assemblages of Annex II bats are identified as listed by the Habitats Directive, the appropriate authority can designate as a Special Area of Conservation sites of national importance. This is based upon their natural range and the areas critical for their life and reproduction. However, priority of designation will be based on the importance of the sites for the maintenance/restoration of favourable conservation status and how the site would link with the National Site Network.

1.1.3 In view of any site designated as a Special Area of Conservation prior to or after the exit from the EU, a Habitat Regulation Assessment of projects and plans would be required where screening indicates potential impacts.

1.1.4 The Conservation of Habitats and Species Regulations 2017 (as amended) stems from signatory to pan-European and global conventions to halt the decline in biodiversity and restrictions on species migration, notably the Berne and Bonn Conventions. The outcome of these conventions was taken further by the European Union via the Habitats Directive (prior to the UK exit). Further, the legislation helps to achieve the aims of the Convention on Biological Diversity to which the UK is a signatory.

1.1.5 European Protected Species licences can be granted by Natural Resources Wales in respect of development to permit activities that would otherwise be unlawful and as set out in the Conservation of Habitats and Species Regulations 2017 (as amended),

providing that 'favourable conservation status' is maintained and there is "no satisfactory alternative".

1.1.6 All UK bat species are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and receive further partial protection under Section 9 of this legislation. This includes making it an offence to:

- Intentionally or recklessly obstruct access to any place that a bat uses for shelter or protection; and
- Intentionally or recklessly disturb any bat whilst it is occupying a structure or place that it uses for shelter or protection.

1.1.7 Eight bat species are also considered species of principal importance in Wales under Section 7 of the Environment (Wales) Act 2016. This stems from a review of the now superseded UK Biodiversity Action Plan and the continued need for global action on conserving biodiversity as result of the Convention on Biological Diversity. As a result, the Welsh Government (and therefore public authorities) have a duty to conserve biodiversity in relation to those bat species listed. The eight bat species covered under Section 7 of the Environment (Wales) Act 2016 are:

- Barbastelle (*Barbastella barbastellus*);
- Bechstein's (*Myotis bechsteinii*);
- Brown long-eared (*Plecotus auritus*);
- Common pipistrelle (*Pipistrellus pipistrellus*);
- Greater horseshoe (*Rhinolophus ferrumequinum*);
- Lesser horseshoe (*Rhinolophus hipposideros*);
- Noctule (*Nyctalus noctula*); and
- Soprano Pipistrelle (*Pipistrellus pygmaeus*).

1.1.8 The UK Biodiversity Action Plan was superseded by 'The UK Post-2010 Biodiversity Framework' which was published in July 2012, to achieve the European Union wide biodiversity strategy (prior to EU exit). Work under the UK Post-2010 Biodiversity Framework is now focussed at the country level as a result of devolution. The document covers the 5 strategic goals and 20 new global 'Aichi' targets stemming from the parties of the Convention on Biological Diversity. The species of principal

importance listed under Section 7 of the Environment (Wales) Act 2016 are one of many aspects to reverse a decline in biodiversity at the global level and show progress towards the UK Post-2010 Biodiversity Framework.

1.1.9 During the decision-making process for planning applications, the Section 7 species of bat as listed under the Environment (Wales) Act 2016 should be taken into consideration through the "Biodiversity Duty", along with a review of the application in light of the well-being goal, "A resilient Wales" within the Well-being of Future Generations (Wales) Act 2015. The decision should fundamentally not lead to the decline in biodiversity within their geographic area or that of Wales, as part of their reporting for these two Acts.

Consideration of Bat Foraging Areas & Commuting Routes

1.1.10 Bat core sustenance zones, foraging areas and commuting routes are not directly protected under the legislation described above. However, loss of important foraging areas and/or commuting routes could potentially constitute an offence as defined by the Conservation of Habitats and Species Regulations 2017 (as amended) through disturbance affecting bats ability to survive, breed or reproduce, or to rear or nurture their young or to hibernate or migrate[1]. Depending on the scheme this could also extend to significantly affect the local distribution or abundance of the species in question. Furthermore, the loss of a commuting route providing the only access to a roost could also potentially constitute a deliberate, intentional or reckless act of damage/destruction of a breeding site/resting place and damage/destroy/obstruction of a place used for shelter/protection covered by the Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended).

[1] Where such actions are proven to result in a loss of the ecological functionality of the roost.

Appendix 2

Bat Activity Surveys 2024 – Dates, Times and Weather Conditions

Appendix 2: Bat Survey Dates, Times and Weather Conditions

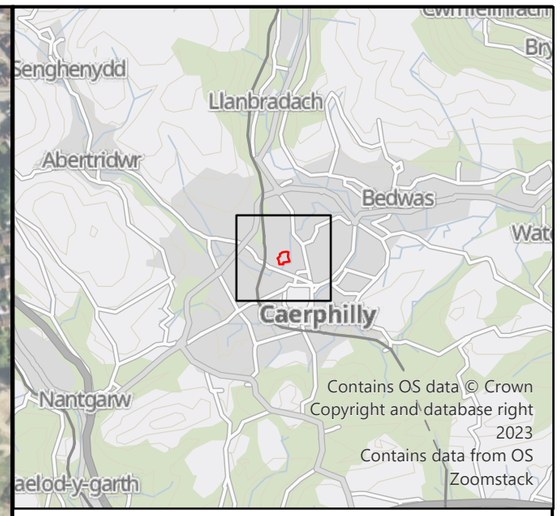
Bat Activity – Night-time Bat Walkover

Date	Start Time (sunset) / End Time (hrs)	Weather Conditions (Temp., precip., cloud cover, wind)
Spring 29.05.2024	21:18 / 23:18	Start: 15°C, 0%, 5/8, 14mph End: 13°C, 0%, 5/8, 14mph
Summer 18.07.2024	21:20 / 23:20	Start: 18°C, 0%, 1/8, 8mph End: 16°C, 0%, 1/8, 5mph
Autumn 09.09.2024	19:40 / 21:40	Start: 13°C, 0%, 0/8, 10mph End: 14°C, 0%, 2/8, 10mph

Bat Activity – Automated Detector Surveys

Month	Deployment Dates
May	Tuesday 28th – Monday 3rd June
June	Tuesday 25th – Thursday 4th July
July	Thursday 18th – Monday 22nd July
August	Friday 16th – Wednesday 21st August
September	Monday 9th – Monday 16th September
October	Monday 7th – Monday 14th October

DRAWINGS



KEY

Approximate Site Boundary

Notes:

Boundaries are indicative. Aerial imagery shown for context purposes only.

REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
A	FIRST ISSUE	26/09/24	BL	GM	SC

CLIENT

AECOM

PROJECT

PLASYFELIN PRIMARY SCHOOL

DRAWING TITLE

SITE LOCATION PLAN

DRG No.	REV	SUIT. CODE
CA13112-001	A	--

DRG SIZE	SCALE	DATE
A3	1:5,000	26/09/2024

DRAWN BY	CHECKED BY	APPROVED BY
BL	GM	SC

wardell armstrong

KEY

- Approximate Site Boundary
- Transect Route
- Listening Stop

Bat Foraging

- Common Pipistrelle
- Soprano Pipistrelle

Bat Activity

- X Common Pipistrelle
- X Soprano Pipistrelle

Bat Flight Lines

- Common Pipistrelle
- Soprano Pipistrelle

Notes:

Boundaries are indicative. Aerial imagery shown for context purposes only.

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D

CLIENT: AECOM

PROJECT: PLASYFELIN PRIMARY SCHOOL

DRAWING TITLE: NIGHT-TIME BAT WALKOVER SURVEY RESULTS – SPRING

DRG No.	REV	SUIT. CODE
CA13112-004	A	--

DRG SIZE	SCALE	DATE
A3	1:1,000	14/11/2024

DRAWN BY	CHECKED BY	APPROVED BY
RCB	ASP	SC

wardell armstrong PART OF SLR

N:\CA\CA13112 - Plasyfelin Primary School\03 - Design\GIS\CA13112-004 – Night-time Bat Walkover Survey Results – Spring\CA13112-004 – Night-time Bat Walkover Survey Results – Spring.aprx

KEY

- Approximate Site Boundary
- Transect Route
- Listening Stop

Bat Foraging

- Common Pipistrelle
- Soprano Pipistrelle

Bat Activity

- Common Pipistrelle

Bat Flight Lines

- Common Pipistrelle

Notes:

Boundaries are indicative. Aerial imagery shown for context purposes only.

REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT

AECOM

PROJECT

PLASYFELIN PRIMARY SCHOOL

DRAWING TITLE

NIGHT-TIME BAT WALKOVER SURVEY RESULTS – SUMMER

DRG No.	REV	SUIT. CODE
CA13112-005	A	--

DRG SIZE	SCALE	DATE
A3	1:1,000	14/11/2024

DRAWN BY	CHECKED BY	APPROVED BY
RCB	ASP	SC

wardell armstrong
PART OF SLR

N:\CA\CA13112 - Plasyfelin Primary School\03 - Design\GIS\CA13112-005 Night-time Bat Walkover Survey Results – Summer\CA13112-005 Night-time Bat Walkover Survey Results – Summer.aprx

KEY

- Approximate Site Boundary
- Listening Stop
- Transect Route

Bat Foragaing

- Common Pipistrelle
- Soprano Pipistrelle

Bat Activity

- Common Pipistrelle
- Soprano Pipistrelle

Bat Flight Lines

- Common Pipistrelle
- Soprano Pipistrelle

Notes:

Boundaries are indicative. Aerial imagery shown for context purposes only.

REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT: AECOM

PROJECT: PLASYFELIN PRIMARY SCHOOL

DRAWING TITLE: NIGHT-TIME BAT WALKOVER SURVEY RESULTS – AUTUMN

DRG No.	REV	SUIT. CODE
CA13112-006	A	--

DRG SIZE	SCALE	DATE
A3	1:1,000	14/11/2024

DRAWN BY	CHECKED BY	APPROVED BY
RCB	ASP	SC

wardell armstrong PART OF SLR

N:\CA\CA13112 - Plasyfelin Primary School\03 - Design\GIS\CA13112-006 – Night-time Bat Walkover Survey Results – Autumn\CA13112-006 – Night-time Bat Walkover Survey Results – Autumn.aprx

KEY

- Approximate Site Boundary
- Automated Detectors

Notes:

Boundaries are indicative. Aerial imagery shown for context purposes only.

REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT

AECOM

PROJECT

PLASYFELIN PRIMARY SCHOOL

DRAWING TITLE

AUTOMATED DETECTOR LOCATION PLAN

DRG No.	REV	SUIT. CODE
CA13112-007	A	--

DRG SIZE	SCALE	DATE
A3	1:1,000	14/11/2024

DRAWN BY	CHECKED BY	APPROVED BY
GR	ASP	SC

wardell armstrong
PART OF SLR

N:\CA\CA13112 - Plasyfelin Primary School\03 - Design\GIS\CA13112-007 Automated Detector Location Plan\CA13112-007 Automated Detector Location Plan.aprx

wardell-armstrong.com

STOKE-ON-TRENT
Sir Henry Doulton House
Forge Lane
Etruria
Stoke-on-Trent
ST1 5BD
Tel: +44 (0)1782 276 700

BIRMINGHAM
Two Devon Way
Longbridge Technology Park
Longbridge
Birmingham
B31 2TS
Tel: +44 (0)121 580 0909

BOLTON
41-50 Futura Park
Aspinall Way
Middlebrook
Bolton
BL6 6SU
Tel: +44 (0)1204 227 227

BRISTOL
Temple Studios
Temple Gate
Redcliffe
Bristol
BS1 6QA
Tel: +44 (0)117 203 4477

BURY ST EDMUNDS
Armstrong House
Lamdin Road
Bury St Edmunds
Suffolk
IP32 6NU
Tel: +44 (0)1284 765 210

CARDIFF
Tudor House
16 Cathedral Road
Cardiff
CF11 9LJ
Tel: +44 (0)292 072 9191

CARLISLE
Marconi Road
Burgh Road Industrial Estate
Carlisle
Cumbria
CA2 7NA
Tel: +44 (0)1228 550 575

EDINBURGH
Great Michael House
14 Links Place
Edinburgh
EH6 7EZ
Tel: +44 (0)131 555 3311

GLASGOW
24 St Vincent Place
Glasgow
G1 2EU
Tel: +44 (0)141 428 4499

LEEDS
36 Park Row
Leeds
LS1 5JL
Tel: +44 (0)113 831 5533

LONDON
Third Floor
46 Chancery Lane
London
WC2A 1JE
Tel: +44 (0)207 242 3243

NEWCASTLE UPON TYNE
City Quadrant
11 Waterloo Square
Newcastle upon Tyne
NE1 4DP
Tel: +44 (0)191 232 0943

TRURO
Baldhu House
Wheal Jane Earth Science Park
Baldhu
Truro
TR3 6EH
Tel: +44 (0)187 256 0738

International office:

ALMATY
29/6 Satpaev Avenue
Hyatt Regency Hotel
Office Tower
Almaty
Kazakhstan
050040
Tel: +7(727) 334 1310

wardell armstrong | PART OF SLR