



CARDIFF COUNCIL

FAIRWATER SOCIAL CLUB

BAT ACTIVITY SURVEY REPORT – REVISED

FEBRUARY 2022 (UPDATED MARCH 2023)

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FEBRUARY 2022 (UPDATED MARCH 2023)

VERSION 1.0 – FEBRUARY 2022

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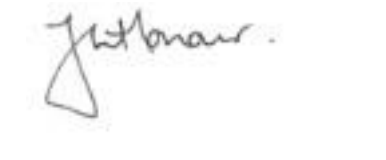
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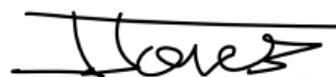


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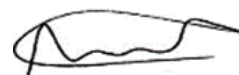
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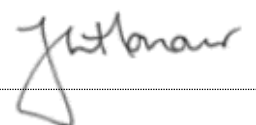


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CONTENTS

EXECUTIVE SUMMARY	1
1 INTRODUCTION.....	2
2 METHODOLOGY	5
3 RESULTS.....	8
4 NATURE CONSERVATION EVALUATION	13
5 RECOMMENDATIONS	15
6 ENHANCEMENTS.....	16

APPENDICES

Appendix 1	Walked Transect Survey Results October 2020
Appendix 2	Legislative Framework
Appendix 3	Bat Activity Survey Dates, Times and Weather Conditions
Appendix 4	Determining Value of Ecological Receptors

DRAWINGS	TITLE	SCALE
CA12473-004	Site Location Plan	1:15,000@A3
CA12473-005	Habitat Plan	1:750@A3
CA12473-006	Walked Transect Survey Results – May 2021	1:750@A3
CA12473-007	Walked Transect Survey Results – July 2021	1:750@A3
CA12473-002	Walked Transect Survey Results – October 2022	1:1000@A3
CA12473-001	Automated Detector Location Plan	1:1000@A3

EXECUTIVE SUMMARY

Wardell Armstrong LLP (WA) was commissioned by Cardiff Council on 15th June 2022 to update an Autumn bat activity survey in connection with the proposed redevelopment of the Fairwater Social Club site (hereafter referred to as the 'site') located at 22 Plas-Mawr Rd, Cardiff CF5 3XH, approximate National Grid Reference ST 13861 77838. This report summarises the results of the bat activity surveys undertaken at the site in Spring and Summer 2021 and Autumn 2022, with reference also to the previous Autumn 2020 survey results.

A data search carried out for the site in January 2023 identified at least ten bat species recorded within 2km of the site in the last 10 years.

Walked transect surveys detected common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, and noctule *Nyctalus noctula* activity across the site. Most activity witnessed by surveyors comprised of foraging and commuting around areas of broadleaved trees and towards the woodland on the northeast boundary of the site. Noctule was recorded in multiple locations in Summer. Common pipistrelle was the most recorded species across all seasons, followed by soprano pipistrelle.

During automated detector surveys, the highest level of activity was recorded in Autumn 2022, followed by Spring 2021. Results for the Summer automated detector surveys were omitted from analysis as only one bat call was recorded. The reason for this was a technical failure of the automatic detector. However, as similar species assemblage and activity was recorded during the walked transect survey in Summer compared to the Spring and Autumn walked transect surveys, in addition to similar species being recorded by the automated detectors in Autumn and Spring, the lack of automated detector results in Summer is unlikely to affect the conclusions of this report. On this basis It can be assumed that a similar species assemblage to that identified during the Summer walked transect survey is likely to have been recorded by the automated detector survey, had the automated detector not failed.

Common pipistrelle comprised 83.17% of activity across all seasons, and soprano pipistrelle comprised 14.90%. Individual records of noctule, brown long-eared bat *Plecotus auritus*, Nathusius' pipistrelle *Pipistrellus nathusii* and *Myotis spp.* comprised less than 2% of the total recordings.

1 INTRODUCTION

1.1 Terms of Reference

1.1.1 Wardell Armstrong LLP (WA) was commissioned by Cardiff Council on 15th June 2022 to undertake an update bat activity survey in Autumn 2022 in connection with the proposed redevelopment of the Fairwater Social Club site (hereafter referred to as the 'site') located at 22 Plas-Mawr Rd, Cardiff CF5 3XH, centred on approximate National Grid Reference ST 13861 77838.

1.1.2 The location of the site is shown on Drawing CA12473-004 (Site Location Plan).

1.2 Site Description

1.2.1 The 0.6-hectare (ha) site comprises mainly of hardstanding with semi-improved grassland, broadleaved scattered trees and dense scrub. The social club building is located within the north eastern part of the site. The social club building is a rectangular shaped single storey structure, structural material includes tiled roof, brick walls, with PVC windows and doors including metal shutters and wooden boards.

1.2.2 A small section of broadleaved woodland is located in the south-east corner of the site and is connected to the wider woodland within Fairwater Park bounding the east of the site. Residential housing surrounds the site on all remaining sides. The main access road to the site is off Plas-Mawr Road to the west and south-west.

1.3 Description of Development

1.3.1 The Fairwater Social Club has remained unused for several years and are surplus to requirements. Therefore, it is proposed that this building is demolished, and associated grounds are re-developed.

1.4 Background

Desk Study

1.4.1 Information received from the Southeast Wales Biodiversity Records Centre (SEWBRc) in January 2023 revealed that there were no designated sites for bats within 10km of the site.

1.4.2 SEWBRc identified 503 records of bats within 2km of the site including: brown long-eared *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, Daubenton's *Myotis daubentonii*, *Myotis* species *Myotis sp.*, Nathusius' pipistrelle *Pipistrellus nathusii*, noctule *Nyctalus noctula*, pipistrelle species *Pipistrellus sp.*, serotine

Eptesicus serotinus, soprano pipistrelle *Pipistrellus pygmaeus*, whiskered bat *Myotis mystacinus* and unknown bat.

- 1.4.3 The closest record was of a common pipistrelle approximately 291m from the Fairwater Social Club building in 2019, the exact location is undisclosed. The most recent record was of a noctule bat approximately 1.7km northeast of the site in 2021.
- 1.4.4 There are 17 bat roost records within 2km of the building. The closest and most recent record is a common pipistrelle roost approximately 442m south of the building in 2019.
- 1.4.5 Many of the roost locations within the search area were located along the River Ely and in Plymouth Great Wood (SINC).

Previous Surveys

- 1.4.6 The Preliminary Ecological Appraisal¹ (PEA) assessed the site as containing habitats of 'low' suitability for foraging and commuting bats. Seasonal bat activity surveys were therefore recommended.
- 1.4.7 Version 1.0 of the Bat Activity Survey Report (February 2022)² summarised the results of the bat activity survey with visits undertaken at the site in Autumn 2020 and Spring and Summer 2021.
- 1.4.8 Bat species recorded during the October 2020 (Autumn) bat activity survey included common pipistrelle, soprano pipistrelle and Nathusius' pipistrelle. Nathusius' pipistrelle was only recorded during the walked transect surveys. The Autumn 2020 bat activity survey results are shown on Drawing Number CA11839-006 provided as Appendix 1.

1.5 Legislative Framework

- 1.5.1 All UK bat species are protected by legislative framework, a summary of which is provided in Appendix 2.

¹ Wardell Armstrong LLP, 'Cardiff Council, Fairwater Social Club, Preliminary Ecological Appraisal Report, May 2021'. Report reference CA11839/002 version V1.0.

² Wardell Armstrong LLP, 'Cardiff Council, Fairwater Social Club, Bat Report – Bat Activity Surveys, February 2022'. Report reference CA11839/004 version V1.0.

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;
- 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 Scope of Report

1.7.1 Given the time elapsed since the previous Autumn 2020 survey, an update Autumn survey has been conducted. The results of the Spring and Summer 2021 and Autumn 2022 bat activity survey visits are detailed in this report (V2.0 of the Bat Activity Survey Report (February 2023)). A comparison is also made between the Autumn 2020 and Autumn 2022 survey results.

1.7.2 The purpose of this report is to detail: the methodology and results of the bat activity surveys, which comprised walked transect and automated detector surveys, undertaken in May 2021 (Spring), July 2021 (Summer) and October 2022 (Autumn); provide an evaluation of the bat populations present, and to provide recommendations on bat mitigation measures and enhancements to inform any future development at the site.

2 METHODOLOGY

2.1 Activity Surveys

Walked Transect Surveys

- 2.1.1 As part of the PEA carried out in May 2021, the habitats within the site were categorised as being of 'low' suitability for bats. Best practice guidelines (Collins, J. (ed.) 2016) recommend that, for 'low' suitability sites, one survey visit per transect is undertaken per season. Additionally, at least one automated bat detector should be deployed per transect with data being collected over five consecutive nights.
- 2.1.2 Walked transect surveys at dusk were undertaken in May 2021 (Spring), July 2021 (Summer) and October 2022 (Autumn).
- 2.1.3 The walked transect surveys undertaken in 2021 and 2022 followed the guidance provided in the *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, J. (ed) 2016). One transect was walked by two surveyors over the site to allow complete coverage with occasional listening stops. Each listening stop lasted approximately five minutes. The survey routes walked during Spring 2021, Summer 2021 and Autumn 2022 surveys are shown on Drawing Numbers CA12473-006, CA12473-007 and CA12473-002 respectively.
- 2.1.4 Dates, times and weather conditions during the surveys are provided in Appendix 3.
- 2.1.5 Echo Meter Touch (Wildlife Acoustics, Inc., Massachusetts) bat detectors, iPads (Apple Inc., California) and Samsung tablets (Samsung Group, South Korea) 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 survey

- 2.1.6 To supplement the activity survey, one Sound Meter SM4BAT+ Bioacoustics Recorder (Wildlife Acoustics, Inc.) was deployed following the guidance provided in the *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, J. (ed) 2016).
- 2.1.7 In Autumn 2022 two detectors were deployed to gain a better understanding of bat assemblages on site, particularly due to the site's proximity to Fairwater Park Site of Importance for Nature Conservation (SINC) which is located directly east of the site. One of the detectors was placed in the original location within the southern eastern corner of the site (Location (L) 1). The second detector was deployed within the

northern part of the site (Location 2). The locations of the automated bat detectors are shown on Drawing Number CA12473-002 (Automated Detector Location Plan).

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

2.1.9 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 Results for the Summer automated detector surveys were omitted from analysis as only one bat call was recorded. The reason for this was a technical failure of the automatic detector. However, as similar species assemblage and activity was recorded during the walked transect survey in Summer compared to the Spring and Autumn walked transect surveys, in addition to similar species being recorded by the automated detectors in Autumn and Spring, the lack of automated detector results in Summer is unlikely to affect the conclusions of this report. On this basis It can be assumed that a similar species assemblage to that identified during the Summer walked transect survey is likely to have been recorded by the automated detector had the automated detector not failed.

2.2.2 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.

2.2.3 During the Autumn 2022 automated detector survey the initially deployed detector at Location 1 was stolen. Another detector was deployed to produce results for Autumn 2022 at Location 1. The detector was moved slightly to another position to be inconspicuous, however the location of the detector has still been labelled as Location 1 as it is still covers the southern end of the site and is considered close to its original location.

2.2.4 Echolocation calls of the brown long-eared bats 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 may be missed which can lead to bias.

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

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) and thus 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 Bat Activity Surveys

3.1.1 Overall, six of the 17 British breeding species were recorded within the site during the activity surveys and were identified to species level during the surveys. Locations of bats recorded during the walked transects during Spring 2021, Summer 2021 and Autumn 2022 are shown on Drawing Numbers CA12473-006, CA12473-007 and CA12473-002 respectively.

3.1.2 Species present during the 2021/2022 bat activity surveys by season are summarised in Table 1 below.

Table 1: Species present during the 2021/2022 bat activity surveys per season. Ticks (✓) represent species recorded that season and (-) were not recorded.			
Species	Season		
	Spring 2021	Summer 2021	Autumn 2022
Common pipistrelle	✓	✓	✓
Soprano pipistrelle	✓	✓ ¹	✓
Nathusius' pipistrelle	✓ ²	-	-
Noctule	✓ ²	✓ ¹	✓ ²
Brown long-eared	-	-	✓ ²
Myotis	-	-	✓ ²

¹ This species was only recorded during walked transect surveys.

² This species was only recorded during automated detector surveys.

3.2 Walked Transect Surveys Results

3.2.1 In Spring 2021, common pipistrelles were recorded throughout the site. Soprano pipistrelle was only recorded in the woodland and adjacent to the northeast corner of the site. Foraging behaviour by common pipistrelle was concentrated in the northeast of the site near stops 2, 3, and 4 where broadleaved woodland is located outside of the site.

3.2.2 Activity in Summer 2021 saw the widest variety of species, with common and soprano pipistrelle witnessed foraging in the northeast (stop 3) and southwestern (stop 7) corners of the site. A noctule was recorded along the broadleaved treeline of the western edge of site (between stops 6 & 7) and another close to listening stop 12. Common pipistrelle were observed throughout the site with a soprano pipistrelle witnessed commuting northeast likely towards the broadleaved woodland at stop 5 and recorded close to listening stops 6 and 8.

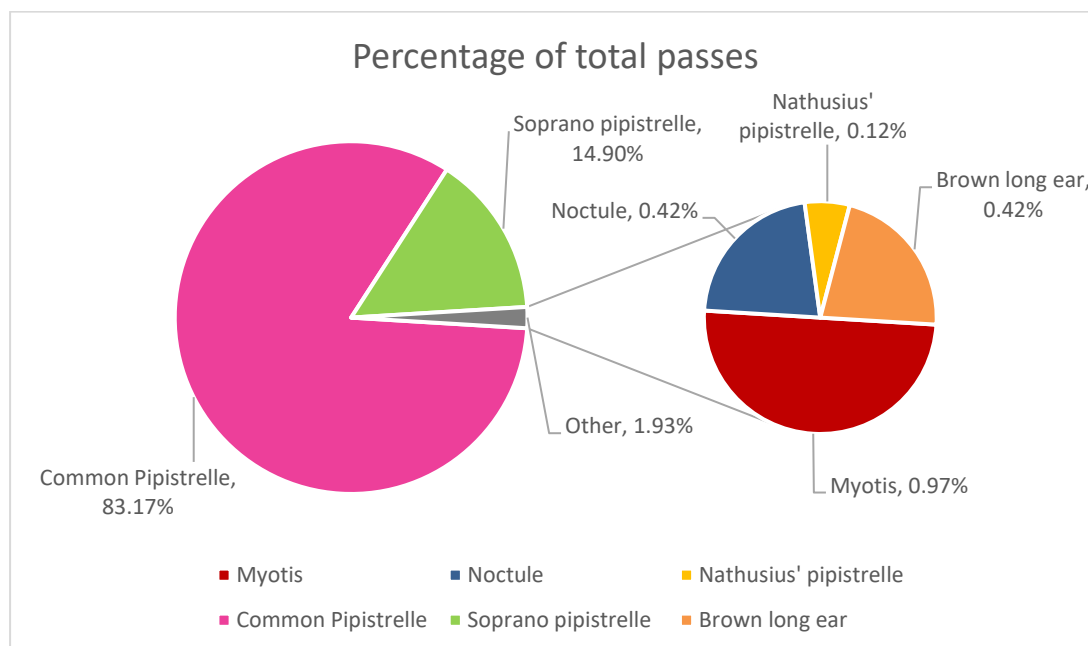
3.2.3 Bat activity in Autumn 2022 was low in comparison to other seasons in 2021, with just two bats recorded. A common pipistrelle at listening stop 6, and a soprano pipistrelle at listening stop 8. Neither bat was visually identified. A decrease in activity was recorded during the walked transect survey from Autumn (22nd October) 2020 to Autumn (11th October) 2022, as well as in the number of species identified. Similar temperatures were recorded during both surveys but the cloud cover and wind speeds were slightly higher in 2020.

3.3 Automated Detector Survey Results

The results from the automated detector surveys during all surveys conducted are shown below in Table 2.

Table 2: Total calls/ species recorded on automated detectors.				
<i>Species</i>	Spring (2021)	Summer (2021)	Autumn (2022)	Total calls
Common pipistrelle	517	1	860	1379
Nathusius' pipistrelle	2	0	-	2
Soprano pipistrelle	147	0	100	247
Noctule	1	0	6	7
<i>Myotis</i>	-	-	16	16
Brown long eared	-	-	7	7
Total calls /month	667	1	989	1658

3.3.1 Pie chart – **Figure 1** Total percentage of bat passes per species recorded over the Spring 2021 and Autumn 2022 automated detector surveys.



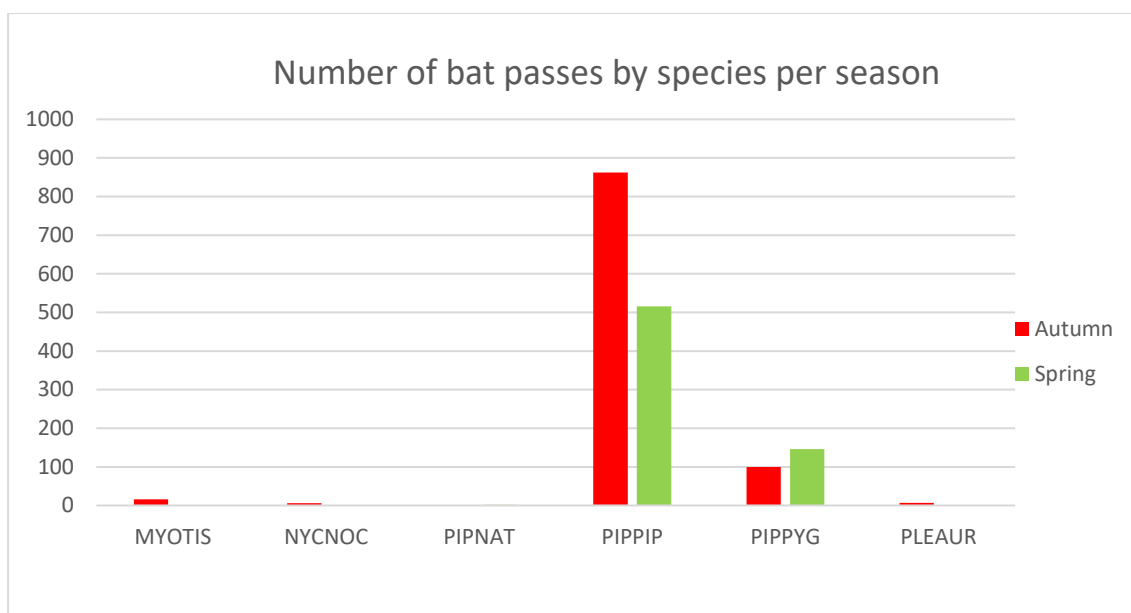
Summary

3.3.1 The highest number of total bat passes was recorded during the Autumn 2022 automated detector survey (989) accounting for 59.7% of total passes, compared to the total passes recorded in the Spring 2021 survey (667) which accounts for 40.2% of the total passes.

3.3.2 Three more species were identified during the automated detector surveys in Autumn 2022 compared to in Autumn 2020 (Noctule, *Myotis* sp. and brown long-eared). There was also a significant increase in the number of passes recorded in Autumn 2022 (989) compared to Autumn 2020 (55)³.

3.3.3 Bar chart – **Figure 2** – Total number of bats passes per species recorded during the Spring 2021 and Autumn 2022 automated detector surveys.

³ Wardell Armstrong LLP, 'Cardiff Council, Fairwater Social Club, Bat Report – Bat Activity Surveys, February 2022'. Report reference CA11839/004 version 1.0.



Summary

- 3.3.4 Common pipistrelle was the most recorded species during both the walked transect surveys and automated detector surveys and was present in all seasons. Activity from this species was identified evenly across the east of the site, with foraging behaviours mostly witnessed in the northeast corner of the site and in the adjacent woodland area. A higher density of calls also occurred in the southwestern part of the site.
- 3.3.5 Soprano pipistrelles were recorded during all walked transects, and on the automated detector in Autumn and Spring, with the majority of passes being recorded in Spring. Behaviour was not visually confirmed, but activity was mostly found in the southern half of the site with one call recorded in the woodland located outside the north-eastern site boundary. Noctule was detected during the walked transect surveys in Summer, once on the automated detector in Spring and a total of six times on the Autumn 2022 automated detector.
- 3.3.6 Nathusius' pipistrelle was only recorded twice in Spring by the automated detector.
- 3.3.7 *Myotis* and brown long-eared bats were only recorded in the Autumn 2022 automated detector.
- 3.3.8 Stacked Bar chart – **Figure 3** – Total number of bats passes per species at Locations 1 and Location 2 recorded during the Autumn 2022 automated detector surveys.



Summary

- 3.3.9 During the Autumn 2022 automated detector survey, a higher number of bat passes was recorded at Location 2 compared to Location 1. Location 2 also had a greater amount of species diversity, recording a total of five different species compared to Location 1 which only recorded a total of 3 different species.
- 3.3.10 Species of *Myotis* were recorded at both Location 1 and Location 2 during the Autumn automated detector survey. *Myotis* were recorded in greater numbers at Location 1 (11 calls) when compared to Location 2 (5 calls). No *Myotis* species were recorded during the walked transect surveys.
- 3.3.11 Brown long ear bats were recorded in low numbers at the north Location 2 automated detector only in Autumn. No brown long-eared bats were recorded during the walked transect surveys.

4 EVALUATION

- 4.1.1 The criteria of determining the value of ecological receptors are provided in Appendix 4.
- 4.1.2 Bats are protected by legislative framework, a summary of which is provided in Appendix 2. Such protection is relevant to the assignment of value to such species, but additional factors, such as population size and the nature of the distribution of the species are also considered. These factors affect the value of species. Based on the results, overall, bat species diversity around the site supports six of the 17 British resident species.
- 4.1.3 Most of the bat activity comprised of common pipistrelle passes. This is a common and widespread species in Wales and is known to be one of the more tolerant bat species to human disturbances⁴. Given the upward trend in the British populations of common pipistrelle as well as the availability of suitable habitat within the wider landscape which includes the woodland and parkland to the north and east of the site, the recorded assemblage is considered to be of **local** nature conservation value based on current survey results.
- 4.1.4 Soprano pipistrelle was the second most recorded species by the automated detector and walked transect surveys. Given the upward trend in the British populations of soprano pipistrelle, as well as the availability of suitable habitat within the wider landscape as stated for common pipistrelle, the recorded assemblage is considered to be of **local** nature conservation value based on current survey results.
- 4.1.5 Noctule was detected once by the automated detector in Spring, and several times in Autumn at Location 2 only. Noctule bats are widespread throughout England, Wales and South-west Scotland, but numbers are thought to have slowly reduced due to agricultural intensification and national losses of mature trees. Due to the low number of passes in the results it is considered that the activity recorded is likely to be attributed to individual or very low numbers of opportunistic foraging and commuting noctules, therefore, the noctule assemblage on site is considered to be of **local** nature conservation value based on the survey results.

⁴ Bat Conservation Trust, Date not known, UK Bats. Bat Conservation Trust, Viewed 21st October 2021, <https://www.bats.org.uk/about-bats/what-are-bats/uk-bats>

- 4.1.6 Nathusius' pipistrelle was detected twice by the automated detector in Spring. Nathusius' pipistrelle bats are widespread but rare in the UK. Their populations are nationally sparse and concentrated around the southeast of England, with Welsh populations only known on the southern and northern coasts. The UK population is thought to have increased in recent years, but this may also be due to advancements in detection technology and reporting. Due to the low number of passes in the results it is considered that the activity recorded is likely to be attributed to individual or low numbers of opportunistic foraging and commuting Nathusius' pipistrelles, therefore, the Nathusius' pipistrelle assemblage on site is considered to be of **local** nature conservation value based on the survey results.
- 4.1.7 Species of *Myotis* were recorded at both Location 1 and Location 2 on the Autumn automated detector survey. While there was a greater number of *Myotis* species recorded at Location 1 compared to Location 2, the total difference is not considered significant enough to discuss potential reasons for this variance. Species within the *Myotis* genera include Daubenton's *Myotis daubentonii*, Natterer's *Myotis nattereri*, whiskered and Brandt's *Myotis brandtii* bats. The majority of *Myotis* bat populations are considered stable in Wales. Given that these species are known to be light averse, and the site is located within an urban environment it is considered that the activity recorded is likely to be attributed to individual or low numbers of opportunistic foraging and commuting bats along the darker eastern corridor of the site. Therefore, this species is considered to be of **local** nature conservation value based on the survey results.
- 4.1.8 Brown long-eared bats were recorded in low numbers during the automated detector survey in Autumn at Location 2. Despite these species being 'rarer' within Wales, the level of activity observed on site by these species was low, therefore, it is considered that this species is of **local** nature conservation value based on current survey results.
- 4.1.9 During the automated detector surveys, Location 2 had the highest species diversity, with the highest rates of bat activity, compared to Location 1. This could offer explanation as to why activity increased so drastically in the Autumn 2022 automated detector surveys, compared to in Autumn 2020. As Location 2 was not present in the Autumn 2020 surveys, but accounts for most of the bat activity recorded. Highlighting the importance of the habitats adjacent to Location 2, for the foraging and commuting of bats.

5 RECOMMENDATIONS

- 5.1.1 Bats are a legally protected species under the Wildlife and Countryside Act 1981 (as amended) (WCA) and the Conservation of Habitats and Species Regulations 2017 (as amended). They are also listed as Section 7 species on the Environment (Wales) Act 2016. Further assessment is therefore required to assess the effects of future development proposals on them and determine whether or not construction and operational phase activities have the potential to contravene legislation pertaining to bats.
- 5.1.2 Vegetation clearance and the installation of additional lighting around the site which may form part of a future redevelopment scheme has the potential to result in the damage, loss and isolation of habitat used by bats for foraging and commuting, thus affecting connectivity and the movement of bats.
- 5.1.3 It is recommended that trees and woodland habitat within the southern part of the site and trees within the northern part of the site are retained and protected as part of development proposals. Retained trees should be protected from development and ingress from construction machinery in accordance with BS 5837:2012 Trees in relation to design, demolition, and construction.
- 5.1.4 If loss of trees/woodland habitat cannot be avoided, creation of similar habitat in a suitable location elsewhere on site is likely to be required.
- 5.1.5 It is recommended that there is no increase in lighting to any retained habitat. A sensitive lighting scheme may be required for the site which should be designed by a lighting professional with input from an ecologist and with reference to the IJP and BCT guidelines on Bats and Artificial Lighting⁵. Dark corridors should be incorporated within the proposed development to maintain connectivity for bats across the site and to adjoining habitats off-site.
- 5.1.6 This report will remain valid for a period of 2 years from the date of the surveys. If the proposed development has not commenced within this timeframe, update bat activity surveys are recommended.

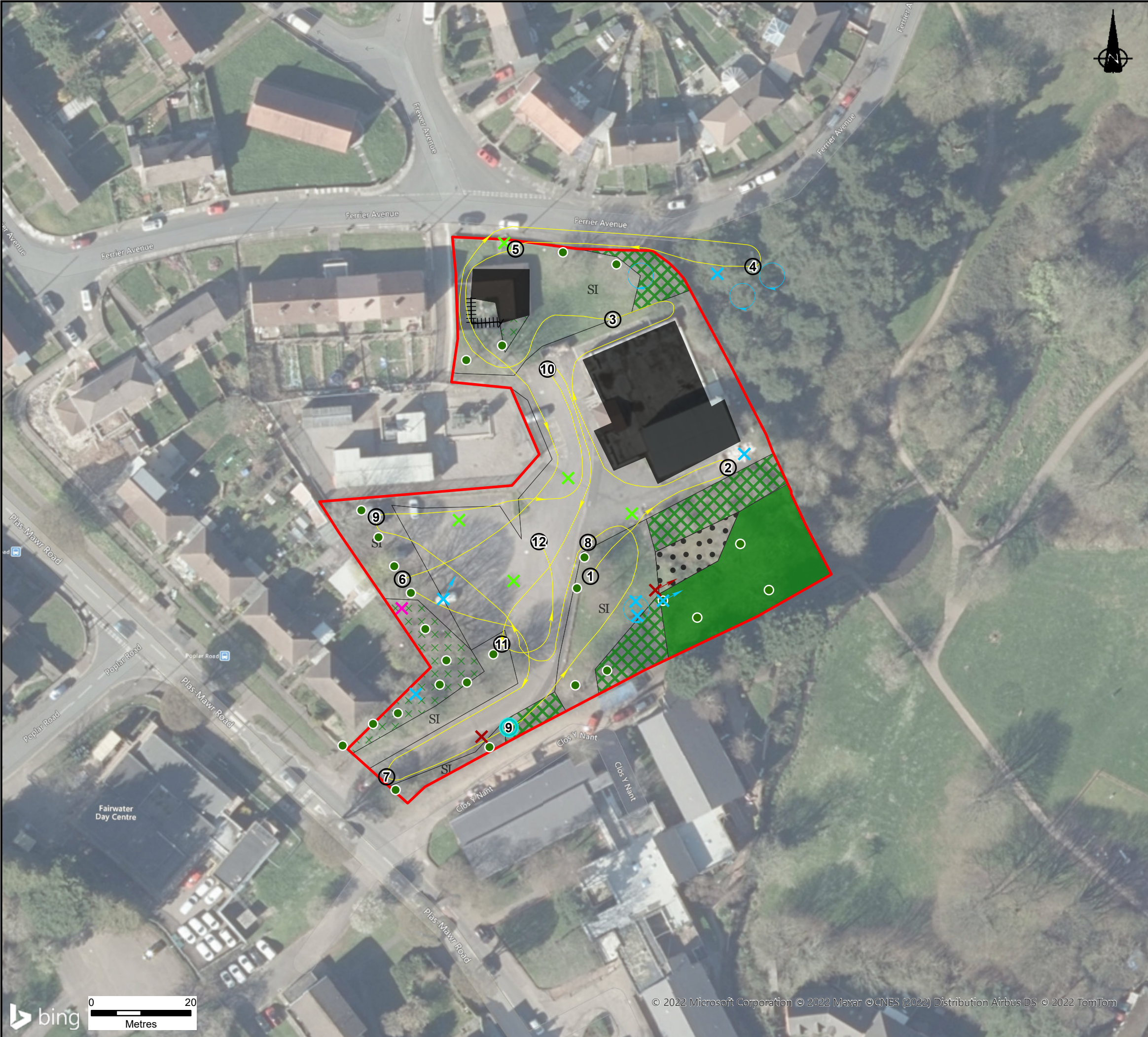
⁵ Bat Conservation Trust & Institute of Lighting Professionals (2018) Bats and Artificial Lighting in the UK. Guidance Note 08/18.

6 ENHANCEMENTS

- 6.1.1 In accordance with the requirements of the national and local planning policy and BSI 42020:2013, ecological enhancements should be proposed which will result in a net benefit for biodiversity.
- 6.1.2 It is recommended that bat boxes (such as Schwegler 1FF or equivalent) should be installed as an enhancement for bat roosting habitat along the southern boundary.
- 6.1.3 Additional planting to create a mosaic of habitats along the southern boundary would be beneficial to foraging and commuting bats, improving the habitat around the proposed bat boxes. This could include areas of native tree planting, scrub and open habitat / grassland. However, tree planting should not restrict access to the bat boxes.

APPENDICES

Appendix 1
Walked Transect Survey Results October 2020



KEY

Site Boundary (wall)

Broadleaved woodland - semi-natural

SI

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Notes:

Boundaries are indicative.

Classifications in accordance with Handbook for Phase 1 Habitat Survey - A technique for Environmental Audit (JNCC 2010) 2016.

A	FIRST ISSUE	02/22	CT	AMC	JH
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CLIENT

CARDIFF COUNCIL

PROJECT

FAIRWATER SOCIAL CLUB

DRAWING TITLE

WALKED TRANSECT SURVEY RESULTS
OCTOBER 2020

DRG No.	CA11839/006	REV	A
DRG SIZE	A3	SCALE	1:750
DRAWN BY	CT	CHECKED BY	AMC
		APPROVED BY	JH

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Appendix 2

Legislative Framework

Appendix 2: Legislative Framework

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). 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, 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 on 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 migrate¹. 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 3

Bat Activity Survey Dates Times and Weather Conditions

Appendix 3: Bat Activity Survey Dates, Times, Weather Conditions and Results

Bat Activity – Walked Transect Surveys

Date	Start Time (sunset/sunrise) (hrs)	End time (hrs)	Weather Conditions
Spring May 11.05.2021	20:52 (20:52)	22:52	Start: 9°C, dry, wind NW 8mph, 80% cloud cover. End: 9°C, dry, wind W 8mph, 60% cloud cover.
Summer July 12.06.2021	21:26 (21:26)	23:26	Start: 17°C, dry, wind NW 4mph, 80% cloud cover. End: 17°C, dry, wind W 1pmh, 90% cloud cover.
Autumn October 11.10.2022	18:28 (18:28)	20:27	Start: 13°C, dry, wind E 3mph, 20% cloud cover. End: 12°C, dry, wind S 3mph, 50% cloud cover.

Bat Activity – Automated Detector Surveys

Season (month)	Deployment Dates	Limitations
Spring (May 2021)	14.05.2021	None
Summer (July 2021)	12.07.2021	Failed to record correctly (1 call recorded)
Autumn (October 2022)	20.10.2022	None

Appendix 4

Determining Value of Ecological Receptors

Appendix 4: Determining Value of Ecological Receptors

- 1.1.1 The conservation status of a site is defined in the Habitats Directive as this relates to internationally designated sites. The CIEEM guidance modifies the definition in order for it to be applicable to sites, habitats or species within any defined geographical area.
- 1.1.2 The assessment of the nature conservation value of the hedgerows within the site has been based on the ecological features identified through consultation, survey, the qualifying criteria in the Hedgerow Regulations 1997, the UK BAP criteria and the widely applied criteria described in A Nature Conservation Review (D. A. Ratcliffe, 1977). These include i) Size; ii) Diversity; iii) Naturalness; iv) Typicalness; v) Rarity and vi) Potential Value.
- 1.1.3 The levels of conservation importance are detailed below.

Table 9: Categories of Values		
Value Category	Relevance to Site	Examples
International	EU	An internationally important site (e.g. Special Protection Area (SPA), Special Area of Conservation (SAC), RAMSAR (or a site proposed for, or considered worthy of such designation)); A regularly occurring substantial population of an internationally important species (listed on Annex IV of the Habitats Directive).
National	Wales	A nationally designated site (e.g. Site of Special Scientific Interest (SSSI), or a site proposed for, or considered worthy of such designation); A viable area of a habitat type listed in Annex 1 of the Habitats Directive or of smaller areas of such habitat which are essential to maintain the viability of a larger whole; A regularly occurring substantial population of a nationally important species (e.g. listed on Schedules 5 & 8 of the Wildlife and Countryside Act 1981 (as amended) (Ref 8.2); A site where field study shows that the site would meet published SSSI Selection Guidelines.
Regional	South Wales	Areas of internationally or nationally important habitats that are degraded but are considered readily restorable; A regularly occurring, locally significant population of a species listed as being nationally scarce.
County	Cardiff	A non-statutory designated site (e.g. Local Wildlife Site (LWS) or a site listed on the Ancient Woodland Inventory (AWI)). A site where field study shows that the site would meet published county LWS selection criteria. Viable areas of priority habitat identified in the WLBAP where protection of all areas of that habitat is a published target; A regularly occurring, locally significant population of a species which is listed in a County Red

Table 9: Categories of Values

Value Category	Relevance to Site	Examples
		Data Book or WLBAP on account of its regional rarity or localisation.
District	Fairwater	A site designated as a non-statutory district wildlife site. A good example of a common or widespread habitat in the local area (e.g. those listed as broad habitats on the LBAP); Habitats that are scarce in the district or appreciably enrich the district ecological resource. A population of a species that is listed in the LBAP because of its rarity in the locality.
Local	Parish to site	Areas of heavily modified or managed vegetation of low species diversity or low value as habitat to species of nature conservation interest; Common and widespread species.

- 1.1.4 Individual species may be protected under European or National legislation. Such protection is relevant to the assignment of value to such species, but additional factors, such as population size and the nature of the distribution of the species are also considered. These factors affect the value of species.
- 1.1.5 The assignment of undesignated features, such as UK Priority and LBAP habitats and species or areas of ancient woodland may not fall clearly into the designations as described above. Therefore, a number of other criteria are used to assess the nature conservation value of a defined area of land.
- 1.1.6 Some features that are currently of no particular ecological interest in themselves may nevertheless perform an ecological function. For example, they may act as a buffer against adverse effects. This affects their value.

DRAWINGS



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Site Boundary

2km Search Radius

Note;

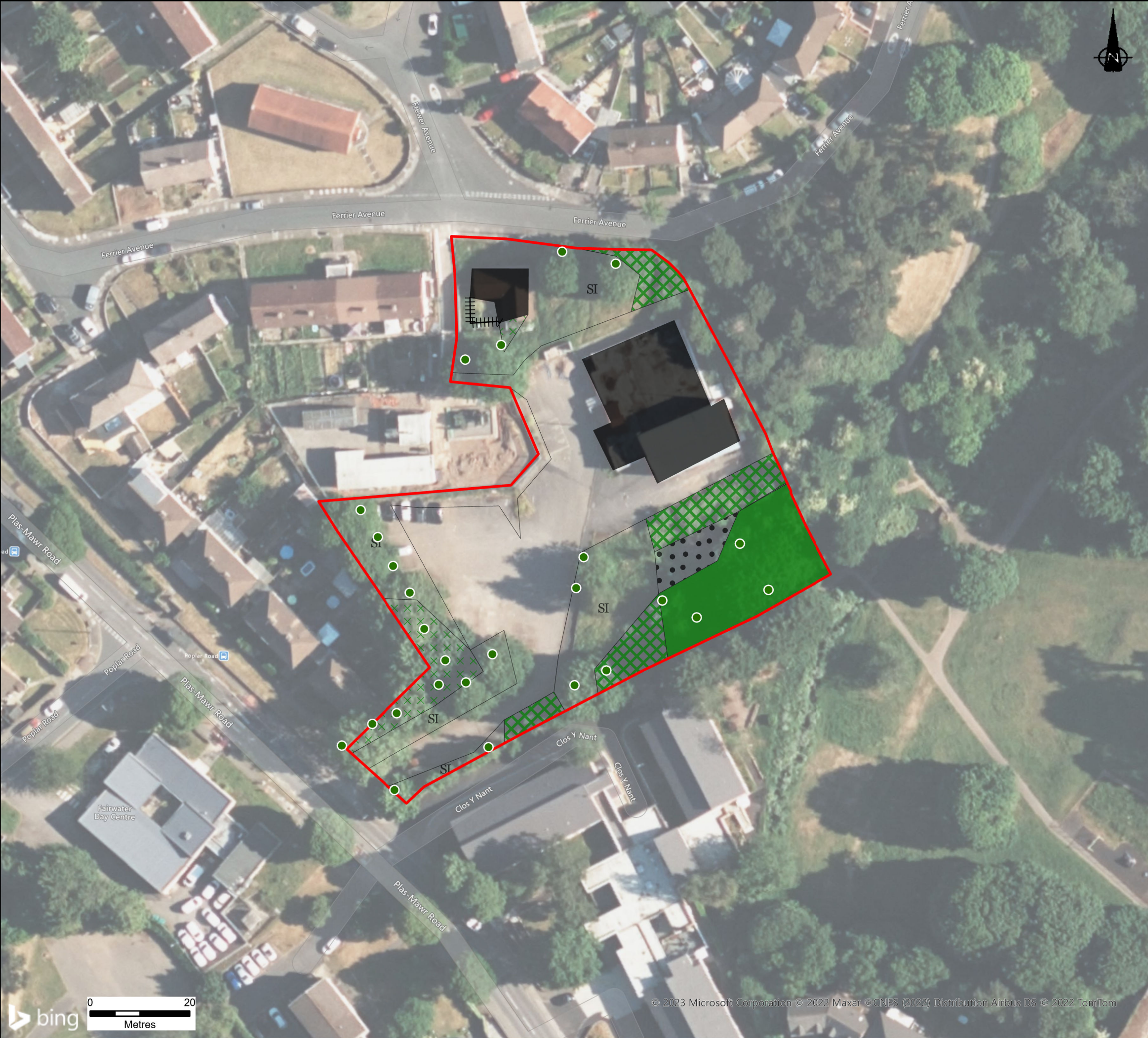
Boundaries are indicative.

A	FIRST ISSUE	22/02/23	MAB	AS	JH
REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
CLIENT					
CARDIFF COUNCIL					
PROJECT					
FAIRWATER SOCIAL CLUB 2022					
DRAWING TITLE					
SITE LOCATION PLAN					
DRG No.		CA12473 004		REV	A
DRG SIZE		A3		SCALE	1:15,000
DATE		22/02/2023		APPROVED BY	
DRAWN BY		EK		JH	

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Site Boundary (wall)

Broadleaved woodland - semi-natural

Scrub - dense/continuous

Scrub - scattered

SI

Poor semi-improved grassland

Buildings

Bare ground

Other habitat

|||||

Fence

Broadleaved Scattered Trees

Notes:

Boundaries are indicative.

Classifications in accordance with Handbook for Phase 1 Habitat Survey - A technique for Environmental Audit (JNCC 2010) 2016.

REVISION	DETAILS	DATE	DRAWN	CHKD

CLIENT	CARDIFF COUNCIL
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PROJECT	FAIRWATER SOCIAL CLUB
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DRAWING TITLE	HABITAT PLAN
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DRG No.	CA12473-005	REV	A
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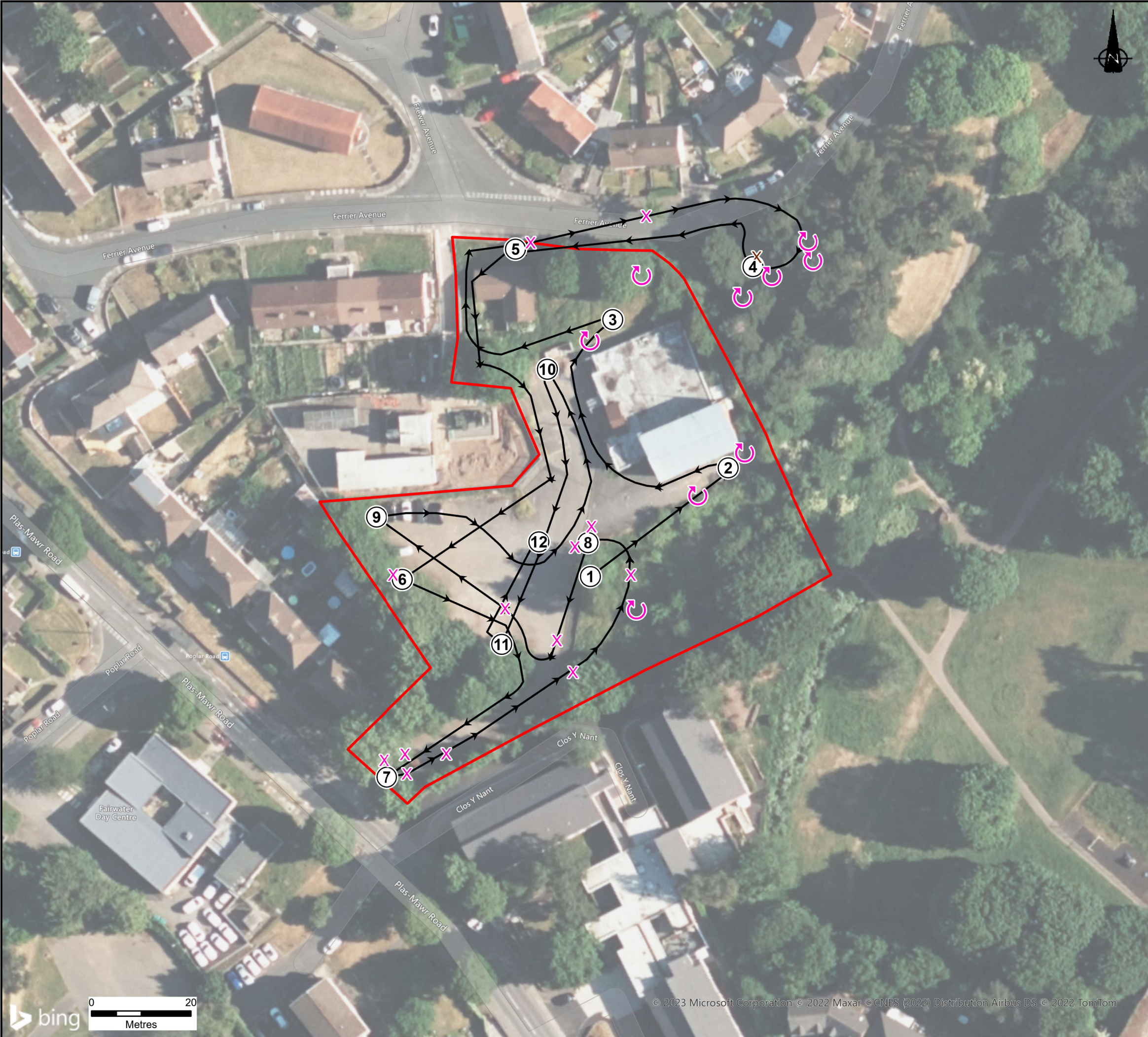
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KEY

Site Boundary (wall)

Transect Route

X

Common Pipistrelle

X

Soprano Pipistrelle

Notes:

Boundaries are indicative.

Classifications in accordance with Handbook for Phase 1 Habitat Survey - A technique for Environmental Audit (JNCC 2010) 2016.

REVISION	DETAILS	DATE	DRAWN	CHKD

CLIENT

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PROJECT

FAIRWATER SOCIAL CLUB

DRAWING TITLE

WALKED TRANSECT SURVEY RESULTS
MAY 2021

DRG No.	CA11839-006	REV	A
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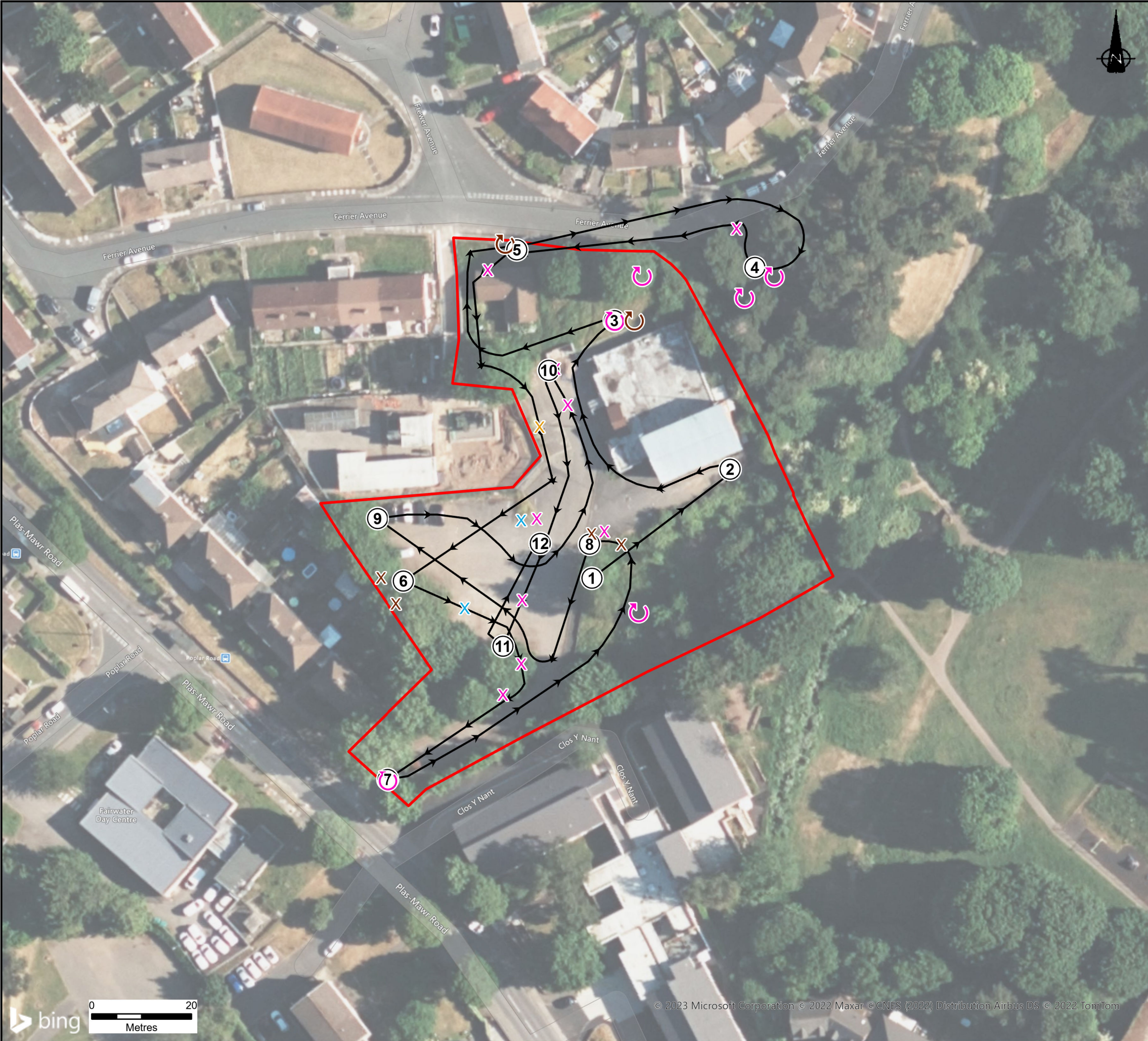
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KEY

Site Boundary (wall)

Transect Route

Listening Stop

Common Pipistrelle

Soprano Pipistrelle

Common Pipistrelle

Soprano Pipistrelle

Myotis species

Noctule

Notes:

Boundaries are indicative.

Classifications in accordance with Handbook for Phase 1 Habitat Survey - A technique for Environmental Audit (JNCC 2010) 2016.

REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
CLIENT					
CARDIFF COUNCIL					
PROJECT					
FAIRWATER SOCIAL CLUB					
DRAWING TITLE					
WALKED TRANSECT SURVEY RESULTS JULY 2021					
DRG No.		CA12473-007		REV	A
DRG SIZE		A3		SCALE	1:750
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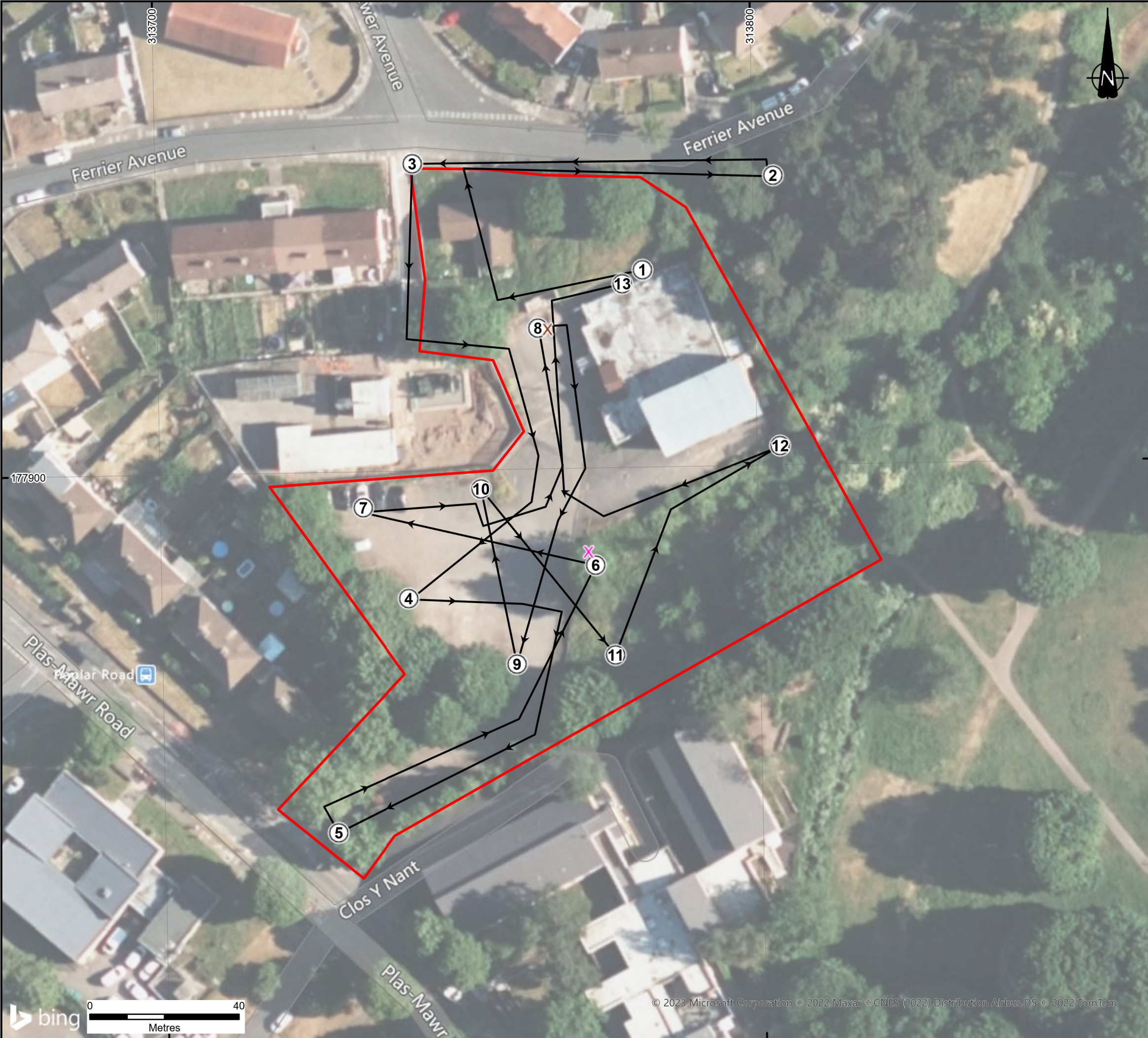
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KEY

- Site Boundary
- Common Pipistrelle
- Soprano Pipistrelle
- Transect Route
- Listening Stop

Notes:

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

REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
CLIENT					
CARDIFF COUNCIL					
PROJECT					
FAIRWATER SOCIAL CLUB 2022					
DRAWING TITLE					
WALKED TRANSECT SURVEY RESULTS – OCTOBER 2022					
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DRG SIZE		A3		SCALE 1:1,000	
DRAWN BY		EL		DATE 14/03/2023	
		CHECKED BY AS		APPROVED BY JH	



KEY

- Site boundary
- Automated detector

Notes:

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

REVISION	DETAILS	DATE	DRAWN	CHKD

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PROJECT	FAIRWATER SOCIAL CLUB 2022
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DRAWING TITLE	AUTOMATED DETECTOR LOCATION PLAN
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