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CARDIFF COUNCIL

NEW PENN, CARDIFF

ECOLOGICAL APPRAISAL

JULY 2022, REVISED MAY 2023

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

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CARDIFF COUNCIL

NEW PENN, CARDIFF

ECOLOGICAL APPRAISAL

JULY 2022, REVISED MAY 2023

PREPARED BY:

Tania Smith Senior Ecologist

REVIEWED & APPROVED BY:

Jo Honour Technical Director pp

MAY 2023 VERSION 2.0
PREPARED BY:

Clare Wheeler Principal Ecologist

REVIEWED AND APPROVED BY:

Jo Honour Technical Director

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CONTENTS

APPENDICES

DRAWINGS	TITLE	SCALE
CA12409-002/B	Site Location Plan	1:15,000@A3
CA12409-004/B	Phase 1 Habitat Plan	1:500@A3
CA12409-003/B	Waterbody Location Plan	1:5,000@A3
CA12409-007	Biodiversity Mitigation and Enhancement Plan	1:600 @A3

EXECUTIVE SUMMARY

Wardell Armstrong LLP (WA) was commissioned by Cardiff Council to carry out a Preliminary Ecological Appraisal (PEA); which included a Preliminary Ground Level Roost Assessment (PGLRA) of trees and Preliminary Roost Assessment (PRA) of buildings for bat roosts at the proposed development site (hereafter referred to as the 'site') located at the closed New Penn Public House, Brynfedw, Llanedeyrn, Cardiff CF23 9PX. The site is centred on approximate National Grid Reference ST 19882 80527.

WA was commissioned by Cardiff Council to revise this report in May 2023 to include an assessment of effects for the proposed development.

The site comprises; an extensive two storey building, hardstanding, poor semi-improved grassland, an intact species poor hedgerow, broadleaved scattered trees, and includes broadleaved woodland (ancient semi-natural woodland) on the periphery of the site which forms part of Llanedeyrn Woodland Complex Site of Importance for Nature Conservation (SINC). The site is located within a residential area.

The Rhymney River Section Site of Special Scientific Interest (SSSI), Llanishen Reservoir SSSI, Llanishen and Lisvane Reservoir Embankments SSSI, Howardian Local Nature Reserve (LNR) and Nant Fawr Corridor LNR are located within 2km of the site. Part of the Llanedeyrn Woodland Complex SINC is adjacent to the site along the southern boundary. Additionally, there are 27 non-statutory sites of nature conservation value located within 2km of the site.

The desk study has identified records for protected and notable species including bats, badger *Meles meles*, breeding birds, common reptiles, European hedgehog *Erinaceus europaeus*, amphibians, hazel dormouse *Muscardinus avellanarius*, otter *Lutra lutra*, invertebrates and protected plant species within 2km of the site.

Receptors which the PEA has identified may be subject to adverse effects in the absence of mitigation are as follows:

- Non-statutory designations (Llanedeyrn Woodlands Complex SINC);
- Broadleaved Scattered Trees;
- Bats;
- European hedgehog; and
- Breeding birds.

The building, B1 was subject to a dusk emergence survey in July 2022, and a separate dawn re-entry survey in August 2022. Three common pipistrelles and one soprano pipistrelle bats

were observed emerging or re-entering B1 during the July/August 2022 emergence/re-entry surveys. As three confirmed low status, non-breeding summer day / transitional roosts for common and soprano pipistrelle bats were identified during these surveys, demolition of the building can only be undertaken following approval of a bat mitigation licence from Natural Resources Wales (NRW).

The results of the Hibernation Survey suggest the absence of hibernating bats from the basement of Building B1, however the potential for hibernating bats remains. Due to this, precautions will be taken prior to and during development works. This includes sealing entrances to the basement prior to November 2023 to prevent the winter colonisation by bats.

There is the potential for significant adverse effects to arise on non-statutory designated sites, broadleaved scattered trees, bats, European hedgehogs and breeding birds.

Implementation of a Construction Environmental Management Plan (CEMP) will ensure no potential significant effects on Llanedeyrn Woodland SINC adjacent to the site could arise during the construction phase of the development from damage by construction works, temporary increases in dust and water pollution. The CEMP will also include mitigation to minimise potential adverse effects to retained trees, nesting birds, and hedgehogs. Implementation of a sensitive lighting scheme will ensure no significant light spill on the adjacent Llanedeyrn Woodland SINC to protect bats and birds.

With the implementation of suitable mitigation, no significant residual effects on these ecological features are anticipated.

In accordance with the requirements of the Planning Policy Wales 2021 and British Standard 42020:2013 opportunities for ecological enhancements are presented in Section 5 of this report which includes the provision of a Biodiversity Mitigation and Enhancements Plan drawing.

1 INTRODUCTION

1.1 Terms of Reference

1.1.1 Wardell Armstrong LLP (WA) was commissioned by Cardiff Council to carry out a Preliminary Ecological Appraisal (PEA), which included a Preliminary Ground Level Roost Assessment (PGLRA) of trees and Preliminary Roost Assessment (PRA) of buildings for bats, at the proposed development site (hereafter referred to as the 'site') located at the closed New Penn Public House, Brynfedw, Llanedeyrn, Cardiff CF23 9PX. The site is centred on approximate National grid reference ST 19882 80527. The location of the site is shown on Drawing CA12409-002 (Site Location Plan).

1.1.2 WA was commissioned by Cardiff Council to revise this report in May 2023 to include an assessment of effects for the proposed development.

1.1.3 The PEA was produced with reference to current guidelines for preliminary ecological appraisal (Chartered Institute of Ecology and Environmental Management (CIEEM, 2017)) and British Standard (BS) 42020:2013 (BSI, 2013) which involves the evaluation of potential ecological constraints based on Extended Phase 1 (Joint Nature Conservation Committee (JNCC, 2010)) survey data and background desk study.

1.1.4 The revised report has been produced with reference to current guidelines for 'Guidelines for Ecological Impact Assessment (EcIA) in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, version 1.2, (CIEEM, 2022)' hereafter referred to as the 'CIEEM guidelines' and British Standard (BS) 42020:2013 (BSBI, 2013) which involves the evaluation of potential ecological constraints based on Extended Phase 1 Habitat Survey (JNCC; Joint Nature Conservation Committee, 2010) survey data and background desk study.

1.2 Scope of Report

1.2.1 The purpose of a PEA is to satisfy the requirement of Planning Policy Wales 2021 and the Cardiff Local Development Plan 2006 -2026 to identify the likely presence of ecological receptors within or near the site that could be subject to adverse effects arising from the proposed development. Certain species, habitats and nature conservation sites receive legislative protection which is detailed fully within Appendix 1.

1.2.2 A PEA report also seeks to identify any requirement for further specialist survey where the initial assessment cannot be relied upon to adequately determine presence or

reliably infer absence of protected species/taxa. An indicative assessment of potential adverse effects is provided, although this is not a substitute for full Ecological Impact Assessment (CIEEM, 2018) which may be required to fully inform any subsequent planning application along with additional (Phase 2) surveys and assessments.

1.2.3 The purpose of the revised ecological appraisal is a process of identifying, quantifying and evaluating potential effects of development on habitats, species and ecosystems. Ecological appraisal supports implementation of national biodiversity strategies and national planning policies for safeguarding biodiversity and supporting the delivery of sustainable development. This assessment demonstrates how the project accords with relevant planning policy and legislation.

1.1.1 The purpose of this report is to provide an ecological appraisal which includes:

- Details of relevant national and local planning policy with regards to nature conservation and relevant legislative background;
- Description of survey and assessment methodology;
- A description of the baseline conditions for the application site;
- An evaluation of the application site in terms of its value for nature conservation;
- An assessment of potential ecological impacts of the proposed development including habitat loss and fragmentation, disturbance and potential off-site impacts and whether those impacts are likely to result in significant effects on Important Ecological Features;
- Proposed mitigation measures in terms of significant adverse effects on Important Ecological Features;
- A description of measures that can be implemented to enhance biodiversity; and
- Identification of residual effects taking into account proposed mitigation measures.

1.3 Site Context

1.3.1 The site comprises; an extensive two storey building, hardstanding, poor semi-improved grassland, an intact species poor hedgerow, broadleaved scattered trees, and includes broadleaved woodland (ancient semi-natural woodland) on the periphery of the site which forms part of Llanedeyrn Woodland Complex Site of Importance for Nature Conservation (SINC).

1.3.2 The site is within a residential area. Circle Way West road is adjacent to the site along the north-west boundary, Brynfedw road is adjacent to the north-eastern boundary of site. A parcel of ancient semi-natural woodland is located directly south-west and south of the site.

1.4 Description of Development

1.4.1 The proposed development is for a residential housing scheme. Further details are provided under Section 4.

2 METHODOLOGY

2.1 Desk Study

2.1.1 The desk study was informed by a review of existing available information provided by Aderyn (Local Environmental Records Centre) Wales' Biodiversity Information and Reporting Database, via South-East Wales Biological Records Centre (SEWBReC) in March 2022 for a 2km search radius from the site boundary. Satellite and Ordnance Survey (OS) mapping was also used to gain contextual habitat information and identify aquatic features within 500m of the site. Tree Preservation Orders (TPO) were informed by review of information provided by Cardiff Council website.

2.1.2 Specific information was sought for:

- Statutory designated sites;
- Locally designated (non-statutory) sites;
- Ancient woodland[1];
- Section 7 (S.7) Habitats and Species of Principal Importance[2];
- Legally protected species; and
- Invasive species (covered by UK legislation).

2.1.3 The Natural Resources Wales Site Checker[3] website and the Multi Agency Geographic Information for the Countryside (MAGIC) website[4] were utilised to gather data on the National Site Network sites.

2.2 Extended Phase 1 Habitat Survey

2.2.1 An Extended Phase 1 Habitat Survey of the site was undertaken by a WA senior ecologist on 11th April 2022 and updated 2nd May 2023, and broadly followed the techniques outlined in the '*Handbook for Phase 1 Habitat Survey*' (Joint Nature

[1] As defined by Natural England in their Inventory of Ancient Woodlands http://www.gis.naturalengland.org.uk/pubs/gis/tech_aw.htm

[2] Species or habitats of principal importance for the conservation of biodiversity listed on Section 7 (S.7) of the Environment Wales Act 2016

[3] https://naturalresources.wales/guidance-and-advice/environmental-topics/wildlife-and-biodiversity/protected-areas-of-land-and-seas/find-protected-areas-of-land-and-sea/?lang=en

[4] https://magic.defra.gov.uk/ (Accessed November 2021)

Conservation Committee, 2010) and the '*Guidelines for Baseline Ecological Assessment'* (institute of Environmental Assessment, 1995).

2.2.2 Each of the main habitats was classified according to the relevant criteria including vegetation composition expressed according to the DAFOR[5] system. In addition to mapping and description of habitats, incidental observations of protected and/or notable species and the potential for such species to occur on site (and in the surrounding landscape where relevant) were also recorded for mapping and data collection.

2.2.3 Target notes (TN) are used to describe the habitat and species composition and highlight features of ecological interest. Specific habitat features are mapped on Drawing Number CA12409-004 Rev B (Phase 1 Habitat Plan).

2.2.4 A separate waterbody location plan, showing waterbodies located within 500m of the survey area, is provided on Drawing Number CA12409-003 Rev B (Waterbody Location Plan).

2.3 Bats: Preliminary Roost Assessment of Buildings and Trees

2.3.1 In conjunction with the Extended Phase 1 Habitat Survey undertaken on 11th April 2022, an internal and external Preliminary Roost Assessment (PRA) of the buildings on site and a Preliminary Ground Level Roost Assessment (PGLRA) of the trees on site was also undertaken by a senior ecologist from WA. The individual trees / tree groups and buildings are shown on Drawing Number CA12409-004/B (Phase 1 Habitat Plan). For full details see Appendix 3 – Preliminary Roost Assessment and Preliminary Ground Level Roost Assessment Results.

2.3.2 The aim of the PRA and PGLRA surveys was to assess the potential of the buildings to support roosting bats, identify any evidence of roosting bats and if there is a requirement for further surveys.

2.3.3 Any features determined to be suitable for roosting bats and the overall condition of the trees and building were noted. Field signs such as droppings, feeding remains and dead or living bats were also recorded.

2.3.4 A PGLRA of the trees included a search for the following features:

[5] D – Dominant, A – Abundant, F – Frequent, O- Occasional, R-Rare.

- Suitable roosting features: natural holes, woodpecker holes, cracks/splits in major limbs and the trunk, holes/cavities, dense ivy growth, dense epicormic growth, bird, and bat boxes; and
- Signs indicating possible bat use: scratches and/or staining at entrance points, bat droppings, distinctive smell of bats, smoothing of surface around cavity.

2.3.5 Equipment used for the PRA and PGLRA included a torch and binoculars.

2.3.6 The buildings and trees located on site were categorised using the assessment criteria in Table 4.1 of the 3rd ed of the BCT Guidelines (Collins 2016)[6] as set out below:

- **High:** Structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitats.
- **Moderate:** Structure or tree with one or more potential roost sites that could be used by numbers of bats due to their size, shelter, protection, conditions, and surrounding habitats, but unlikely to support a roost of high conservation concern.
- **Low:** Structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e., unlikely to be suitable for maternity or hibernation).

  A tree of sufficient size and age to contain Potential Roost Features (PRFs) but with none seen from the ground or features seen with only very limited roosting potential.
- **Negligible:** Structure or tree with no potential to support bats.

2.3.7 The surrounding habitat both within and adjacent to the site was also surveyed to assess its potential to be used by foraging and commuting bats. This information was combined with a review of aerial photography and OS data to provide contextual information about the local habitat and its likely use by bats.

[6] Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

2.4 Bats: Surveys (Building Emergence/Re-entry Surveys and Hibernation Survey)

2.4.1 The PRA identified that the disused building has a moderate suitability to support roosting bats during their active season (April to October) and has potential to support hibernating bats (November to March).

2.4.2 Survey methodologies for the building emergence/re-entry surveys are detailed in Wardell Armstrong, New Penn Cardiff, Bat Report – Building 1 – Emergence / Re-entry Surveys, February 2023 provided in Appendix 4.

2.4.3 The hibernation survey methodologies are provided in report Wardell Armstrong, New Penn Bat Hibernation Survey Report, April 2023 attached as Appendix 5.

2.5 Assessment of Effects Methodology and Significance Criteria

Determining Value of Ecological Receptors

2.5.1 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.

2.5.2 The assessment of the nature conservation value of the site has been based on the PEAR and the widely applied criteria described in 'A Nature Conservation Review' (Ratcliffe, 1977). These include i) Size; ii) Diversity; iii) Naturalness: iv) Typicalness; v) Rarity and vi) Potential Value. A summary of these criteria is set out in Appendix 6.

2.5.3 The levels of conservation value are detailed in Table 1.

Table 1: Nature Conservation Value

Category Value	Relevance to Site	Examples
International	EU	Special Areas of Conservation, Special Protection Areas, RAMSAR Sites (or a site proposed for, or considered worthy of such a 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 habitat type listed in Annex 1 of the Habitats Directive or a smaller area of such habitat which are essential to maintain the viability of a larger whole, a regularly occurring

Table 1: Nature Conservation Value		
Category Value	**Relevance to Site**	**Examples**
		substantial population of a nationally important species (e.g. listed on Section 7 of the Environment (Wales) Act (2016)A site where field study shows that the site would meet published SSSI Selection Guidelines.
Regional	South East Wales	Areas of internationally or nationally important habitat 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 site designated as a statutory county wildlife site (Local Nature Reserve) or a non-statutory designated site (e.g., Sites of Importance for Nature Conservation (e.g. Local Wildlife Sites (LWS), County Wildlife Sites (CWS)) or a site listed on the Ancient Woodland Inventory (AWI). A site where field study shows the site would meet published county LWS/CWS selection criteria. Viable areas of priority habitat identified in the LBAP where protection of all areas of that habitat a published target is; a regularly occurring, locally significant population of species which is listed in a County Red Data Book or LBAP on account of its regional rarity or localisation.
District	Llanedeyrn	A site designated as a non-statutory district wildlife site. A good example of 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. Value within the context of the survey area (e.g. small areas of semi-improved grassland, isolated mature trees).

2.5.4 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.

2.5.5 The assignment of undesignated features, such as UK Priority 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.

2.5.6 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 negative effects. This affects their value.

Evaluation of Significance

2.5.7 The ecological appraisal follows the methodologies within the CIEEM guidelines.

2.5.8 CIEEM Guidelines paragraph 4.1 indicates that the assessment of impacts should take into account both the value and sensitivity of ecological receptors:

> *'One of the key challenges in EcIA is to decide which ecological features are important and should be subject to detailed assessment. Such ecological features will be those that are considered to be important and potentially affected by the project.*'

2.5.9 Paragraph 5.8 of the CIEEM Guidelines indicates that it is important to assess the significance of the effects of impacts upon each ecological feature:

> ***'****There could be any number of possible impacts on important ecological features arising from a development. However, it is only necessary to describe in detail the impacts that are likely to be significant'.*

2.5.10 For the purpose of this report, it has been assumed that each important ecological receptor likely to be encountered within the site and the wider landscape will have potential to be affected by the proposed development. The assessment of likely significant effects within this report will therefore focus upon a receptor's value and the significance of effects upon it.

2.5.11 The CIEEM guidelines define a significant effect as:

> '*An effect that either supports or undermines biodiversity conservation objectives for important ecological features'.*

Characterising Ecological Effects

2.5.12 Effects are described and assessed with reference to the following characteristics:

- Positive or negative – is the change in accordance with nature conservation policy regarding that ecological feature?
- Extent – over what area will the impact occur?
- Magnitude – what will the quantifiable effect in terms of size, amount, intensity and volume be on ecological features?
- Duration – over what periods of time will the effect last?
- Timing – when would the effect occur?
- Frequency – how often over a period of time would the effect occur?
- Reversibility – can the effects be recovered from over a reasonable timescale?

Evaluation of Significance – Designated Sites

2.5.13 The CIEEM Guidelines detail how ecologically significant effects should be determined for designated sites, ecosystems, habitats and species.

2.5.14 For designated international sites, use can be made of published conservation objectives for each site against which the significance of impacts can be assessed.

2.5.15 For sites of national value, published SSSI guidelines for the selection of SSSIs, the SSSI site citation and Natural Resources Wales published "Operations Requiring Consultation" documents and any "Your Special Site and its Future" documents can be assessed.

2.5.16 Designated conservation sites of County value (i.e. Local Wildlife Sites (LWS)) will have been assessed for inclusion by a partnership of organisations, usually associated with the county environmental record centre. The citation and/or reasons for inclusion of the site as a LWS can be requested to assist with assessing the significance of effects upon such sites.

2.5.17 For sites of lesser value, including district/local, there may be available information on their rationale for selection based upon the Radcliffe criteria. These are all useful resources to assist with the assessment of significance of an effect on a district or local designated site.

Evaluation of Significance – Ecosystems

2.5.18 No published conservation objectives or designation criteria are normally available for ecosystems, however, determining whether effects on ecosystems are significant should be based upon whether or not the effect is likely to result in a change in

ecosystem structure and function. This is based upon consideration of whether or not the impacts will result in an effect on:

- Processes or key characteristics; and / or
- The nature, extent, structure and function of component habitats; and / or
- The average population size and viability of component species.

Evaluation of Significance – Habitats and Species

2.5.19 Habitat types listed on Annex 1 of the Habitats Directive and species listed on Annex II have published accounts which provide information on their status and distribution in the UK as well as a description and summary of ecological characteristics. This information can be used against which to assess the significance of effects on their conservation status, even if they are not designated.

2.5.20 For habitats and species of lesser value, published information is less readily available, however, reference to UKBAP priority habitat and species action plans, county or local BAPs will provide information on the conservation status of habitats and species against which impacts can be assessed for their effects on the extent, structure and function of habitats and the abundance and distribution of species.

2.5.21 In addition, reports or publications, often written at the county-scale can provide useful context against which to assess the significance of impacts upon a habitat or species. For instance, County Bird Reports and County Floras will provide more detail with regard the status and current trends for birds and habitats, plants in a given area.

2.6 Nomenclature

2.6.1 Vascular plant names follow '*New Flora of the British Isles*' (Stace, 2019) with vernacular names as provided in the Botanical Society of the British Isles website (BSBI, 2013)[7]. The common and scientific name of species/taxa is provided (if available) when first mentioned in the text, with only the vernacular name referred to thereafter.

2.7 Assessment Limitations

2.7.1 Ecological surveys are limited by factors that affect the presence of plants and animals such as time of year, weather, migration patterns and behaviour. The surveys were undertaken in April/May and therefore represents a valid sample of ecological

[7] http://rbg-web2.rbge.org.uk/BSBI/intro.php

evidence present for that date/season (the optimum recommended period for habitat surveys is April to September). The report is not designed, nor is it required to present a complete inventory of flora/fauna.

2.7.2 The absence of desk study records cannot be relied upon to determine absence of a particular species/habitat. Often, the absence of records is a result of under-recording within the given search area.

2.7.3 During the Preliminary Roost Assessment Survey on the building on site an internal survey of the building was carried out. The internal spaces, basement, boiler room and eave storage cupboards were surveyed, however the roof void was not accessed during this visit. As a large amount of the internal space was surveyed, and the external survey identified potential roost features categorising the building as moderate and requiring further survey, the survey effort is deemed adequate.

2.8 Quality Assurance & Environmental Management

2.8.1 The surveys and assessments have been overseen by and the report checked and verified by a full member of CIEEM, who is bound by its code of professional conduct. All surveys and assessments have been undertaken with reference to the recommendations given in BS 42020, and as stated within specialist guidance, as appropriate and referenced separately.

3 RESULTS AND EVALUATION

3.1 Statutory and Non-Statutory Designated Sites

3.1.1 Desk study results for designated sites within 2km search radius of the site are evaluated in Table 1 below.

3.1.2 Sites which are considered potentially sensitive to proposed works by virtue of the sensitivity of supported species or habitat assemblages, the distance/ecological connectivity to the site and the nature of the perceived impacts are highlighted in **bold text** and are discussed in the final sections of the report. Designated sites are mapped on a drawing provided by SEWBReC attached as Appendix 2 – Sites Designated for Conservation Within 2km.

3.1.3 Sites for which potential adverse effects are not anticipated are excluded from further assessment.

Table 1: Designated Sites Evaluation.				
Site Name and Status[8]	**Reason for Designation**	**Approximate Distance and Location from the site**	**Nature Conservation Value**	**Potential Adverse Effects?**
Statutory Designations				
Nant Fawr Corridor LNR	The site encompasses a river corridor surrounded by urban areas that extends through woodland, open meadow, and marsh, and includes land surrounding the SSSI designated Llanishen and Lisvane reservoirs.	1.2km north-west of the site.	National	No – The site is disconnected from the designation by residential housing and given the distance from the site, and due to the scale of the proposed development, it is considered unlikely to have a potential adverse effect either directly or indirectly, on the qualifying features of this designation.
Howardian LNR	The site is a relic estuarine habitat. It is composed of a mosaic of woodland, wildflower meadow, ponds, and reed beds. The LNR is designated for its wildlife interest (including hazel dormice *Muscardinus avellanarius*) and public enjoyment.	1.4km south of the site.	National	No – The site is disconnected from the designation by residential housing and the A48 (Eastern Avenue) and given the distance from the site the scale of the proposed development is considered unlikely to have a potential adverse effect either directly or indirectly, on the qualifying features of this designation.
Llanishen and Lisvane Reservoir	The site is composed of a mosaic of neutral and calcareous semi-improved grassy embankments, with areas of rank grassland. The SSSI is designated for its	1.4 km north-west of the site. Approximate central grid reference ST 18918 82109.	National	No – The site is disconnected from the designation by residential housing and due to the scale of the proposed development, it is considered unlikely to have a potential

[8] **SSSI** - Site of Special Scientific Interest, **LNR** – Local Nature Reserve, **SINC -** Site of Importance for Nature Conservation, **LWS** – Local Wildlife Site

Table 1: Designated Sites Evaluation.				
Site Name and Status[8]	**Reason for Designation**	**Approximate Distance and Location from the site**	**Nature Conservation Value**	**Potential Adverse Effects?**
Embankments SSSI	diverse assemblage of grassland fungi, including over 25 species of waxcap Hygrocybe spp. Llanishen and Lisvane Reservoir Embankments SSSI is notified for its overwintering bird interest.			adverse effect either directly or indirectly, on the qualifying features of this designation.
Rhymney River Section SSSI	The site is composed of a short tidal stretch of the Rhymney River Estuary in Cardiff, it includes 300m of river and a steep bank. The SSSI is designated for its geological and palaeontological significance.	1.75km south-east of the site. Approximate central grid reference ST 2179 0202.	National	No – The site is disconnected from the Rhymney River and Rhymney River Section SSSI by the A48 (Eastern Avenue) and given the distance from the site, the proposed development is considered unlikely to have a potential adverse effect either directly or indirectly, on the qualifying features of this designation.
Llanishen Reservoir SSSI	Llanishen Reservoir is located south of Lisvane reservoir, and it's designated for its overwintering birds, including pochard *Aythya ferina*, coot *Fulica atra*, grebes *Podicipedidae* and passage migrants.	1.7km north-west of the site. Approximate central grid reference ST 18722 81718.	National	No – The site is disconnected from the designation by residential housing and the proposed development is considered unlikely to have a potential adverse effect either directly or indirectly, on the qualifying features of this designation.

Table 1: Designated Sites Evaluation.				
Site Name and Status[8]	**Reason for Designation**	**Approximate Distance and Location from the site**	**Nature Conservation Value**	**Potential Adverse Effects?**
Non- Statutory Designations				
Llanedeyrn Woodlands Complex SINC	**The site is composed of a collection of approximately 12 woodland areas distributed around Llanedeyrn. The SINC is designated for its woodland features and areas of ancient semi-natural woodland.**	**A section of the SINC is present adjacent to the site along the southern boundary. Approximate National Grid Reference ST 19856 80497.**	**County**	**Yes – As the site has direct connections to the SINC, with a section of the SINC present adjacent to the site along the southern boundary, it is likely that the proposed development may lead to a potential adverse effect on the qualifying features of this designation. Either through construction activities (e.g., habitat loss, dust, and water quality impacts), or during the operational phase (increased recreational use within the SINC, air quality and water quality impacts).**

3.1.4 The below details further non-statutory Sites of Importance for Nature Conservation (SINCs) within 2km of the site:

- Gwern-y-Bendy
- Llanishen Reservoir
- Lower Rookery Wood
- Roath Park Lake
- Roath Park Wild Gardens
- Swan Mear Wood
- Coed-y-Cwar
- Discovery Wood
- Fishpond Wood
- Llanishen Reservoir Grassland and Scrub
- Nant Fawr Meadows
- Nant-y-Draenog
- Rhyd-y-Pennau Complex
- Rhymney River Valley Complex
- Scott Wood
- Lisvane Reservoir Wood
- Cathays Cemetery
- Ty Llwyd Meadows
- Heath Wood & Pond
- Llanishen Brook (south)
- Pontprennau Wood
- River Rhymney
- Nant Fawr Community Woodlands
- Coed-ty-Llwyd
- Coed-y-Caeau
- Nant Glandulais SINC
- Roath Brook

3.1.5 None of these designated sites are located adjacent or less than 0.6km from the site or are disconnected from the site by residential housing and / or the A48 (Eastern Avenue). Therefore, the proposed development is considered unlikely to have a potential adverse effect either directly or indirectly, on the qualifying features of these designations.

3.1.6 **There are multiple areas of ancient woodland present within 2km of the site, the majority are associated with Llanedeyrn Woodland Complex SINC. The nearest area of ancient semi-natural woodland is located adjacent to the southern boundary of the site within Llanedeyrn Woodland Complex SINC. Therefore, the proposed works are considered likely to have an adverse effect on this habitat.**

3.1.7 There are no tree preservation orders (TPO) within or adjacent to the site.

3.2 Habitats

3.2.1 All habitats within the site are described in Table 2, together with an indication of their Section 7 status, according to the definitions given in *UK BAP Priority Habitat Descriptions* (Anon 2008 updated 2010). The table also provides an evaluation of the sensitivity of the habitats relative to the proposed works.

3.2.2 Habitats which have the potential to be subject to adverse effects are indicated with **bold** text and are discussed in the latter sections of the report. Habitats for which potential adverse effects are not anticipated are excluded from further assessment.

3.2.3 The location and extent of habitats is shown on Drawing Number CA12409-004/B (Phase 1 Habitat Plan).

3.2.4 A review of OS data has identified two watercourses with tributaries within 500m of the site, as shown on Drawing Number CA12303-003/B (Waterbody Location Plan).

Table 2. **Habitat Description and Evaluation**			
Phase 1 Habitats (Nature Conservation Value)		**UK BAP / Section 7**	**Potential Adverse Effects?**
<u>Hardstanding (Negligible)</u> The majority of the site comprises of hardstanding, which is located in three areas of the site. A large area is located to the northwest of the public house building (B1) on site, this was previously used as a car park for the pub. There is also an area which has gravel spread over the hardstanding where pub benches and areas of Introduced shrub are present. Hardstanding is also present as pathways around the building. The second area of hardstanding is located to the southeast of B1 and is in use as a road and car parking area for neighbouring residents of the apartment building off site. The third area of hardstanding is in use as a footpath. This connects the residential areas to the east and west of Circle Way West Road via a subway to the south-west of the site, off site. The pathway is parallel to Llanedeyrn Woodland Complex SINC, along the southwestern boundary of the site.	 	X	No – this habitat type is not of conservation value.

Table 2. **Habitat Description and Evaluation**			
Phase 1 Habitats (Nature Conservation Value)		**UK BAP / Section 7**	**Potential Adverse Effects?**
<u>Buildings (Negligible)</u> There is one building present on site. The building (B1) is a derelict public house that is closed to the public and is not in use. B1 is a two-storey brick building, built in the 1960's. The roof is a complex shape, with two main gable roofs and connecting flat roofs. Internally the building was used as a public house on the ground floor (with basement) and an apartment on the second floor. Refer to Appendix 3 – PRA and PGLRA results.		X	No - this habitat type is not of conservation value. **However, see Table 3 re breeding birds and bats.**

Table 2. **Habitat Description and Evaluation**			
Phase 1 Habitats (Nature Conservation Value)		**UK BAP / Section 7**	**Potential Adverse Effects?**
<u>Poor semi-improved grassland (Local)</u> Areas of poor semi-improved grassland are present on site. The grasslands are managed and regularly mown to a short sward, they are mainly used as road-side verges that are present close to the north, north-west, west, and south-western site boundaries. They are adjacent to hardstanding on site and to the adjacent roads offsite. The roadside verge in the south-western part of the site has a steep south facing bank adjacent to the hardstanding pathway and woodland. An area of grassland adjacent to B1 and hardstanding on site, and residential housing off site is present within the south-eastern part of the site. An updated red line boundary was provided to WA and an additional habitat survey was undertaken of this area on 2nd May 2023. The habitats were deemed to be the same as those further south, comprising poor semi-improved grassland which is regularly mown to a short sward.		X	No – this habitat is common and widespread and is not considered to be of significant conservation value.

Table 2. **Habitat Description and Evaluation**			
Phase 1 Habitats (Nature Conservation Value)		**UK BAP / Section 7**	**Potential Adverse Effects?**
Grass species present include perennial rye grass *Lolium perenne* (D) and Yorkshire fog *Holcus lanatus* (A). Other species present include broadleaved dock *Rumex obtusifolius* (O), cleavers *Galium aparine* (R), common ragwort *Jacobaea vulgaris* (O), creeping buttercup *Ranunculus repens* (O), creeping cinquefoil *Potentilla reptans* (R), daisy *Bellis perennis* (O), dandelion *Taraxacum* sp. (F), lesser celandine *Ficaria verna* (O), oak *Quercus sp.* saplings (R), petty spurge *Euphorbia peplus* (F), ribwort plantain *Plantago lanceolata* (O), vetch species *Vicia* sp. (O) and white clover *Trifolium repens* (O).			

Table 2. **Habitat Description and Evaluation**			
Phase 1 Habitats (Nature Conservation Value)		**UK BAP / Section 7**	**Potential Adverse Effects?**
<u>Intact hedgerow – species-poor (Local)</u> A non-native, intact species hedgerow is present in the north-eastern part of the site bordering road-side verges and gravel hardstanding. The hedgerow is approximately 2.5m high and previously managed. It is predominantly non-native wintergreen barberry *Berberis julianae* (D) with stands of willow species *Salix* sp. (R).		X	No - A priority hedgerow consists predominantly (80% or more cover) of at least one woody UK native species. This hedgerow on site is predominantly non-native and is not considered to be a priority habitat. See Table 3 re bats and breeding birds

Table 2. **Habitat Description and Evaluation**			
Phase 1 Habitats (Nature Conservation Value)		**UK BAP / Section 7**	**Potential Adverse Effects?**
<u>Scattered trees – (broadleaved) (Local)</u> There are several areas of scattered trees across the site, mainly in the western and north-western parts of the site, in the road verges which includes mature trees. Tree species include ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus,* Norway maple *Acer platanoides* and wild cherry *Prunus avium.* To the southeast of the building on site are scattered young, semi-mature and mature trees. Tree species include young and semi-mature ash and grey alder *Alnus incana*, and a mature ash, 15.5m high. Detailed descriptions of the semi-mature and mature trees on site are provided in Appendix 3 PRA and PGLRA Results.		X	No – individual trees have no ecological conservation value. **However, these trees do provide many ecological benefits including providing foraging and refuge habitat for a variety of fauna species (see Table 3). Furthermore, although the individual trees on site are of limited intrinsic ecological value, it would be necessary to undertake a BS5837 Tree Survey in the event that their removal, damage, or incursion into root zone is unavoidable.**

Table 2. **Habitat Description and Evaluation**			
Phase 1 Habitats (Nature Conservation Value)		**UK BAP / Section 7**	**Potential Adverse Effects?**
<u>Introduced shrub (Local)</u> Small areas of introduced shrub surround three lampposts in raised planting beds that are present within gravel hardstanding in the north-western part of the site. Species presents include common ivy *Hedera helix* and grey santolina *Santolina decumbens mill.*		X	No - this habitat type is not of conservation value.

Table 2. **Habitat Description and Evaluation**			
Phase 1 Habitats (Nature Conservation Value)		**UK BAP / Section 7**	**Potential Adverse Effects?**
<u>Ancient Semi-natural Woodland (County)</u> **A small section of broadleaved semi-natural woodland that forms part of the wider Llanedeyrn Woodland Complex SINC, is present within and along the south and southwestern boundary of the site. The SINC is a restored ancient woodland site. The SINC is composed of a collection of approximately 12 woodland areas distributed around Llanedeyrn. The SINC is designated for its woodland features.** **The species present at the ground layer within the strip of woodland within the site boundary includes but are not limited to; bramble (F), cleavers (O), common ivy (F) common nettle (O), hogweed *Heracleum sphondylium* (O), lesser celandine (O), lords and ladies *Arum maculatum* (O), snowdrop *Galanthus nivalis* (O), and Spanish bluebell *Hyacinthoides hispanica* (O). dead wood and fallen trees and leaf litter are also present.** **Tree species include but are not limited to ash, hazel *Corylus avellana*, holly, sycamore, and willow species.**		✓	**Yes – Depending on development proposals and extent of habitat loss.** **See Table 3 re breeding birds, hedgehogs and bats.**

3.3 Species

3.3.1 Protected and Section 7 priority species are evaluated in Table 3 below, based on the desk study records, presence, extent, and viability of supporting habitat, ecological connectivity and perceived nature and extent of effects.

3.3.2 Species which have the potential to be subject to adverse effects are indicated with **bold text** and are discussed in the latter sections of the report. Species/taxa for which potential adverse effects are not anticipated are excluded from further assessment.

Table 3: Protected Species Evaluation				
Species/taxa	**Desk Study**	**Status[9]**	**Supporting Habitat**	**Potential Adverse Effect?**
Bats *Chiroptera*	**Roost records within 2km include:** • **Common pipistrelle *Pipistrellus pygmaeus* roost (2012) 180m north** • **Soprano pipistrelle *Pipistrellus pygmaeus* (possible roost) (2014), roost 1.3km north** • **Noctule *Nyctalus noctula* roost (2011) 1.4km south-west** • **Soprano pipistrelle *Pipistrellus pygmaeus* roost (2011) 1.4km south-west** • **Common pipistrelle *Pipistrellus pygmaeus* roost 1.4km (2011) south-west** • **Common pipistrelle *Pipistrellus pygmaeus* roost (2011) 1.7km south-east** **Other species recorded from none roost records include soprano pipistrelle, common**	**CHSR (2), WCA5 (2), Section 7**	**Yes – Mature trees have the potential to support roosting bats. However, all trees on site were identified to be of negligible suitability during the Preliminary Ground Level Roost Assessment Survey (PGLRA).** **The building on site (B1) may have the potential to support roosting bats and was identified to be of moderate suitability during the active season and low potential for hibernating bats.** **Full results of the PGLRA and PRA are provided in Appendix 3.** **The mature trees, hedgerow, and broadleaved woodland along the north, north-west and southern site boundaries have the potential to support foraging and commuting bats.**	**Yes – If mature trees, buildings, or flight lines potentially used for roosting / foraging / commuting are impacted upon by the development.** **Consideration should also be given to the effects of lighting.** **Bats within the building are species which are widespread and common in Wales therefore are of Local value.** **Bats using the offsite woodland may be of Local -County value.**

[9] **CHSR** – Protected under Conservation of Habitats and Species Regulations 2017 (as amended) schedule in brackets, **WCA** – Fully protected under Section 9 of the Wildlife and Countryside Act (as amended) schedule in brackets, **WCA5** – Protected under Section 9, Part 5 of the Wildlife and Countryside Act only, **BA** – Protection of Badgers Act, **BAP** – Biodiversity Action Plan Priority Species, **LBAP** – Local BAP, **Section 7** – Environment (Wales) Act, 2016, **UKBR (RSPB)** - RSPB UK Red listed birds, **UKBAm (RSPB)** - RSPB UK Amber listed birds and **LBAP** – Local Biodiversity Action Plan

Table 3: Protected Species Evaluation				
Species/taxa	**Desk Study**	**Status[9]**	**Supporting Habitat**	**Potential Adverse Effect?**
	pipistrelle, noctule, Natterer's *Myotis nattereri*, Nathusius's pipistrelle *Pipistrellus nathusii*, brown long-eared *Plecotus auratus, Myotis sp.,* serotine *Eptesicus serotinus.*			
Badger *Meles meles*	Yes – 9 records of badger within 2km of the site. Nearest records are approximately 1.2km from the site in 2019, the most recent record was in 2021	BA	No – No evidence of badger activity observed. However, the semi-natural broadleaved woodland adjacent to the site could provide habitat for badgers.	Unlikely to be affected unless found to be present in the future.
Brown Hare *Lepus europaeus*	No.	Section 7	No – the habitats within the site are considered unlikely to support brown hare.	No – the habitats within the site are considered unlikely to support this species.
European hedgehog *Erinaceus europaeus*	**Yes – 57 records of hedgehog within 2km of the site. Nearest record is approximately 200m to the south of the site, recorded in 2012. The most recent record was in 2021.**	**Section 7, Bern**	**Yes - Habitats such as hedgerows and broadleaved scattered trees is suitable to support this species. wider suitable habitat to the south (broadleaved woodland) has the potential to support hedgehog.**	**Yes – potential for harm if present at the time of works. Of county value for nature conservation if present.**
Hazel dormouse *Muscardinus avellanarius*	Yes – 498 records of hazel dormouse within 2km of the site. Majority of the sightings were recorded within the hazel dormouse monitoring period between 2010-2018. The nearest and the most recent record is approximately 1.5km south-east of the site, recorded in 2020.	CHSR (2), WCA5, Section 7	No – although there are records of dormice within 2km of the site and the site does contain key food plants that dormice require (hazel, bramble etc.), the areas of suitable habitat (Llanedeyrn woodland complex SINC) along the southwestern boundary of the site lacks connectivity to suitable wider areas, with the majority of surrounding habitat being residential. Therefore, dormice are unlikely to be present.	No – this species is not considered to be present within the site.

Table 3: Protected Species Evaluation				
Species/taxa	**Desk Study**	**Status[9]**	**Supporting Habitat**	**Potential Adverse Effect?**
Eurasian Otter *Lutra lutra*	Yes- Three records of Eurasian otter within 2km of the site. The nearest and the most recent record is approximately 1.5km north-west of the site, recorded in 2020.	CHSR (2), WCA5, Section 7	No – the habitats within the site are considered unlikely to support otter. Otter is also unlikely to use the ditch outside of the site within Llanedeyrn Woodland Complex SINC, because of limited connectivity to other watercourses with suitable vegetation cover. The ditch is also disconnected from Llanishen Reservoir (where most of the current records of otter within 2km are from).	No – This species is unlikely to be present.
Water vole *Arvicola amphibius*	No.	WCA5, Section 7	No – the habitats within the site are considered unlikely to support water vole.	No – this species is unlikely to be present.
White-clawed Crayfish *Austropotamobius pallipes*	No.	WCA5, Section 7	No – the habitats within the site are considered unlikely to support white-clawed crayfish.	No – this species is unlikely to be present
Common reptiles	Yes – three species of common reptile have been recorded within 2km of the site: - Slow worm: - six records within 2km of the site. Nearest record was 1.5km south-east of the site, recorded in 2014. The most recent record was in 2021. - Grass snake: - 29 records within 2km of the site. Nearest record was 1.2km	WCA5, Bern, Section 7	No – The habitats within the site have limited potential for common reptiles apart from the intact species poor hedgerow. Due to the hedgerow's location amongst the short-mown verges and hardstanding/gravel, the site is considered unlikely to support common reptiles.	No – this species is unlikely to be present

Table 3: Protected Species Evaluation				
Species/taxa	**Desk Study**	**Status[9]**	**Supporting Habitat**	**Potential Adverse Effect?**
	north-west of the site, recorded in 2017. This was the most recent record was in 2020. - Common lizard: - one record within 2km of the site. The record was 0.9km north-west of the site, recorded in 2014.			
Great Crested Newt (GCN) *Triturus cristatus*	No.	CHSR (2), WCA5, Section 7	No – the terrestrial habitats within the site have limited potential to support GCN, with the hedgerow being of most value. However, no records of GCN were identified within 2km of the site and no ponds were identified on site or within 500m of site. Therefore, the habitats within the site are considered unlikely to support GCN.	No – this species is unlikely to be present.
Other amphibians	Yes – four species of common amphibian have been recorded within 2km of the site - Smooth newt *Lissotriton vulgaris*: - one record within 2km of the site. This record was 1.5km north-west of the site. - Common toad *Bufo bufo*: - 13 records within 2km of the site. Nearest record was 1.4km north-west of the site,	WCA (sale only), Bern, Section 7 (common toad)	No – The terrestrial habitats within the site have limited potential to support amphibians, with the hedgerow and poor semi-improved grassland being of most value. There were no ponds identified on the site or within 500m of site. Therefore, it is considered unlikely that amphibians are present on site.	No – amphibians are unlikely to be present.

Table 3: Protected Species Evaluation				
Species/taxa	**Desk Study**	**Status[9]**	**Supporting Habitat**	**Potential Adverse Effect?**
	recorded in 2017. The most recent record was in 2020. - Common frog *Rana temporaria*: - nine records within 2km of the site. Nearest record was 0.7km north of the site, recorded in 2014. The most recent record was in 2019. - Palmate newt *Lissotriton helveticus*: - six records within 2km of the site. Nearest and the most recent record was 0.5km north of the site, recorded in 2017.			
Birds	**Yes - Numerous bird records within 2km search area including WCA Schedule 1 listed species, and RSPB UK Red and amber listed birds of conservation concern.** **Incidental sightings were recorded of house sparrow *Passer domesticus* and female blackbird *Turdus merula* foraging within the intact species poor hedgerow on site.**	**WCA1, Bern, Section 7**	**Yes – Foraging and breeding habitat provided in grassland, broadleaved scattered trees, and hedgerows within the site. Building could also support nesting birds such as house sparrow or house martin *Delichon urbica.***	**Yes – Potential breeding and foraging habitat may be lost/disturbed by proposed development.**
Barn owl *Tyto alba*	No	WCA(1), Bern,	No – The habitats within the site are considered unlikely to support barn owl.	No – The habitats on site are unlikely to support this species.

Table 3: Protected Species Evaluation				
Species/taxa	**Desk Study**	**Status[9]**	**Supporting Habitat**	**Potential Adverse Effect?**
		Section 7		
Invertebrates	Yes – numerous records within 2km of the site for species listed in Section 7 including but not limited to: knot grass *Acronicta rumicis*, centre-barred sallow *Atetmia centrago*, small square-pot *Diarsia rubi*, dusky thorn *Ennomos fuscantaria*, garden dart *Euxoa nigricans*, powdered quaker *Orthosia gracilis*, white ermine *Spilosoma lubricipeda*, the cinnabar *Tyria jacobaeae*, dark-barred twin-spot carpet *Xanthorhoe ferrugata*, small heath *Coenonympha pamphilus*, small phoenix *Ecliptopera silaceata*	LBAP, Section 7	Yes – Habitats including the hedgerow, scrub, and grassland habitats are considered suitable to support invertebrates. Whilst Section 7 invertebrate species have been recorded within 2km of the site and although suitable habitat and / or food plants are available on site for some of these species, including but not limited to knotgrass, dusky thorn and cinnabar, the limited habitat, abundance, and distribution of suitable plant species on site means that significant populations of these species are unlikely to occur.	No – The habitats on site are unlikely to support a significant population of protected / notable invertebrate species.
Protected and Notable Plant Species	Yes – Vascular plant species recorded within 2km of the site, including but not limited to: - Bluebell *Hyacinthoides non-scripta* - Marsh stitchwort *Stellaria palustris*	BAP, Section 7	No – The habitats within the site are considered unlikely to support protected plant species and none were observed on site during the Extended Phase 1 Habitat Survey.	No – The habitats on site are unlikely to support protected plant species.

Table 3: Protected Species Evaluation				
Species/taxa	**Desk Study**	**Status[9]**	**Supporting Habitat**	**Potential Adverse Effect?**
Invasive non-native plant species	Yes - Various records within 2km search area for species, including but not limited to; - Himalayan balsam *Impatiens glandulifera; and* - Japanese knotweed *Reynoutria japonica* - Cotoneaster *Cotoneaster simonsii* - Rhododendron *Rhododendron ponticum* - Three-cornered garlic *Allium triquetrum*	WCA (9)	No invasive species under section 9 of the WCA were observed during the Phase 1 Habitat Survey.	No – Unless found to be present in the future.

4 ASSESSMENT OF EFFECTS, MITIGATION AND RESIDUAL EFFECTS

4.1 Process of Identifying Important Ecological Features for Assessment

4.1.1 The CIEEM Guidelines state:

> *"The assessment should include potential impacts on each ecological feature determined as 'important' from all phases of the project (e.g. construction, operation and decommissioning)"*
>
> and
>
> *"One of the key challenges of Ecological Impact Assessment is to decide which ecological features (habitats, species, ecosystems and their functions/processes) are important and should be subject to detailed assessment….it is not necessary to carry out detailed assessment of features that are sufficiently widespread, unthreatened and resilient to project impacts and will remain viable and sustainable".*

4.1.2 The rationale used to select or deselect species, habitats and sites from detailed impact assessment needs to be clearly explained in relation to its value and whether or not there is potential for legislation to be contravened. In the case of this ecological appraisal, all those sensitive receptors identified within the PEAR and included in this report have been scoped in for further assessment. All those receptors which were deemed to have negligible effects as a result of the proposed development have been scoped out and not considered further within this report.

4.1.3 In accordance with CIEEM Guidelines, significant adverse effects are assessed for each stage of the proposed development, mitigation measures proposed, and the significance of residual effects identified for each ecological receptor in turn. Where significant adverse effects are identified, the objective of the assessment is to recommend changes to the project to avoid such effects and, where significant effects on site integrity cannot be avoided, to propose compensatory measures to off-set those effects.

4.2 Detailed Description of the Proposed Development

4.2.1 The proposed development is for 11 residential dwellings which will be a 100% affordable housing scheme. The proposed layout for the scheme is shown on Proposed Site Layout, New Pennsylvania, produced by Powell Dobson Architects, Rev E, dated January 2023.

4.2.2 The proposals also include native landscaping to include a hedgerow along the southern boundary as shown on the Strategic Landscape Plan, New Penn, Cardiff. Prepared by Soltys Brewster, Rev PR07, dated Dec 2022.

4.2.3 Both the proposed site layout and landscape plan are provided in Appendix 7.

4.3 Mitigation

4.3.1 Impacts in the first instance should be avoided in line with the 'mitigation hierarchy'.

4.3.2 The hierarchy is a 4-step approach as outlined below:

- *Avoidance* – Seek design options that avoid harm to ecological features.
- *Mitigation* – Adverse effects should be avoided or minimised through the implementation of mitigation measures.
- *Compensation* – Where there are significant residual adverse effects, despite the mitigation measures proposed, these should be offset by appropriate compensatory measures.
- *Enhancement* – Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.

4.3.3 The CIEEM Guidelines refers to avoiding and/or minimising impacts by incorporating measures into the scheme design at the earliest stages.

4.4 Design Solutions and Assumptions

4.4.1 All construction works will take place within the day meaning disturbance to nocturnal species will be limited.

4.5 Assessment of Effects

Non-Statutory Nature Conservation Designations

Llanedeyrn Woodland Complex SINC

Construction Phase Effects

4.5.1 Potential significant effects on Llanedeyrn Woodland SINC adjacent to the site could arise during the construction phase of the development from damage by construction works and temporary increases in dust. The SINC is located adjacent to the southern boundary of the application site.

4.5.2 The woodland for which the SINC is designated could be damaged should machinery, construction operations and storage of materials encroach into this habitat and within

the tree root protection zones. Dust soiling could adversely affect vegetation within the SINC by affecting plant processes including photosynthesis, respiration and transpiration leading to decreased fecundity.

4.5.3 The SINC may also be subject to indirect effects from water pollution through either chemical pollution incidents or soil runoff that enters the ditch within the SINC from the site, before potentially entering other connected watercourses.

4.5.4 Adverse effects on the woodland habitats within the SINC could therefore potentially occur from the construction phase of the development.

Mitigation

4.5.5 Trees will be protected in accordance with BS5837:2012 Trees in Relation to Design, Demolition and Construction.

4.5.6 A dust mitigation strategy will be prepared and implemented at the site during construction to prevent adverse effects on the SINC and other sensitive receptors. This will form part of a Construction Environmental Management Plan (CEMP) which can be conditioned.

4.5.7 Details on the prevention of water pollution will also be provided in the CEMP and will consider CIRIA's Environmental Good Practice (2015) guidance.

Operational Phase Effects

4.5.8 Potential significant effects on Llanedeyrn Woodland SINC could arise during the operational phase of the development due to a possible increase in recreational effects due to an increase in residents adjacent to the woodland.

4.5.9 There is a formal tarmacked path is located along the woodlands north eastern boundary, and is located between the application site and the woodland. Within the woodland there are few informal tracks regularly used by the public.

4.5.10 New residents are likely to stick to these formal and informal paths so no significant effects on the SINC are expected long term.

Residual Effects

4.5.11 It is considered that there will be no significant adverse residual effects on the SINC from the construction and operational phases of the proposed development following the implementation of the above mitigation.

Habitats

Broadleaved Scattered Trees

Construction Phase Effects

4.5.12 Trees T1, T2, T6 and the south-eastern branches of G1 will be removed as a result of the development. Six trees will be planted across the development to replace the three trees that will be lost.

4.5.13 The retained trees could be damaged by construction machinery encroaching into the root protection zones and from the generation of dust during construction.

4.5.14 *Mitigation*

4.5.15 Retained trees will be protected in accordance with BS5837:2012 Trees in Relation to Design, Demolition and Construction.

4.5.16 A dust mitigation strategy will be prepared and implemented at the site during construction to prevent adverse effects on the trees. This will form part of a CEMP which can be conditioned.

4.5.17 A landscaping strategy has been prepared for the site which includes the provision of six trees to compensate for the loss of the three trees to the proposed development, including field maple *Acer campestre*, snowy Mespilus *Amelanchier lamarckii*, silver birch *Betula pendula*, mountain ash *Sorbus aucuparia*, Norway maple *Acer platanoides* and red maple *Acer rubrum*.

Operational Phase Effects

4.5.18 No effects on the trees during the operational phase are anticipated.

Residual Effects

4.5.19 It is considered unlikely that the development will result in any significant adverse residual effects on broadleaved scattered tree habitats as a result of this development following the implementation of the above mitigation.

Species

Bats

Construction Phase Effects - Loss of roosts

4.5.20 Building (B1) will be demolished to facilitate construction of the residential development. This will result in the loss of three low status, non-breeding summer day

/ transitional roosts for common and soprano pipistrelle bats of site/local importance as outlined in the bat survey report (appendix 4).

4.5.21 The mature trees located on site have 'negligible' potential to support bat roosts.

Mitigation for loss of roosts

4.5.22 A licence from NRW will be required for the demolition of B1. The demolition work on B1 cannot proceed until the bat mitigation licence from NRW has been granted.

4.5.23 Three bat boxes suitable for pipistrelle bats will be installed to replace the identified bat roosts that are being lost. Three bat boxes will be located on mature trees along the southern boundary of the Llanedeyrn Woodland SINC adjacent to the site. This will include two Schwegler 1FF (or equivalent) and one crevice dwelling bat box suitable for maternity groups. All boxes will be located at between 5 - 6m from ground level, with a clear flight path to the boxes.

4.5.24 Two Schwegler 1FF bat boxes such as this one: https://www.wildcare.co.uk/bat-box-65.html will be purchased (or equivalent).

4.5.25 One maternity bat box suitable for crevice dwelling species will be purchased such as this one: https://www.wildcare.co.uk/roost-maternity-bat-box-10558.html (or equivalent).

4.5.26 The installation of bat mitigation features will be covered in a CEMP.

4.5.27 Bat enhancement features will also be incorporated into the proposed residential development as discussed in paragraph 5.1.2.

4.5.28 Prior to any demolition works, all contractors will be given a site induction and toolbox talk by the Named Ecologist (or accredited agent) to ensure they are familiar with the presence of bats, their legal protection, actions in the event of discovering a bat and information regarding safe working practices as set out in the method statement that forms part of the NRW licence.

4.5.29 Once a licence has been granted, the Named Ecologist (or accredited agent) will undertake pre-works check for bats or evidence of bats before demolition commences. Any features, which could support roosting bats will be visually inspected using a torch or endoscope if required. Additionally, an internal inspection will be carried out immediately prior to demolition.

4.5.30 Features of B1 deemed suitable by the Named Ecologist (or accredited agent) to support bats must be removed by hand as much as possible and the undersides must

be checked before disposal, or careful and closely supervised machine removal where unavoidable. All works in proximity of the roost locations will be undertaken under the supervision of the Named Ecologist (or accredited agent).

4.5.31 Any bats present will be caught by the Named Ecologist (or accredited agent) by hand or using a hand-held net, identified, placed in a bag/secure holding box, and then relocated immediately to the bat boxes specifically installed (prior to demolition) as mitigation for the demolition of the building. If immediate relocation to a bat box is not deemed appropriate by the Named Ecologist (or accredited agent), the bat will be placed in a dark, cool, and quiet place on site until sunset and released on site at a suitable time that evening. The roost feature will then be removed/made inaccessible to ensure bats do not re-enter once released.

4.5.32 If a bat is discovered during unsupervised times, demolition work will cease immediately, and advice sought from the Named Ecologist (or accredited agent).

4.5.33 The three roosts identified are classified as day / transitional roosts for a low number of non-breeding female and/or male common and soprano pipistrelle bats, therefore timing restrictions are not considered necessary.

4.5.34 A single monitoring survey of the installed bat boxes will be undertaken between June – July two years after their installation. Such monitoring surveys will involve an inspection of the tree mounted bat boxes by a licensed ecologist. The level of monitoring will be subject to approval by NRW as part of the bat mitigation licence application.

Construction Phase Effects- Disturbance due to increased lighting/noise

4.5.35 Foraging and commuting bats could be affected by an increase in lighting and noise during construction. If this affects bat flight-lines between foraging areas and roosts, then this could constitute an offence under legislation. However, it is anticipated that night-time working will mainly be avoided under general construction time restrictions.

Mitigation

4.5.36 No construction lighting will be directed towards the adjacent Llanedeyrn Woodland SINC adjacent to the site. Light spill will be avoided in this area. This requirement will be set out in a CEMP which can be conditioned.

Operational Phase Effects – Disturbance from Increased lighting

4.5.37 Once constructed, the proposed development has the potential to cause disturbance to foraging and commuting bats in the form of post development interference effects from an increase in lighting, which has the potential to alter the assemblage of bats using the adjacent habitats, namely the Llanedeyrn woodland SINC, and how they use these habitats.

4.5.38 The bat assemblage of more suburban tolerant species, including pipistrelles and noctules, is unlikely to change. Brown long-eared and *Myotis* sp. are light sensitive and therefore any significant light spill within adjacent habitats could result in a significant adverse effect on these species.

Mitigation

4.5.39 A lighting plan will be designed by a lighting profession with the input of an ecologist and follow the BCT and ILP Bats and Artificial Lighting[10] guidance. This will include designing the scheme and installing directional lighting that prevents adjacent important habitats from being subject to increased light levels above the existing baseline conditions. The lighting plan will consider:

- Lighting direction/height/position with regards to retained habitats;
- The hooding of lights;
- Lux levels;
- Light spill away from Llanedeyrn SINC woodland;
- Light timing - specifically concerning night-time use during May-September; and
- Security lighting.

4.5.40 The lighting plan with input from an ecologist will be addressed via a suitably worded planning condition provided by the Local Planning Authority.

[10] Bat Conservation Trust (BCT) and Institute of Lighting Professionals (ILP) (2018) Guidance Note 8 Bats and artificial lighting

Residual Effects

4.5.41 It is considered unlikely that the development will result in any significant adverse residual effects on the local bat population as a result of this development following the implementation of the above mitigation.

European Hedgehog

Construction Phase Effects

4.5.42 There is a risk that individual hedgehogs could be harmed/disturbed during construction works, if present at the time of the works. This could lead to significant adverse effects on the local hedgehog population.

Mitigation

4.5.43 Measures to prevent harm and disturbance to hedgehogs during site clearance and construction works will be undertaken. This will include limiting/avoiding night-time working, providing means of escape from excavations left open overnight and adhering to good construction practices.

4.5.44 To safeguard hedgehogs during construction, wooden planks will be placed in all excavations which are to remain open overnight (including trenches, pits, ditches, ponds and/or drains) or these excavations will be covered at night. The planks will provide a means of escape for any hedgehog or other mammal which may enter the excavation. Any temporarily exposed open pipe system will be capped in such a way as to prevent hedgehogs from gaining access.

4.5.45 Any slack netting will be tied up to avoid entanglement. Rubbish must be kept contained in a designated area to avoid animals becoming trapped in litter.

Operational Phase Effects

4.5.46 Human disturbance is already high due to the site being surrounded by residential areas and therefore, a slight increased human activity is unlikely to have a significant effect on hedgehogs. Additionally, hedgehogs could utilise the residential gardens for foraging if hedgehog gaps are included within any garden fences.

4.5.47 Increased vehicle movements along the access road and residential roads across the development during night-time hours could also harm or disturb hedgehog, although vehicle speeds will be low. No significant effects on hedgehog are therefore anticipated from an increase in traffic using the roads within the site.

Mitigation

4.5.48 Suitable habitats, that hedgehog can use for foraging and resting, will be created within the application site including hedgerows and wildflower grasslands to replace the hedgerow lost. These habitats will form wildlife corridors along which hedgehogs can move through the site.

Residual Effects

4.5.49 It is considered that there will be no significant residual effects on hedgehogs from either the construction or operational phases of the development.

Breeding birds

Construction Phase Effects

4.5.50 There is potential to disturb breeding birds and to affect their populations through permanent loss of nesting habitat during the vegetation clearance. No woodland habitat is being lost, however, broadleaved scattered trees and a hedgerow will be lost.

4.5.51 There is also potential to disturb breeding birds which may be nesting within the retained habitats located adjacent to the application site. Sudden temporary high levels of human disturbance and noise may cause birds to abandon nests which could result in adverse effects on individual birds. Birds using nearby habitats are likely to already be habituated to the noise and human activity taking place within the residential areas. Therefore, these effects are not likely to be significant at greater than at a local level on breeding birds.

4.5.52 Lighting during construction could potential adversely affect birds nesting in the adjacent Llanedeyrn Woodland SINC.

Mitigation

4.5.53 To avoid works affecting breeding birds, any vegetation clearance should be undertaken outside of bird breeding season (March to August, inclusive). If this is not possible, then areas of vegetation clearance should be checked by a suitably qualified ecologist 48 hours in advance of any affecting works for the presence of occupied nests. Any subsequent advice provided by the ecologist, as to how to accord with legislation, should be followed.

4.5.54 No construction lighting will be directed towards the adjacent Llanedeyrn Woodland SINC. This requirement to avoid light spill onto the SINC will be set out in a CEMP which can be conditioned.

4.5.55 To mitigate for loss of nesting habitat, the landscaping scheme for the development includes proposed native hedgerows, shrubs and trees.

Operational Phase Effects

4.5.56 Breeding birds in the suitable habitats within and adjacent to the site may be adversely affected as a result of increased lighting, noise and activity during operation.

4.5.57 Noise generating activities from the proposed development could include additional vehicle noise and anthropogenic noise from an increase in residents at the site. A disturbing increase in noise in the area could lead to decreases in breeding success of bird populations in the locality. However, as described under construction effects above, birds in the locality are likely to be habituated to similar noise levels from the surrounding residential developments including vehicle noise. Therefore, these effects are unlikely to be significant at a local level or above.

4.5.58 Breeding birds could also be affected by an increase in lighting across the site following construction.

Mitigation

4.5.59 A lighting plan will be designed by a lighting profession with the input of an ecologist and will ensure there is no light spill above existing levels on the Llanedeyrn Woodland SINC.

Residual Effects

4.5.60 It is considered that there will be no significant residual effects on breeding birds from either the construction or operational phases of the development.

5 ECOLOGICAL ENHANCEMENTS

5.1.1 In accordance with the requirements of Planning Policy Wales (2021) and BSI 42020:2013, ecological enhancements are proposed which will result in a net benefit for biodiversity.

5.1.2 Enhancements for the scheme have been provided on CA12409-007 Biodiversity Mitigation and Enhancement Plan and include the following:

- Three integrated swift bricks on plot 5.
- A total of seven integrated house sparrow bricks on plots 2, 4 and 10.
- Two bat ridge tiles on plots 1 and 2.
- One bat soffit box on plots 7 and 8.

5.1.3 The installation of bird and bat enhancement features will be covered in a CEMP.

5.1 New Habitats

5.1.1 New habitats will be created within the application site. These will enhance the application site for bats, hedgehog, birds and invertebrates.

5.1.2 The following habitats will be created within the application site: scattered trees, shade tolerant native hedgerow – located along the southern site boundary and small sections along the western boundary, shrubs, cornfield and wildflower for woodland meadow mixes and rain gardens.

6 CONCLUSIONS

6.1.1 A summary of the effects, mitigation and enhancements for each Important Ecological Feature is provided in Table 4 below:

Table 4: Summary of Effects, Mitigation, Enhancement Measures and Residual Effects

Sensitive Receptor	Assessment of Effects	Mitigation	Enhancement measures	Residual Effects
Non- Statutory Designated Site				
Llanedeyrn Woodland Complex SINC	*Construction Phase* • Potential significant effects on Llanedeyrn Woodland SINC from damage by construction works, temporary increases in dust and potential indirect effects from water pollution. *Operational Phase* • No effects during operation are anticipated.	Trees will be protected in accordance with BS5837:2012 Trees in Relation to Design, Demolition and Construction. A best practice dust mitigation plan and details on the prevention of water pollution will be prepared and implemented and included within a CEMP.	None.	Without further mitigation, the proposed development is considered to have a significant adverse effect on the SINC.
Habitats				
Broadleaved Scattered Trees	*Construction Phase* • Trees T1, T2, T6 and the south-eastern branches of G1 will be removed.	Six trees will be planted across the development to replace the three trees that will be lost.	None.	No residual effects are predicted.

Table 4: Summary of Effects, Mitigation, Enhancement Measures and Residual Effects				
Sensitive Receptor	**Assessment of Effects**	**Mitigation**	**Enhancement measures**	**Residual Effects**
	• Retained trees could be damaged by construction machinery and from the generation of dust. *Operational Phase Effects* • No effects on the trees during the operational phase are anticipated.	Retained trees will be protected in accordance with BS5837:2012 Trees in Relation to Design, Demolition and Construction. A best practice dust mitigation strategy will be prepared and implemented and included within a CEMP.		
Species				
Bats	*Construction Phase* • Building (B1) will be demolished which will result in the loss of three low status, non-breeding summer day / transitional roosts for common and soprano pipistrelle bats. • Lighting and noise during construction *Operational Phase* • Significant adverse effect due to increased disturbance from lighting.	A licence from NRW will be required for the demolition of B1. Two Schwegler 1FF (or equivalent) and one crevice dwelling bat box suitable for maternity groups will be located on mature trees along the southern	Two bat ridge tiles on plots 1 and 2. One bat soffit box on plots 7 and 8. Provision of a shade tolerant native hedgerow along the southern site boundary, shrub and wildflower mixes to	Without mitigation, the proposed development is considered to have a significant adverse effect on bats.

Table 4: Summary of Effects, Mitigation, Enhancement Measures and Residual Effects				
Sensitive Receptor	**Assessment of Effects**	**Mitigation**	**Enhancement measures**	**Residual Effects**
		boundary of the Llanedeyrn SINC. No construction lighting will be directed towards the adjacent Llanedeyrn Woodland SINC. This requirement will be set out in a CEMP. Implementation of a sensitive lighting scheme will ensure no significant light spill on adjacent habitats during operation.	encourage invertebrates and foraging habitat for bats.	
European hedgehog	*Construction Phase Effects* • There is a risk that individual hedgehogs could be harmed/disturbed during construction works, if present at the time of the works. *Operational Phase Effects* • A slight increase in human activity is unlikely to have a significant effect on hedgehogs.	Limiting/avoiding night-time working, providing means of escape from excavations left open overnight and adhering to good construction practices.	Suitable habitats that hedgehog can use for foraging and resting will be created including hedgerows and wildflower grasslands. These habitats will form wildlife corridors along which	Without mitigation, the proposed development is considered to have a significant adverse effect on European hedgehogs.

Table 4: Summary of Effects, Mitigation, Enhancement Measures and Residual Effects				
Sensitive Receptor	**Assessment of Effects**	**Mitigation**	**Enhancement measures**	**Residual Effects**
	• Increased vehicle movements during night-time hours could harm or disturb hedgehog, although vehicle speeds will be low. No significant effects on hedgehog are anticipated from an increase in traffic.		hedgehogs can move through the site.	
Birds	*Construction Phase Effects* • Potential to disturb breeding birds and to affect their populations through permanent loss of nesting habitat. • Potential to disturb breeding birds which may be nesting within habitats adjacent to the site. • Lighting during construction could potential adversely affect birds nesting in the adjacent Llanedeyrn Woodland SINC. *Operational Phase Effects* • Potential adverse effect due to increased disturbance from lighting, noise and activity.	Vegetation clearance should be undertaken outside of bird breeding season (March to August, inclusive). If this is not possible, then areas of vegetation clearance should be checked by a suitably qualified ecologist 48 hours in advance of any affecting works for the presence of occupied nests. No construction lighting will be directed towards the adjacent Llanedeyrn Woodland SINC, this will be set out in a CEMP.	Three integrated swift bricks on plot 5. A total of seven integrated house sparrow bricks on plots 2, 4 and 10.	Without mitigation, the proposed development is considered to have a significant adverse effect on breeding birds.

Table 4: Summary of Effects, Mitigation, Enhancement Measures and Residual Effects				
Sensitive Receptor	**Assessment of Effects**	**Mitigation**	**Enhancement measures**	**Residual Effects**
		The landscaping scheme for the development includes proposed native hedgerows, shrubs and trees which will provide additional habitat for nesting birds. Implementation of a sensitive lighting scheme will ensure no significant light spill on adjacent habitats during operation.		

7 REFERENCES

7.1.1 Botanical Society of the British Isles (2013) *Online atlas of the British and Irish Flora.* Available from: http://www.brc.ac.uk/plantatlas/index.php?q=title_page

7.1.2 British Standards Institution (2013) 42020:2013: *Biodiversity – Code for Practice for Planning and Development.*

7.1.3 British Standards Institution (2012) 5837:2012: *Trees in Relation to Design, Demolition and Construction. Recommendations.*

7.1.4 Chartered Institute of Ecological and Environmental Management (2017) *Guidelines for Preliminary Ecological Appraisal.*

7.1.5 Chartered Institute of Ecological and Environmental Management (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine, version 1.1 updated 2019.*

7.1.6 Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn).* The Bat Conservation Trust, London.

7.1.7 Institute of Environmental Assessment (1995) *Guidelines for Baseline Ecological Assessment.* E. & F. Spon, London.

7.1.8 JNCC and Defra (on behalf of the Four Countries' Biodiversity Group) (2012) *UK Post2010 Biodiversity Framework.* Available from: http://jncc.defra.gov.uk/page-6189.

7.1.9 Joint Nature Conservation Committee (2010) *Handbook for Phase 1 habitat survey: A technique for environmental audit.* English Field Unit, Nature Conservancy Council.

7.1.10 Joint Nature Conservation Committee (Anon 2008 updated 2010) *UK BAP Priority Habitat Descriptions*. Available from: http://jncc.defra.gov.uk/page-5706

7.1.11 Planning Policy Wales (2021) 11th ed. [ebook] Welsh Government.

7.1.12 Environment (Wales) Act (2016) Section 7.

7.1.13 Stace. C. A., (2019) New Flora of the British Isles (4th Edition). C&M Floristics.

7.1.14 Wildlife and Countryside Act (1981, as amended)

7.1.15 Bat Conservation Trust (BCT) and Institute of Lighting Professionals (ILP) (2018) Guidance Note 8 Bats and artificial lighting

APPENDICES

Appendix 1

Summary of National Planning Policy and Legislative Framework

Appendix 1: Summary of Species (Fauna) Protection and Legislation

Summary of Legislation

Protection for animals included on Schedule 2 of the Conservation of Species and Habitat Regulations 2017 (as amended)		
A person commits an offence if he:		
Section 43	Part 1	(a) Deliberately captures, injures or kills any wild animal of a European protected species (b) Deliberately disturbs wild animals of any such species. (c) Deliberately take or destroy the eggs of such an animal (d) Damage or destroy a breeding site or resting place of such an animal
	Part 2	For the purpose of paragraph (1)(b), disturbance of animals includes in particular any disturbance which is likely a) to impair their ability i. to survive, breed or reproduce or to rear or nurture their young; or ii. in the case of animals of a hibernating or migratory species, to hibernate or migrate. b) to affect significantly the local distribution or abundance of the species to which they belong
	Part 3	It is an offence to: a) be in possession of, or to control, b) transport, c) sell or exchange, or d) to offer for sale or exchange.
	Part 4	Paragraph (3) applies to: a) any live or dead animal or part of animal (i) which has been taken from the wild, and (ii) which is a species or subspecies listed in Annex IV(a) of the Habitats Directive; and b) anything derived from such an animal or any part of such an animal.
	Part 5	Paragraph (1) and (3) apply regardless of the stage of the life of the animal in question.

Protection for animals included on Schedule 5 of the Wildlife and Countryside Act 1981 (As Amended)		
Section 9	Part 1	Intentionally kill, injure, take a scheduled animal
	Part 2	Possess or control (live or dead animal, part or derivative)
	Part 4 (a)	Intentionally or recklessly damage, destroy or obstruct access to any structure or place used by a scheduled animal for shelter or protection
	Part 4 (b)	Intentionally or recklessly disturb an animal occupying such a structure or place
	Part 5 (a)	Sell, offer for sale, possess or transport for the purpose of sale (live or dead animal, part or derivative)

	Part 5 (b)	Advertise for buying or selling such things

A large number of species are also included under Section 7 of the Environment (Wales) Act 2016 as Species of Principal Importance which places the "biodiversity duty" on the Welsh Government (and therefore public authorities) for the purpose of maintaining and enhancing biodiversity in relation to Wales. 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.

Bats

All UK bat species are afforded full protection (including their habitats) through inclusion on Schedule 2 of The Conservation of Habitats and Species Regulations 2017 (as amended) and further partial protection by Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

Barbastelle (*Barbastella barbastellus*), Bechstein's (*Myotis bechsteinii*), noctule (*Nyctalus noctula),* common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared (*Plecotus auritus*), greater horseshoe (*Rhinolophus ferrumequinum*) and lesser horseshoe (*Rhinolophus hipposideros*) bats are listed under Section 7 of The Environment (Wales) Act 2016 to be taken into account as part of the biodiversity duty on local planning authorities. Species included in this list are considered by the Welsh Ministers to be "of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales".

Badgers

Badgers are afforded full protection under the Protection of Badgers Act 1992, which makes it an offence to:

- Wilfully kill, injure or take a badger;
- Possess or control any live or dead badger or any part, or anything derived from, a dead badger;
- cruelly ill-treat a badger, or attempt to do so;

- To interfere with a sett by:
    - damaging or destroying it;
    - obstructing access to, or any entrance of, a badger sett;
    - causing a dog to enter a badger sett;
    - disturbing a badger when it is occupying a sett;
- Sell a live badger or offer one for sale.

It is also an offence to mark, attach any ring, tag or other marking device to a badger unless authorised under licence.

Hazel Dormouse

Hazel dormice are afforded full protection (including their habitats) through inclusion on Schedule 2 of The Conservation of Habitats and Species regulations 2017 (as amended) and further partial protection by Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

Hazel dormice are listed under Section 7 of The Environment (Wales) Act 2016 to be taken into account as part of the biodiversity duty on local planning authorities. Species included in this list are considered by the Welsh Ministers to be "of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales".

Hedgehog

Hedgehogs are protected under Section 1 of the Wild Mammals (Protection) Act 1996, which makes it an offence too mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering to this species. Hedgehog is listed under Section 7 of The Environment (Wales) Act 2016 to be taken into account as part of the biodiversity duty on local planning authorities. Species included in this list are considered by the Welsh Ministers to be "of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales".

Reptiles

Six native reptiles occur in Britain: the adder (*Vipera berus*), the grass snake (*Natrix natrix*), the smooth snake (*Coronella austriaca*), the sand lizard (*Lacerta agilis*), the common lizard (*Zootoca vivipara*) and the slow worm (*Anguis fragilis*).

The smooth snake and sand lizard are afforded full protection (including their habitats) through inclusion on Schedule 2 of The Conservation of Habitats and Species regulations 2017 (as amended) and further partial protection by Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

Five of the six native reptile species (excluding smooth snake) are listed under Section 7 of The Environment (Wales) Act 2016 to be taken into account as part of the biodiversity duty on local planning authorities. Species included in this list are considered by the Welsh Ministers to be "of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales".

Great Crested Newts and other amphibians

Great crested newts are afforded full protection (including their habitats) through inclusion on Schedule 2 of The Conservation of Habitats and Species regulations 2017 (as amended) and further partial protection by Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

Under the Wildlife and Countryside Act 1981, other amphibians, including smooth and palmate newts, common frogs and common toad cannot be sold or be offered for sale.

Great crested newts and common toad are listed under Section 7 of The Environment (Wales) Act 2016 to be taken into account as part of the biodiversity duty on local planning authorities. Species included in this list are considered by the Welsh Ministers to be "of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales" within Section 7 of The Environmental (Wales) Act 2016.

Birds

All wild birds, their nests and eggs are protected under Part 1 Section 1 of the Wildlife and Countryside Act, 1981 (as amended), which makes it an offence (with certain limited exceptions and in the absence of a licence) to:

- Kill or injure any wild bird;
- Take, damage or destroy the nest of any wild bird whilst it is in use or being built (this includes several species of birds whose nests are reused under Schedule ZA1);
- Take or destroy the egg or any wild bird.

It is also an offence to possess any live or dead wild bird or egg, or anything derived from a wild bird or egg. Restrictions on trade and advertising also apply.

Bird species listed on Schedule 1 of the Wildlife and Countryside Act, 1981 (as amended) are afforded additional protection against intentional or reckless disturbance whilst it is building a nest, or at a nest containing eggs, young or disturbance to the young.

Further a number of bird species are listed under Section 7 of The Environment (Wales) Act 2016 to be taken into account as part of the biodiversity duty on local planning authorities. Species included in this list are considered by the Welsh Ministers to be "of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales" within Section 7 of The Environmental (Wales) Act 2016.

In addition to this legal protection, leading governmental and non-governmental conservation organisations in the UK have reviewed the population status of the birds regularly found here and produced a list of Birds of Conservation Concern. Of the 247 species assessed, 67 were placed on the red list of high conservation concern, 96 on the amber list of medium conservation concern and 81 on the green list of low conservation concern. Consideration is therefore given to those species listed as being of conservation concern although they have no greater legislative protection.

Invertebrates

A number of invertebrates are afforded full protection (including their habitats) through inclusion on Schedule 2 of The Conservation of Habitats and Species regulations 2017 (as amended) and further partial protection by Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

In addition, a number of species of invertebrates are fully or partially protected only under Schedule 5 of the Wildlife and Countryside Act 1981.

A number of invertebrates are listed under Section 7 of The Environment (Wales) Act 2016 to be taken into account as part of the biodiversity duty on local planning authorities. Species included in this list are considered by the Welsh Ministers to be "of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales".

Plants

A number of plants are afforded full protection through inclusion on Schedule 5 of The Conservation of Habitats and Species regulations 2017 (as amended) and further partial protection by Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).

In addition, a number of species of plants are fully protected only under Schedule 5 of the Wildlife and Countryside Act 1981.

A number of plants are listed under Section 7 of The Environment (Wales) Act 2016 to be taken into account as part of the biodiversity duty on local planning authorities. Species included in this list are considered by the Welsh Ministers to be "of principal importance for the purpose of maintaining and enhancing biodiversity in relation to Wales".

Invasive Species

A number of animal and plant species are listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and The Invasive Alien Species (Enforcement and Permitting) Order 2019. It is an offence too:

- Allow the releases or allows to escape into the wild any animal which is of a kind which is not ordinarily resident in and is not a regular visitor to Great Britain in a wild state; or included in Part I of Schedule 9,

- If any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9.

Under Schedule 9A of the act species control agreements and orders can be made in accordance with The Invasive Alien Species (Enforcement and Permitting) Order 2019.

Planning policy

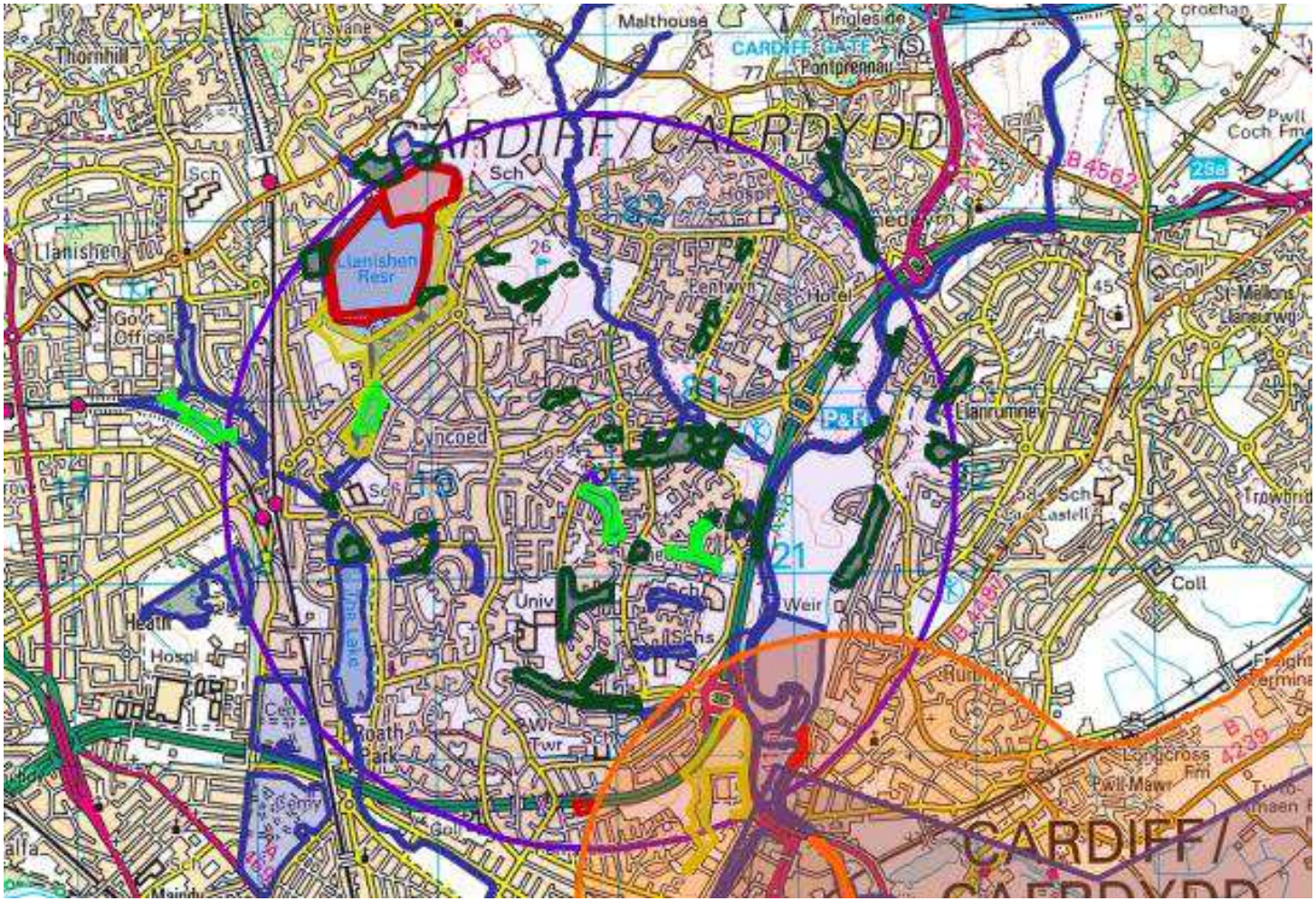
All statutory and non-statutory designated sites, along with species covered by national legislation and those under Section 7 of the Environment (Wales) Act 2016, are considered through Planning Policy Wales 2021 which provides a guide for Local Planning Authority (LPA) decision making, including statements such as "ensure statutorily and non-statutorily designated sites are properly protected and managed", "safeguard protected and priority species and existing biodiversity assets from impacts" and "secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks." This is reflected in policies EN5- EN7 of the Cardiff Local Development Plan 2006-2026 with statements such as "development will only be permitted if it does not cause unacceptable harm to: Landscape features of importance for wild flora and fauna, including wildlife corridors and 'stepping stones' which enable the dispersal and functioning of protected and priority species".

There is also the "biodiversity duty" placed upon LPAs through the Environment (Wales) Act 2016 to enhance biodiversity and ensure the resilience of ecosystems. This will be considered by the LPA when making planning decisions to ensure that they meet their own reporting duties.

Appendix 2

Sites Designated for Conservation within 2km

Appendix 2: Sites Designated for Conservation within 2km



Site Type	Key
Site of Special Scientific Interest	
Local Nature Reserve	
Wildlife Site / SINC (Adopted)	
Ancient Semi Natural Woodland	
Restored Ancient Woodland Site	
NRW Priority Area (Coastal Saltmarsh)	
B-Lines	

Source: https://aderyn.lercwales.org.uk/commercial_enquiries/results/A4OGJ86So1MZnKGGDpvP3FZt3U2M8ihAiI0wRgMKeBmYNpNI46

Appendix 3

Preliminary Roost Assessment and Preliminary Ground Level Roost Assessment Results

Appendix 3 – Preliminary Roost Assessment and Preliminary Ground Level Roost Assessment Results

Table 1 – Preliminary Roost Assessment (PRA) conducted 11th April 2022
Building 1 (B1) New Penn Public House
The building on site, New Penn Public House was surveyed. The building is a two-storey large building, constructed in the 1960s. The building consists of predominantly brick walls, with some parts of the building having cement rendering with pebble dash. B1 has varying types of roof styles, the main 2 storey areas consist of a gable roof with the intersecting 1 storey sections having a flat roof. The material is predominantly tiles on the gabled roofs and roofing felt on the flat roofs. An internal survey of the building was carried out, the internal spaces, basement, boiler room and eave storage cupboards were surveyed, however the roof void was not accessed during this visit. No evidence of bats was identified during the internal inspection, however entryway into the building was limited with potential window and door access minimal. The majority of the potential roost features (PRFs) for bats externally on the building are on the pitched roofs, from gaps in hanging and broken tiles, entrance points at the edges of the roof under tiles, and under roofing felt. The majority of potential roost features on the flat roofed sections of the building come from breakages and circular holes (from light fittings) in soffits. Other PRFs include gaps in metal shutters and grates, broken soffits and gaps in soffits, gaps between the brick wall and plastic drip edge of roof, rotted facia / drip edge, and gaps in brickwork. The building is surrounded by a residential area to the north, east and west. To the south, the building is adjected to an ancient semi-natural woodland. The woodland corridor may provide opportunities for foraging and commuting for bats and birds. However, the surrounding habitat is predominantly an urban environment with residential housing enclosing the site. Circle Way West is located to the west and Brynfedw Road to the north of the site. The building is considered to be of **moderate suitability** for roosting bats in the active season, along with **low suitability** for hibernating bats (basement).


NEW PENN
PUBLIC BAR

Reference	Feature Description	Photograph
Reference Number Location		
Hanging and broken tiles.	The majority of potential roost features on the building are on the pitched roofs. The gaps are in hanging and broken tiles. The entrance points are at edges of roof under tiles, and under roofing felt.	

1	Letterbox gap in red shutter of southern most extension on north-west aspect of building.	
2	Broken soffit on north-eastern aspect of pitched roof. Allowing entry into soffit and cavity space.	

3	Small gap between wall and plastic drip edge of roof. Very limited as a potential roost feature.	
4	Gap in soffit at north-west edge of western aspect of building. Man-made hole (from light fitting) adjacent that will also allow entry into soffit.	

5	Very large broken soffit on south-west aspect of building extension. Creating large gap into soffit area, facing and adjacent to woodland area off site.	
6	Large gap in soffit next to shutter door on northern aspect of building, facing Brynfedw road. Could provide entry into building or cavity wall.	 

7.	Rusted steel grate that provides a potential entrance point into boiler room on eastern aspect of building. No droppings seen on or next to grate. Potential access from basement entryway on eastern aspect of building. No droppings seen on or next to entryway.	   

8.	Gaps in brickwork on eastern aspect of building.	
9.	Gaps present under the facia/drip edge of the southern-most extension on the eastern aspect of the building, the gap is adjacent to the woodland off site. The gap is very large and Is present along the entire aspect. Bird nesting material/ vegetation is present in the gaps. This gap provides accessible entry into the flat roof.	

10.	The majority of potential roost features on the flat roofed sections of the building come from breakages and circular holes (from light fittings) in soffits.	

Table 2 – Preliminary Ground Level Roost Assessment (PGLRA) conducted 11th April 2022		
All semi-mature and mature broadleaved and coniferous scattered trees on site were subject to a PGLRA. The Tree ID numbers in this report are in line with CA12409-001 Tree Locations and Constraints Plan within CA12409 002 V1.0 Arboricultural Constraints & Opportunities Report April 2022.		
Tree ID (G = Group, T – Tree)	**Description**	**Photographs**

T1	A semi-mature ash, 8m high, with a bifurcated stem, is present directly adjacent to the eastern aspect of the Building B1 on site. No suitable roosting features were identified during the PGLRA. T1 is classified as having **negligible suitability** for roosting bats.	

T2	A semi-mature grey alder *Alnus incana*, 7m high, is present directly adjacent to the eastern aspect of the Building B1 on site. No suitable roosting features were identified during the PGLRA. T2 is classified as having **negligible suitability** for roosting bats.	

T3	A single-stemmed, early-mature Ash *Fraxinus excelsior*, 11.5m high, is present along the western boundary of site on a poor semi-improved grassland road verge. No suitable roosting features were identified during the PGLRA. T3 is classified as having **negligible suitability** for roosting bats.	

T4	A single-stemmed, semi-mature Sycamore *Acer pseudoplatanus*, 11m high, is present along the western boundary of site on a poor semi-improved grassland road verge. No suitable roosting features were identified during the PGLRA. T4 is classified as having **negligible suitability** for roosting bats.	

T5	A single-stemmed, early-mature Norway maple *Acer platanoides*, 9m high, is present along the western boundary of site on a poor semi-improved grassland road verge. No suitable roosting features were identified during the PGLRA. T5 is classified as having **negligible suitability** for roosting bats.	

T6	A single-stemmed, early-mature Ash, 15.5m high, is present to the east of the building on site, on poor semi-improved grassland. A broken branch that has split near the main trunk is present facing east, however, the split faces upwards and is exposed to the elements, so is therefore not suitable for roosting bats. No suitable roosting features were identified during the PGLRA. T6 is classified as having **negligible suitability** for roosting bats.	

G1	A group of five single-stemmed, early mature wild cherry *Prunus avium* and Norway maple *Acer platanoides*, 15m high, are present along the north-western and western boundary of site on a poor semi-improved grassland road verge. There is moderate deadwood in the crowns, and old festooned lighting cables hanging from the crowns. No suitable roosting features were identified during the PGLRA. All of the trees within the group were classified as **negligible suitability** for roosting bats.	

Dead tree	A dead tree (possible wild cherry) is present along the boundary of site on a poor semi-improved grassland road verge, adjacent to G1. There were some cracks and splits in the trunk but were not considered suitable as potential roosting features because they were too shallow to be used by a roosting bat. The dead tree is classified as having **negligible suitability** for roosting bats.	

Dead tree	A dead tree, that has been uprooted and is laying on the ground, is present along the eastern boundary of building B1 on site, on poor semi-improved grassland. No suitable roosting features were identified during the PGLRA. The dead tree is classified as having **negligible suitability** for roosting bats.	

Appendix 4

Wardell Armstrong, New Penn Cardiff, Bat Report – Building 1 – Emergence / Re-entry Surveys, February 2023

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

CARDIFF COUNCIL

NEW PENN, CARDIFF

BAT REPORT – BUILDING 1 – EMERGENCE/RE-ENTRY SURVEYS

FEBRUARY 2023

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

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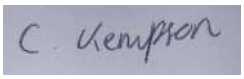
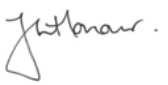
CARDIFF COUNCIL

NEW PENN, CARDIFF

BAT REPORT – BUILDING 1 – EMERGENCE/RE-ENTRY SURVEYS

FEBRUARY 2023

PREPARED BY:		
Charlie Kempson	Ecologist	
REVIEWED BY:		
Clare Wheeler	Principal Ecologist	
APPROVED BY:		
Jo Honour	Technical Director (Ecology)	

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CONTENTS

APPENDICES

DRAWINGS	TITLE	SCALE
CA12409-002	Site Location Plan	1:20,000@A3
CA12409-005-P01	Building B1 Surveyor and Bat Emergence/Re-Entry Locations	1:400@A3

EXECUTIVE SUMMARY

Wardell Armstrong LLP (WA) was commissioned by Cardiff Council to undertake bat surveys in connection with the proposed demolition works at the former New Penn Public House (B1) on the site located at 210 Brynfedw, Llandeyrn, Cardiff CF23 9PX, centred on approximate National Grid Reference ST 19882 80527. The site is to provide a residential housing scheme.

WA was previously commissioned to undertake an external Preliminary Roost Assessment (PRA) survey, which was carried out on 11th April 2022, identifying that the disused building has moderate suitability to support roosting bats during their active season (April to October) and has potential to support hibernating bats (November to March). The hibernation survey results are covered in a separate report.

No evidence of bats was recorded during the PRA. No live bats were observed during the inspection, and no other evidence of bat activity was recorded. However, to accord with current best practice guidance, two surveys were required to assess whether the disused building is being used by roosting bats during their active season.

B1 was therefore subject to a dusk emergence survey in July 2022, and a separate dawn re-entry survey in August 2022. Three common pipistrelle bats and one soprano pipistrelle bat were observed emerging or re-entering B1 during the July/August 2022 emergence/re-entry surveys.

The building is now classified as containing three, confirmed low status, non-breeding summer day/transitional roosts for common and soprano pipistrelle bats. As such, the demolition of the building can only be undertaken following approval of a bat mitigation licence from Natural Resources Wales.

1 INTRODUCTION

1.1 Terms of Reference

1.1.1 Wardell Armstrong LLP (WA) was commissioned by Cardiff Council to undertake bat surveys in connection with the proposed demolition works at the former New Penn Public House on the site located at 210 Brynfedw, Llandeyrn, Cardiff CF23 9PX (herein referred to as 'the site').

1.2 Site Description

1.2.1 The site is centred on approximate National Grid Reference ST 19882 80527 as the site location is shown on Drawing CA12409-002 (Site Location Plan)

1.2.2 The site comprises; an extensive two storey building, with a flat above the disused public house, hardstanding, poor semi-improved grassland, an intact species-poor hedgerow, broadleaved scattered trees, and includes broadleaved woodland (ancient semi-natural woodland) on the periphery of the site which forms part of Llanederyn Woodland Complex Site of Importance for Nature Conservation (SINC).

1.2.3 The site is within a residential area. The site is bound to the north-west by Circle Way West Road and to the north-east by Brynfedw Road. A parcel of ancient semi-natural woodland is located directly south-west and south of the site.

1.3 Description of Development

1.3.1 The proposed development requires the demolition of the former New Penn Public House for the development of a residential housing scheme.

1.4 Background

Previous Surveys

1.4.1 WA was commissioned in March 2022 to undertake an Extended Phase 1 Habitat Survey of the site, a Preliminary Ground Level Roost Assessment (PGLRA) of trees and an internal and external Preliminary Roost Assessment (PRA) survey (WA, 2022[1]) of the former New Penn Public House. These surveys were undertaken on 11th April 2022 by a suitably experienced ecologist.

1.4.2 The PRA identified that the disused building has a moderate suitability to support roosting bats during their active season (April to October) and has potential to support

[1] Wardell Armstrong LLP, "*Cardiff Council, New Penn, Cardiff, Preliminary Ecological Appraisal, July 2022*".

hibernating bats (November to March). **The hibernation survey results are covered in a separate report.** No evidence of roosting bats was observed during the internal inspection.

1.4.3 In line with recommended guidance within the Bat Conservation Trust (BCT) (2006) good practice guidance[2] it was deemed that two surveys were required to assess whether the disused building is being used by roosting bats during their active season.

1.4.4 A desk study was undertaken as part of the PRA. The desk study identified one site designated for bats within 10km of the building: Ruperra Castle and Woodlands Site of Special Scientific Interest (SSSI), located approximately 6.2km to the northeast of the site. The designation supports a greater horseshoe (*Rhinolophus ferrumequinum*) bat nursery roost, which is one of only five nursery roosts in Wales. The SSSI is also used by a smaller population of lesser horseshoe (*Rhinolophus hipposideros*) bats.

1.4.5 The desk study also identified 286 records of bats within 2km of the site in the last 12 years, with the closest record located approximately 143m to the north of the building.

1.4.6 Species identified include:

- Brown long-eared (*Plecotus auritus*)
- Common pipistrelle (*Pipistrellus pipistrellus*)
- Myotis Bat species (*Myotis spp*.)
- Nathusius's' pipistrelle (*Pipistrellus nathusii*)
- Natterer's (*Myotis nattereri*)
- Noctule (*Nyctalus noctula*)
- Serotine (*Eptesicus serotinus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)

1.4.7 Furthermore, 6 roosts were identified within 2km of the site. The closest record is of a common pipistrelle roost approximately 180m to the north of the building.

1.4.8 The most recent records of bats identified within 2km of the site were from April 2022, of a soprano pipistrelle, approximately 1,271m to the northwest of the building.

[2] Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust (BCT), London.

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 bat species found breeding in the UK, which are all insectivorous. These species have different life cycles and strategies, but in general require:

- Hibernation roost sites: sites which in winter have a constant temperature of 3-7°C e.g., underground sites (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 from spring to autumn e.g., roof spaces; and
- Habitats with numerous insects to feed upon.

1.6.2 Roosting habitat includes buildings, structures, caves, and trees; any structure or place that could be 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 riparian 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, streams and rivers are often used by bats as they provide rich food sources, shelter, and commuter corridors.

1.7 Scope of Report

1.7.1 The purpose of this report is to detail the results of the bat emergence/re-entry surveys and provide an assessment of the potential impacts by the proposed demolition of the building on any bat populations present. This report therefore includes:

- Description of survey methodology;
- Results of the PRA undertaken in April 2022;
- Results of the emergence/re-entry surveys undertaken in July and August 2022 on Building 1, hereafter referred to as ‘B1’, and;

- Assessment of effects, mitigation measures and residual effects deemed relevant to bats in relation to the proposed demolition of building B1.

2 METHODOLOGY

2.1 Preliminary Roost Assessment (PRA)

2.1.1 A PRA of B1 was undertaken on 11th April 2022 by a suitably experienced ecologist, in conjunction with the Extended Phase 1 Habitat Survey (WA, 2022). The aim of the survey was to assess the potential of the building to support roosting bats, identify any evidence of roosting bats and whether there was a requirement for further surveys.

2.1.2 The methodology for the PRA can be found within the PEAR report issued in July 2022, produced by Wardell Armstrong (WA, 2022).

2.2 Dusk Emergence/Dawn Re-entry Surveys

2.2.1 Following the PRA surveys undertaken in April 2022, it was considered that B1 had moderate bat roost potential, and therefore it was subject to one dusk emergence survey in July 2022, and one separate dawn re-entry survey in August 2022.

2.2.2 The aim of the emergence/re-entry surveys was to establish if any roosts are present within the building and, if so, to establish the type of roost and bat species using the roost. The survey effort is based on the guidance given in Table 7.3 of the '*Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, J. (ed.) 2016*)'.

2.2.3 The dusk emergence survey was undertaken 15 minutes before sunset to 1.5 hours after sunset. The dawn re-entry survey was undertaken 1.5 hours before sunrise and continued to 15 minutes after sunrise. Weather conditions and times of the emergence and re-entry surveys are provided in Appendix 2.

2.2.4 The position of the six surveyors during the survey is shown on Drawing Number CA12409-005-P01 (Building B1 Surveyor and Bat Emergence/Re-Entry Locations).

2.2.5 Echo Meter Touch (Wildlife Acoustics, Inc., Massachusetts) bat detectors and Samsung Galaxy Tablets were used by surveyors to detect bats and analysed later using Kaleidoscope Pro 4 software. Species identification was made on the basis of the characteristics of the call including peak frequency, minimum and maximum frequency, call duration and inter pulse interval. Observations of bat behaviour, size and the direction of the flight path were also noted where possible.

2.3 Assessment Limitations

2.3.1 Ecological surveys are limited by factors that affect the presence of plants and animals such as time of year, weather, migration patterns and behaviour. The surveys were undertaken between July and August 2022 and therefore represent a valid sample of ecological evidence present for that date/season and is based on the guidance given in Table 7.1 of the 'Bat Surveys for Professional Ecologists: Good Practice Guidelines' (Collins, J. (ed.) 2016)[2].

2.3.2 Echolocation calls of 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.

2.3.3 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.

2.4 Quality Assurance & Environmental Management

2.4.1 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.

2.4.2 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 Preliminary Roost Assessment

3.1.1 An internal and external PRA inspection was conducted on B1. The building is a small, two storey, rectangular shaped brick building with two gable tiled roofs, surrounded by flat roofs. External inspection identified numerous points of entry into the building; in brickwork, soffits, fascia, under slate, hanging tiles, and drip edge. Internal inspection was limited due to lack of access to loft and attic. One loft space in the above flat was accessed, which identified limited potential roost features in the form of pitched beams. The woodland to the south is part of Llanederyn Woodland Complex SINC, providing connectivity to other areas of woodland for foraging and commuting further away. This building was therefore classified as having 'moderate' potential to support roosting bats. The detailed description of the building and photographs are provided in Appendix 3 – Preliminary Roost Assessment Results.

3.2 Dusk Emergence and Dawn Re-entry Surveys

Dusk Emergence Survey - 25th July 2022

3.2.1 One soprano and one common pipistrelle were observed emerging from the centre of the west gable end of the eastern part of the building. Another common pipistrelle was observed emerging from the north-eastern corner of the south-western part of the building

3.2.2 Common and soprano pipistrelles were recorded foraging and commuting around the building, and noctule and *Myotis* sp. were also recorded during the survey. The locations of the emergences observed during the July 2022 survey are shown on Drawing Number CA12409-005-P01 (Building B1 Surveyor and Bat Emergence/Re-Entry Locations) and a description of the roost locations are provided in Appendix 4.

Dawn Re-entry Survey – 19th August 2022

3.2.3 One common pipistrelle was recorded re-entering the south-western gable end.

3.2.4 Soprano pipistrelles, noctules and brown long-eared were recorded foraging and commuting around the building during the survey.

3.2.5 The location of the re-entry observed during the August 2022 survey is shown on Drawing Number CA12409-005-P01 (Building B1 Surveyor and Bat Emergence/Re-Entry Locations) and a description of the roost location is provided in Appendix 4.

4 EVALUATION

4.1 Overview

4.1.1 Four bats were observed emerging or re-entering B1 during the July/August 2022 bat emergence/re-entry surveys.

4.1.2 It is therefore considered that the building comprises three low status, non-breeding summer day/transitional roosts used by common and soprano pipistrelles. Common and soprano pipistrelles are common and widespread throughout Wales. Therefore, the roosts on site are considered to be of **local** value. The criteria of determining the value of ecological receptors is provided in Appendix 5.

4.2 Assessment of Effects

Short-term Impacts: Disturbance

4.2.1 In the absence of mitigation, the demolition of B1 would cause disturbance to bats through vibration, noise, and dust. Additionally, there is the potential to injure and/or kill individual common and soprano pipistrelles if present within the building during the time of demolition.

Long-term Impacts: Roost Loss

4.2.2 In the absence of mitigation, the demolition of B1 will result in the destruction and permanent loss of three low status, non-breeding common and soprano pipistrelle summer day/transitional roosts. However, common and soprano pipistrelles are considered to be common and widespread within the area, therefore, the loss of these roosts is not considered to be significant above the local level. It is considered that the loss of these roosts will not affect the favourable conservation status of common and soprano pipistrelle bats.

Long-term Impacts: Fragmentation and Isolation

4.2.3 It is considered that the demolition of B1 will not result in the severance of any flight lines within the area. Therefore, it is unlikely to lead to any significant adverse fragmentation or isolation effects.

Predicted scale of impact

4.2.4 The survey results identified that B1 is used by three common pipistrelle and one soprano pipistrelle, and that the three roosts to be lost are of low conservation significance. It is considered that the loss of these roosts will not affect the favourable

conservation status of common and soprano pipistrelles within the local area. Pipistrelles in particular are considered to be one of the more versatile species and are opportunistic in urban environments. Therefore, they are likely to adjust to use alternative roosts within the local area.

4.2.5 It is considered that the loss of the three roosts is not significant above the local level, however, without mitigation, the loss of the roosts would contravene legislation pertaining to bats.

Mitigation Measures

4.2.6 A licence from Natural Resources Wales (NRW) will be required for the demolition of the building. The demolition work on B1 cannot proceed until the bat mitigation licence from NRW has been granted.

4.2.7 The three roosts identified are classified as day/transitional roosts for a low number of non-breeding female and/or male common and soprano pipistrelle bats, therefore timing restrictions are not considered necessary.

4.2.8 To mitigate for the demolition of the three roosts in the building, it is expected that NRW will require as part of the licence, documents that bat boxes are installed prior to the demolition commencing. Mitigation will include the installation of three bat boxes suitable for pipistrelle bats on-site to replace the identified bat roosts that are being lost. Three bat boxes will be located on the trees along the southwestern boundary. This will include two Schwegler 1FF (or equivalent) and one crevice dwelling bat box suitable for maternity groups. If no suitable mature trees are identified, it may be required to install a pole to mount the bat boxes. Exact locations of the bat boxes will be determined by and sited under guidance of the Named Ecologist (or accredited agent) to advise on suitable installation. All boxes will be located at between 5 - 6m from ground level, with a clear flight path to the boxes.

4.2.9 Bat mitigation features will also be incorporated into the proposed residential development to be constructed on the site following demolition of B1. These integrated features will include a soffit bat box.

4.2.10 Prior to any demolition works, all contractors will be given a site induction and toolbox talk by the Named Ecologist (or accredited agent) to ensure they are familiar with the presence of bats, their legal protection, actions in the event of discovering a bat and information regarding safe working practices as set out in the method statement that forms part of the NRW licence.

4.2.11 The Named Ecologist (or accredited agent) will undertake a check for bats or evidence of bats before demolition commences. Any features, which could support roosting bats will be visually inspected using a torch or endoscope if required. Additionally, an internal inspection will be carried out immediately prior to demolition.

4.2.12 Features of B1 deemed suitable by the Named Ecologist (or accredited agent) to support bats must be removed by hand as much as possible and the undersides must be checked before disposal, or careful and closely supervised machine removal where unavoidable. All works in proximity of the roost locations will be undertaken under the supervision of the Named Ecologist (or accredited agent).

4.2.13 Any bats present will be caught by the Named Ecologist (or accredited agent) by hand or using a hand-held net, identified, placed in a bag/secure holding box, and then relocated immediately to the bat boxes specifically installed (prior to demolition) as mitigation for the demolition of the building. If immediate relocation to a bat box is not deemed appropriate by the Named Ecologist (or accredited agent), the bat will be placed in a dark, cool, and quiet place on site until sunset and released on site at a suitable time that evening. The roost feature will then be removed/made inaccessible to ensure bats do not re-enter once released.

4.2.14 If a bat is discovered during unsupervised times, demolition work will cease immediately, and advice sought from the Named Ecologist (or accredited agent).

4.2.15 The above mitigation will be detailed in the bat licence application to NRW.

4.2.16 The licence holder (Cardiff Council) will provide a copy of the approved bat licence and method statement to any future site owners. The bat mitigation installed on the site must be considered in any future plans for the site and must not be isolated or lit by artificial lighting.

4.2.17 The installed bat boxes will require a single monitoring survey to be carried out two years after demolition work is complete. This monitoring survey will involve an inspection of the bat boxes by a licenced ecologist. The level of monitoring will be subject to approval by NRW as part of the bat mitigation licence application.

4.2.18 Finally, should works not commence within 24 months of the surveys (unless development proposals change), it will be essential to update the survey effort.

4.3 Residual Effects

4.3.1 It is considered unlikely that, with the above outlined mitigation measures, there will be significant residual adverse effects on common pipistrelle and soprano pipistrelle bats as a result of the demolition of B1.

4.4 Enhancements

4.4.1 An additional bat box (Schwegler 1FF or equivalent) should be installed as an enhancement for crevice dwelling bat species along the southern boundary.

4.4.2 Additional planting to create a mosaic of habitats along the southern and southwestern boundaries will be beneficial to foraging and commuting bats, improving the habitat around the proposed bat boxes. This can 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

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;
- Damage or destroy a breeding site or resting place of a bat;

Under the Regulations, disturbance of bats includes any actions 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, notable 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 licenses 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 legislative. 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 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 within 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 of biodiversity within their geographic area or that of Wales, as part of their reporting for the 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 Surveys 2022 – Dates, Times & Weather Conditions

Appendix 2: Bat Surveys 2022 – Dates, Times & Weather Conditions

Building Reference	Date	Dusk or Dawn survey	Start Time (sunset/sunrise time - hours)	End Time (Hours)	Weather Conditions
B1	25/07/2022	Dusk	20:56 (21:11)	22:41	Start: 16°C, wind NW 8mph, 12.5% cloud cover, dry. End: 15°C, wind NW 7mph, 37.5% cloud cover, dry.
B1	19/08/2022	Dawn	04:34 (06:04)	06:19	Start: 16°C, wind W 4mph, 87.5% cloud cover, dry. End: 15°C, wind W 3mph, 12.5% cloud cover, dry.

Appendix 3

Preliminary Roost Assessment Results

Appendix 3 – Preliminary Roost Assessment Results

Table 1 – Preliminary Roost Assessment (PRA) conducted 11th April 2022
Building 1 (B1) New Penn Public House
The building on site, New Penn Public House was surveyed. The building is a two-storey large building, constructed in the 1960s. The building consists of predominantly brick walls, with some parts of the building having cement rendering with pebble dash. B1 has varying types of roof styles, the main 2 storey areas consist of a gable roof with the intersecting 1 storey sections having a flat roof. The material is predominantly tiles on the gabled roofs and roofing felt on the flat roofs. An internal survey of the building was carried out, the internal spaces, basement, boiler room and eave storage cupboards were surveyed, however the roof void was not accessed during this visit. No evidence of bats was identified during the internal inspection, however entryway into the building was limited with potential window and door access minimal. The majority of the potential roost features (PRFs) for bats externally on the building are on the pitched roofs, from gaps in hanging and broken tiles, entrance points at the edges of the roof under tiles, and under roofing felt. The majority of potential roost features on the flat roofed sections of the building come from breakages and circular holes (from light fittings) in soffits. Other PRFs include gaps in metal shutters and grates, broken soffits and gaps in soffits, gaps between the brick wall and plastic drip edge of roof, rotted facia / drip edge, and gaps in brickwork. The building is surrounded by a residential area to the north, east and west. To the south, the building is adjected to an ancient semi-natural woodland. The woodland corridor may provide opportunities for foraging and commuting for bats and birds. However, the surrounding habitat is predominantly an urban environment with residential housing enclosing the site. Circle Way West is located to the west and Brynfedw Road to the north of the site. The building is considered to be of **moderate suitability** for roosting bats in the active season, along with **low suitability** for hibernating bats (basement).


NEW PENN
PUBLIC BAR

Reference	Feature Description	Photograph
Reference Number Location		
Hanging and broken tiles.	The majority of potential roost features on the building are on the pitched roofs. The gaps are in hanging and broken tiles. The entrance points are at edges of roof under tiles, and under roofing felt.	

1	Letterbox gap in red shutter of southern most extension on north-west aspect of building.	
2	Broken soffit on north-eastern aspect of pitched roof. Allowing entry into soffit and cavity space.	

3	Small gap between wall and plastic drip edge of roof. Very limited as a potential roost feature.	
4	Gap in soffit at north-west edge of western aspect of building. Man-made hole (from light fitting) adjacent that will also allow entry into soffit.	

5	Very large broken soffit on south-west aspect of building extension. Creating large gap into soffit area, facing and adjacent to woodland area off site.	
6	Large gap in soffit next to shutter door on northern aspect of building, facing Brynfedw road. Could provide entry into building or cavity wall.	 

7.	Rusted steel grate that provides a potential entrance point into boiler room on eastern aspect of building. No droppings seen on or next to grate. Potential access from basement entryway on eastern aspect of building. No droppings seen on or next to entryway.	   

8.	Gaps in brickwork on eastern aspect of building.	
9.	Gaps present under the facia/drip edge of the southern-most extension on the eastern aspect of the building, the gap is adjacent to the woodland off site. The gap is very large and Is present along the entire aspect. Bird nesting material/ vegetation is present in the gaps. This gap provides accessible entry into the flat roof.	

10.	The majority of potential roost features on the flat roofed sections of the building come from breakages and circular holes (from light fittings) in soffits.	

Appendix 4

Roost Location Descriptions

Appendix 4: Roost Location Descriptions

Refer also to Drawing CA12409-005-P01 which shows the Roost Locations.

Building reference	Description	Roost Location
B1	Bat roost observed during the 25/07/2022 dusk emergence survey. One soprano and one common pipistrelle were observed emerging from the centre of the west gable end of the eastern part of the building.	E1
	A second bat roost observed during the 25/07/2022 dusk emergence survey. One common pipistrelle was observed emerging from the north eastern corner of the southwest part of the building.	E2
	Bat roost observed during the 19/08/2022 dawn re-entry survey. A common pipistrelle was observed re-entering the gable point of the southwestern gable.	R1

The building can be confirmed as a low conservation significance roost of a low number of likely non-breeding or male common and soprano pipistrelles which are common and widespread species.

Appendix 5
Determining Value of Ecological Receptors

Appendix 5: Determining Value of Ecological Receptors

1.1.1 The conservation status of a site is defined in Habitats Directive as this relates to internationally designated sites. The Chartered Institute of Ecology and Environmental Management (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 levels of conservation importance are detailed below.

Categories of Values		
Value Category	**Relevance to Site**	**Examples**
International	Europe	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 Data Book or WLBAP on account of its regional rarity or localisation.
District	Llanedeyrn	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

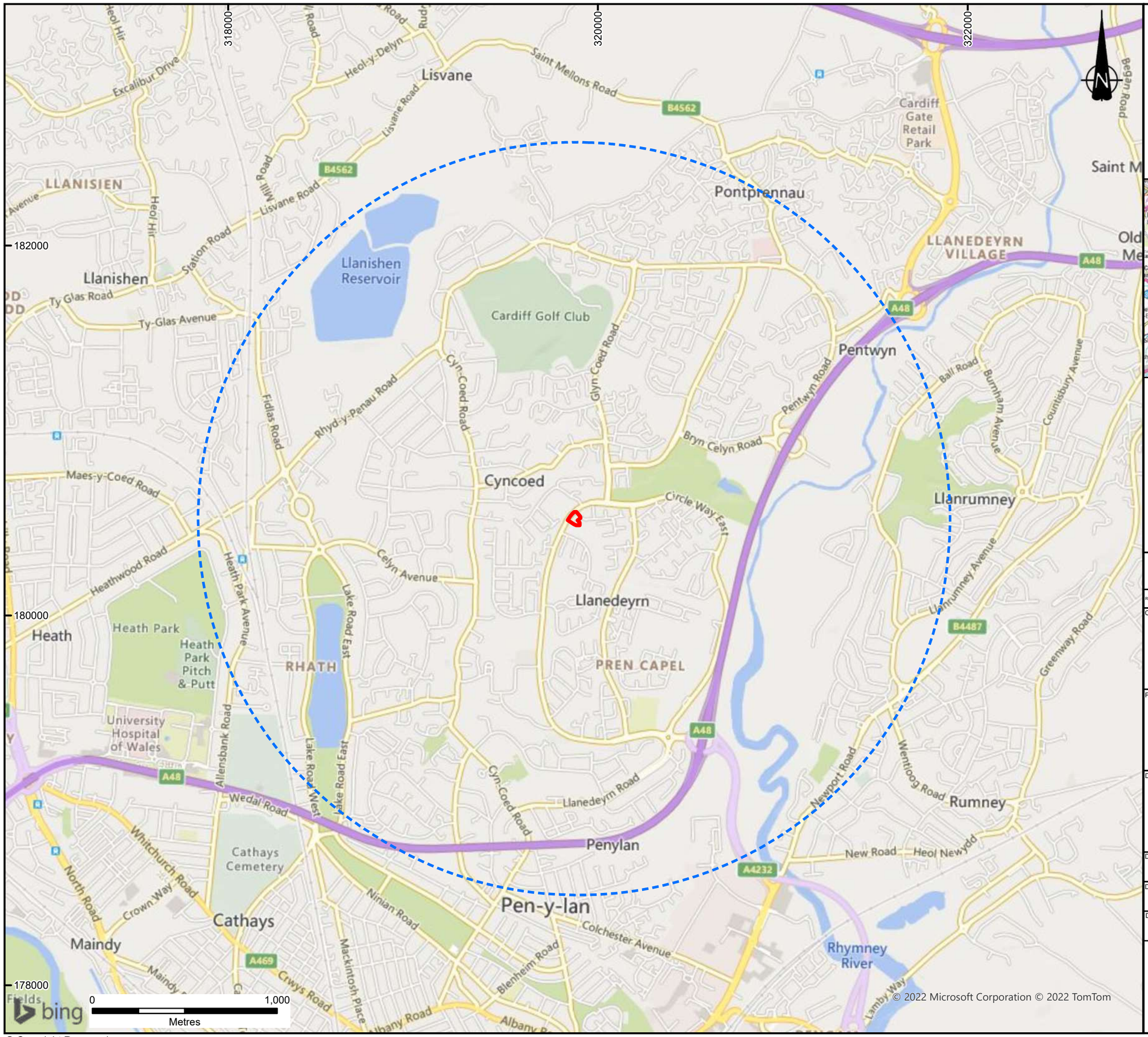
Categories of Values		
Value Category	**Relevance to Site**	**Examples**
		population of a species that is listed in the LBAP because of its rarity in the locality.
Local	Parish to site	Areas of heavily modified or managed vegetation of low species diversity or low value as habitat to species of nature conservation interest; Common and widespread species.

1.1.3 Individual species may be protected under 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.

1.1.4 The assignment of undesignated features, such as UK Priority and Section 7 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.

1.1.5 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.

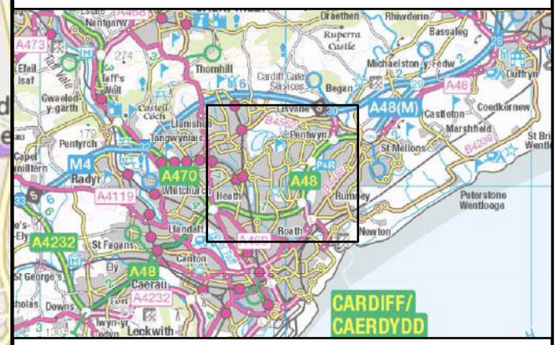
DRAWINGS



KEY

Site Boundary

2km Radius



Notes:

Boundaries are indicative.

Aerial imagery shown for context purposes only.

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REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
A	FIRST ISSUE	15/07/2022	EL	TS	JH

CLIENT

CARDIFF COUNCIL

PROJECT

NEW PENN, CARDIFF

DRAWING TITLE

SITE LOCATION PLAN

DRG No.	REV
CA12409-002	A

DRG SIZE	SCALE	DATE
A3	1:20,000	15/07/2022

DRAWN BY	CHECKED BY	APPROVED BY
EL	TS	JH

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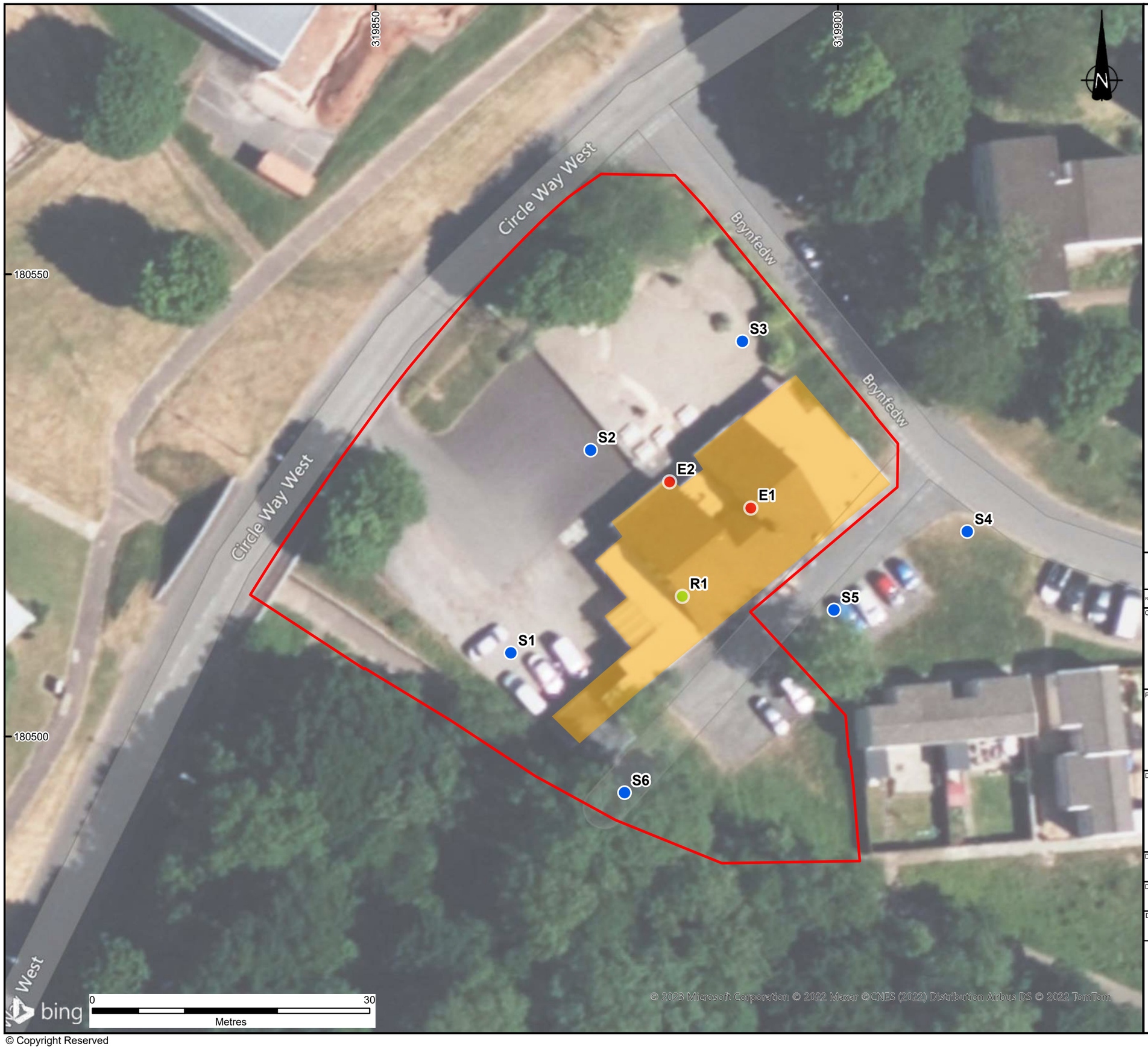

KEY

- Site Boundary
- Building with Moderate Bat Roost Suitability
- S: Surveyor Locations
- E: Bat Emergence Location
- R: Bat Re-entry Location

Notes:
E1: 25/7/22 - 1x Common Pipistrelle
1x Soprano Pipistrelle
E2: 25/7/22 - 1x Common Pipistrelle
R1: 19/08/22 - 1x Common Pipistrelle

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

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
A	FIRST ISSUE	20/02/23	MAB	CK	JH

CLIENT

CARDIFF COUNCIL

PROJECT

NEW PENN, CARDIFF

DRAWING TITLE

BUILDING B1 SURVEYOR AND
BAT EMERGENCE/RE-ENTRY LOCATIONS

DRG No.	REV
CA12409-005	A

DRG SIZE	SCALE	DATE
A3	1:400	20/02/2023

DRAWN BY	CHECKED BY	APPROVED BY
RCB	CK	JH

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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

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Appendix 5

Wardell Armstrong, New Penn Bat Hibernation Survey Report, April 2023

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ENERGY AND CLIMATE CHANGE
ENVIRONMENT AND SUSTAINABILITY
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MINERAL ESTATES
WASTE RESOURCE MANAGEMENT

CARDIFF COUNCIL

NEW PENN, CARDIFF

BAT HIBERNATION SURVEY REPORT

APRIL 2023

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

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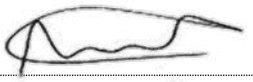
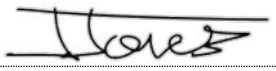
BAT HIBERNATION SURVEY REPORT

APRIL 2023

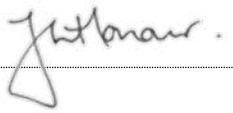
PREPARED BY:

Alba Saur-Pacheco	Ecologist	

REVIEWED BY:

Jake Jones	Senior Ecologist	

APPROVED BY:

Jo Honour	Technical Director	

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

CONTENTS

APPENDICES

DRAWINGS	**TITLE**	**SCALE**
CA12409-002	Site Location Plan	1:15,000@A3
CA12409-006	Automated Bat Detector Location – Hibernation Survey 2022/2023	1:500@A3

EXECUTIVE SUMMARY

Wardell Armstrong (WA) LLP was commissioned by Cardiff Council to undertake Bat Hibernation Surveys at the basement of Building B1, in connection with the proposed demolition works at the former New Penn Public House, located at 210 Brynfedw, Llanderyn, Cardiff CF23 9PX.

The site is within a residential area and a parcel of ancient semi-natural woodland is located directly south-west and south of the site. The proposed development requires the demolition of the New Penn Public House on site, to provide a new residential housing scheme.

This report details the results of the Hibernation Surveys undertaken in the basement of B1 between 1st December 2022 to 20th February 2023. This includes the methodology, discussion of the results and provides recommendations. Bats and their roosts are fully protected via the Conservation of Habitats and Species Regulations 2017 (as amended) and considered by the Local Planning Authority when assessing applications through the "biodiversity duty" of the Environment (Wales) Act 2016, which is enshrined by local planning policy.

The results of the Hibernation Survey suggest the absence of hibernating bats from the basement of Building B1, however the potential for hibernating bats remains.

While no hibernating bats were identified during the bat hibernation surveys, the building still provides suitable hibernation potential for bats. Due to this, precautions should still be taken prior to and during any development works. This includes sealing any entrances to the basement prior to November 2023 to prevent the winter colonisation by bats. It is also recommended that works be undertaken prior to November 2023 or after April 2024 (outside hibernation season). Should demolition not occur, and the internal door, as well as external steel grates that provide entry to the basement of building B1 be left unsealed, hibernation surveys should be repeated in the winter of 2023-2024 prior to any demolition.

1 INTRODUCTION

1.1 Terms of Reference

1.1.1 Wardell Armstrong (WA) LLP was commissioned by Cardiff Council to undertake Bat Hibernation Surveys in connection with the proposed demolition works at the former New Penn Public House, located at 210 Brynfedw, Llanderyn, Cardiff CF23 9PX.

1.2 Site Description

1.2.1 The site is centred on approximate National Grid Reference ST 19882 80527 as the site location is shown on Drawing Number CA12409-002 (Site Location Plan).

1.2.2 The site comprises; an extensive two storey building, hardstanding, poor semi-improved grassland, an intact species poor hedgerow, broadleaved scattered trees, and includes broadleaved woodland (ancient semi-natural woodland) on the periphery of the site which forms part of Llanederyn Woodland Complex Site of Importance for Nature Conservation (SINC).

1.2.3 The site is within a residential area. The site is bound to the north-west by Circle Way West Road and to the north-east by Brynfedw road. A parcel of ancient semi-natural woodland is located directly south-west and south of the site.

1.3 Description of Development

1.3.1 The proposed development requires the demolition of New Penn Public House for the development of a residential housing scheme.

1.4 Background

Previous Surveys

1.4.1 WA was commissioned in March 2022 to undertake an Extended Phase 1 Habitat Survey of the site and an internal and external Preliminary Roost Assessment (PRA) survey (WA, 2022[1]) of the New Penn Public House. These surveys were undertaken on 11th April 2022 by a suitably experienced ecologist.

1.4.2 The PRA identified that the disused building (B1) has a moderate suitability to support roosting bats during their active season (April to October) and that the basement of the building B1 has a low potential to support hibernating bats (November to March). The hibernation survey results are outlined in this report. No evidence of roosting bats was observed during the internal inspection.

[1] Wardell Armstrong LLP, *'Cardiff Council, New Penn Cardiff, Preliminary Ecological Appraisal, July 2022'*. Report ref CA12409/001 version V1.0

1.4.3 To determine if the building was being used by roosting bats during the active season, two emergence/re-entry surveys were carried out in line with recommended guidance in the 'Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, J., 2016)'[2] the results of which are provided in a separate report[3]. The building was subject to a dusk emergence survey in July 2022, and a separate dawn re-entry survey in August 2022. Three common pipistrelles and one soprano pipistrelle bats were observed emerging or re-entering the building during the July/August 2022 emergence/re-entry surveys.

1.4.4 A desk study was undertaken as part of the PRA. The desk study identified one site designated for bats within 10km of the building. Ruperra Castle and Woodlands Site of Special Scientific Interest (SSSI), located approximately 6.2km to the northeast of the site. The designation supports a greater horseshoe (*Rhinolophus ferrumequinum*) bat nursery roost, which is one of only five nursery roosts in Wales. The SSSI is also used by a smaller population of lesser horseshoe (*Rhinolophus hipposideros*) bats.

1.4.5 The desk study also identified 286 records of bats within 2km of the site in the last 12 years, with the closest record located approximately 143m to the north of the building.

1.4.6 Species identified include:

- Brown long-eared (*Plecotus auritus*)
- Soprano pipistrelle (*Pipistrellus pygmaeus*)
- Common pipistrelle (*Pipistrellus pipistrellus*)
- Noctule (*Nyctalus noctula*)
- Natterer's (*Myotis nattereri*)
- Nathusius's' pipistrelle (*Pipistrellus nathusii*)
- Myotis bat species (*Myotis spp*.)
- Serotine (*Eptesicus serotinus*)

1.4.7 Furthermore, 6 roosts were identified within 2km of the site. The closest record is of a common pipistrelle roost approximately 180m to the north of the building.

1.4.8 The most recent records of bats identified within 2km of the site were from April 2022, of a soprano pipistrelle, approximately 1,271m to the northwest of the building.

[2] Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust (BCT), London.

[3] Wardell Armstrong LLP, *'Cardiff Council, New Penn Cardiff, Bat Report – Building 1 – Emergence/Re-entry surveys, February 2023'*. Report ref CA12409/004 version V1.0

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 the UK, all of which are insectivorous. These species have different life cycles and strategies, but in general 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 Scope of Report

1.7.1 The purpose of this report is to detail the results of the hibernation survey conducted in the basement of B1 within the site.

1.7.2 This report therefore includes:

- A description of the survey and assessment methodology;
- Results from the bat hibernation surveys undertaken in the basement of B1;
- Recommendations to aid future development proposals; and
- Enhancements for bats.

2 METHODOLOGY

2.1 Hibernation Survey

Introduction

2.1.1 The PRA identified that the basement of the building as having low potential to support hibernating bats (November to March).

2.1.2 The results of the PRA including a description of the building, its basement and potential roosting features are provided in Appendix 2.

Automated Detector Survey

2.1.3 Internal automated bat detector surveys should be considered where access is constrained as set out in the 'Good Practice Guidelines (Collins, J. (ed) 2016)'.

2.1.4 The guidelines state that automated detectors can/should be deployed for a minimum of two weeks per month from December – February. Automated detector monitoring was undertaken to cover the months of December 2022, January 2023 and February 2023.

2.1.5 One SM4BAT+ Bioacoustics Recorder (Wildlife Acoustics, Inc.) was deployed in the basement, following the guidance provided (Collins, J. (ed) 2016). Dates of the surveys are provided in Table 1 below. The location of the automated bat detector is shown on Drawing Number CA12409-006 (Automated Detector Location – Hibernation Survey 2022/23).

Table 1: Survey/deployment dates		
Month	**Dates**	**External Weather Conditions**
Basement of Building 1 (B1)		
Deployment 1 – December	01/12/2022 – 14/12/2022	-3 – 6°C, high humidity, dry, mild winds.
Deployment 2 – January	09/01/2023 – 23/01/2023	-1 – 13°C, high humidity, dry, mild winds.
Deployment 3 – February	06/02/2023 – 20/02/2023	-1 – 10°C, high humidity, some showers, mild winds.

2.1.6 After retrieval of the recording device 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).

Species identification was made on the basis of the characteristics of the call including peak frequency, minimum and maximum frequency, call duration and inter pulse interval.

2.1.7 This report refers to a bat 'pass'; that is a single sound file captured by an automated detector where the bat goes out of the range of the detector. It is important to note that passes do not necessarily relate to the numbers of bats that may be present; a large number of registrations can equally result from one bat passing a detector many times/feeding overhead, or many bats passing only once. No temperature or humidity loggers were installed but the structure was assessed as having high humidity given the floor/walls remained wet.

Internal assessment

2.1.8 During the initial deployment of the static detector and during each return visit to New Penn Public House (B1), a search for evidence of roosting bats was undertaken. i.e., the presence of droppings, urine staining and live or dead bats. All available, safe and accessible areas were systematically checked for such evidence and recorded on a map of the structure's layout if observed. Samples of droppings would be collected for DNA analysis, if present.

Tell-Tale Sheet

2.1.9 To complement the automated detector surveys, a tell-tale (fabric) sheet was also deployed during the survey to detect any bats that may have been using the basement during the survey periods, but which did not echolocate. The fabric sheet was placed down within the basement to collect droppings in order to aid determining presence or likely absence during the hibernation period sampled.

2.2 Assessment Limitations

2.2.1 Humidity and temperature conditions within the basement of B1 were not recorded during the survey, this was due to a lack of available equipment at the time. However, it is expected that the humidity and temperature within the basement of B1 are suitable for hibernating bats.

2.2.2 It is difficult to distinguish individual species within the genera *Myotis* and *Nyctalus* from sonogram calls alone. Where there is insufficient evidence to assign an individual species (i.e. faint or short duration calls), a genus is recorded.

2.2.3 Other than potentially influencing the hibernation of bats, external weather conditions had no impact of the ability to undertake the hibernation survey and return visits to replace batteries or remove the detector.

2.3 Quality Assurance & Environmental Management

2.3.1 The surveys and assessments have been undertaken 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[4], and where required specialist guidance referenced separately.

2.3.2 The external and internal PRA of the main New Penn Public House (B1) building, reported separately, was undertaken by a suitable qualified ecologist.

[4] British Standard Institute (2013) BS 42020:2013 Biodiversity. Code of practice for planning and development.

3 RESULTS AND DISCUSSION

3.1 Hibernation Survey

Basement of New Penn Public House (B1)

Automatic detector

3.1.1 One common pipistrelle pass was recorded on 12th February, which is not enough activity to suggest B1 is used by bats for hibernation. Very little high frequency noise in the region of 10-140 kHz was detected during the sampling window from 1st December 2022 to 20th February 2023, other than noise created during the initial set up/removal by the ecologist. The results from the automated detector surveys at the basement of B1 suggest the absence of hibernating bats.

3.1.2 Although temperature and humidity were not recorded, B1 remained observably wet throughout the survey period.

3.1.3 Detector locations are shown on Drawing Number CA12409-006 (Automated Detector Location – Hibernation Survey 2022/23).

Internal Assessment

3.1.4 No evidence of roosting bats was noted on any accessible surfaces or bats clinging to features within the basement during deployment of static monitoring devices or return visits. The tell-tale sheet deployed in an appropriate flight line for bats in B1 recorded no droppings.

3.2 Discussion

Basement of New Penn Public House (B1)

3.2.1 The visibly high humidity, and likely stable but cool temperatures within the basement suggest it could have potential for hibernation.

3.2.2 As only one pass was recorded throughout the entirety of the survey, hibernating bats are likely absent from the basement of B1.

4 RECOMMENDATIONS

Building (B1)

4.1.1 Bats are considered likely absent from the basement of B1.

4.1.2 Due to the summer day/transitional roosts present in B1[5], the potential remains that the basement could be colonised as a winter hibernation roost. This potential is increased by the clear flight path to the basement and the presence of a semi-natural woodland south of B1, outlined in the Preliminary Ecological Appraisal (PRA)[6].

4.1.3 It is therefore recommended that any entrances to the basement be sealed shut prior to demolition and outside the hibernation season (November to March), to prevent winter colonisation by bats in 2023. Works should be undertaken prior to November 2023 or from April 2024 onwards, and should be undertaken under the supervision of a bat licensed ecologist.

4.1.4 Should demolition not occur, and the internal door as well as external steel grates that provide access to the basement of building B1 be left unsealed, hibernation surveys should be repeated during the winter months (December to February) of 2023-2024 prior to any demolition.

[5] Wardell Armstrong LLP, *'Cardiff Council, New Penn Cardiff, Bat Report – Building 1 – Emergence/Re-entry surveys, February 2023'*. Report ref CA12409/004 version V1.0

[6] Wardell Armstrong LLP, *'Cardiff Council, New Penn Cardiff, Preliminary Ecological Appraisal, July 2022'*. Report ref CA12409/001 version V1.0

5 ENHANCEMENTS

5.1.1 Hibernating bats have not been recorded within the basement at Building B1 and therefore enhancements for hibernating bats are not being considered at this current time. Enhancements for bats are however considered in the Preliminary Roost Assessment (Buildings) and Preliminary Ground Level Roost Assessment (Trees) Report[7] and Bat Report – Building 1 – Emergence/Re-Entry Surveys, February 2023[8].

[7] Wardell Armstrong LLP, *'Cardiff Council, New Penn Cardiff, Preliminary Ecological Appraisal, July 2022'*. Report ref CA12409/001 version V1.0

[8] Wardell Armstrong LLP, *'Cardiff Council, New Penn Cardiff, Bat Report – Building 1 – Emergence/Re-entry surveys, February 2023'*. Report ref CA12409/004 version V1.0

6 REFERENCES

- British Standard Institute (2013) BS 42020:2013 Biodiversity. Code of practice for planning and development
- Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust (BCT), London.
- Wardell Armstrong LLP, '*Cardiff Council, New Penn Cardiff, Preliminary Ecological Appraisal, July 2022*'. Report ref CA12409/001 version V1.0
- Wardell Armstrong LLP, *'Cardiff Council, New Penn Cardiff, Bat Report – Building 1 – Emergence/Re-entry surveys, February 2023'*. Report ref CA12409/004 version V1.0

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;
- Damage or destroy a breeding site or resting place of a bat;

Under the Regulations, disturbance of bats includes any actions 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, notable 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 licenses 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 legislative. 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 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 within 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 of biodiversity within their geographic area or that of Wales, as part of their reporting for the 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

Preliminary Ground Level Roost Assessment Results

Appendix 2 – Preliminary Roost Assessment Results

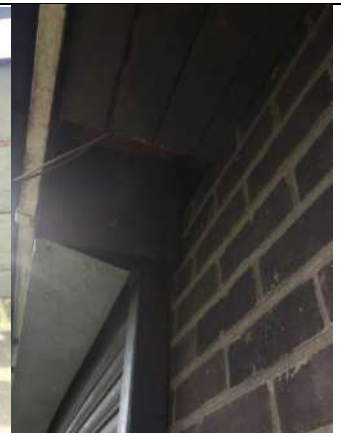
Table 1 – Preliminary Roost Assessment (PRA) conducted 11th April 2022
Building 1 (B1) New Penn Public House
The building on site, New Penn Public House was surveyed. The building is a two-storey large building, constructed in the 1960s. The building consists of predominantly brick walls, with some parts of the building having cement rendering with pebble dash. B1 has varying types of roof styles, the main 2 storey areas consist of a gable roof with the intersecting 1 storey sections having a flat roof. The material is predominantly tiles on the gabled roofs and roofing felt on the flat roofs. An internal survey of the building was carried out, the internal spaces, basement, boiler room and eave storage cupboards were surveyed, however the roof void was not accessed during this visit. No evidence of bats was identified during the internal inspection, however entryway into the building was limited with potential window and door access minimal. The majority of the potential roost features (PRFs) for bats externally on the building are on the pitched roofs, from gaps in hanging and broken tiles, entrance points at the edges of the roof under tiles, and under roofing felt. The majority of potential roost features on the flat roofed sections of the building come from breakages and circular holes (from light fittings) in soffits. Other PRFs include gaps in metal shutters and grates, broken soffits and gaps in soffits, gaps between the brick wall and plastic drip edge of roof, rotted facia / drip edge, and gaps in brickwork. The building is surrounded by a residential area to the north, east and west. To the south, the building is adjected to an ancient semi-natural woodland. The woodland corridor may provide opportunities for foraging and commuting for bats and birds. However, the surrounding habitat is predominantly an urban environment with residential housing enclosing the site. Circle Way West is located to the west and Brynfedw Road to the north of the site. The building is considered to be of **moderate suitability** for roosting bats in the active season, along with **low suitability** for hibernating bats (basement).


NEW PENN
PUBLIC BAR

Reference	Feature Description	Photograph
Reference Number Location		
Hanging and broken tiles.	The majority of potential roost features on the building are on the pitched roofs. The gaps are in hanging and broken tiles. The entrance points are at edges of roof under tiles, and under roofing felt.	

1	Letterbox gap in red shutter of southern most extension on north-west aspect of building.	
2	Broken soffit on north-eastern aspect of pitched roof. Allowing entry into soffit and cavity space.	

3	Small gap between wall and plastic drip edge of roof. Very limited as a potential roost feature.	
4	Gap in soffit at north-west edge of western aspect of building. Man-made hole (from light fitting) adjacent that will also allow entry into soffit.	

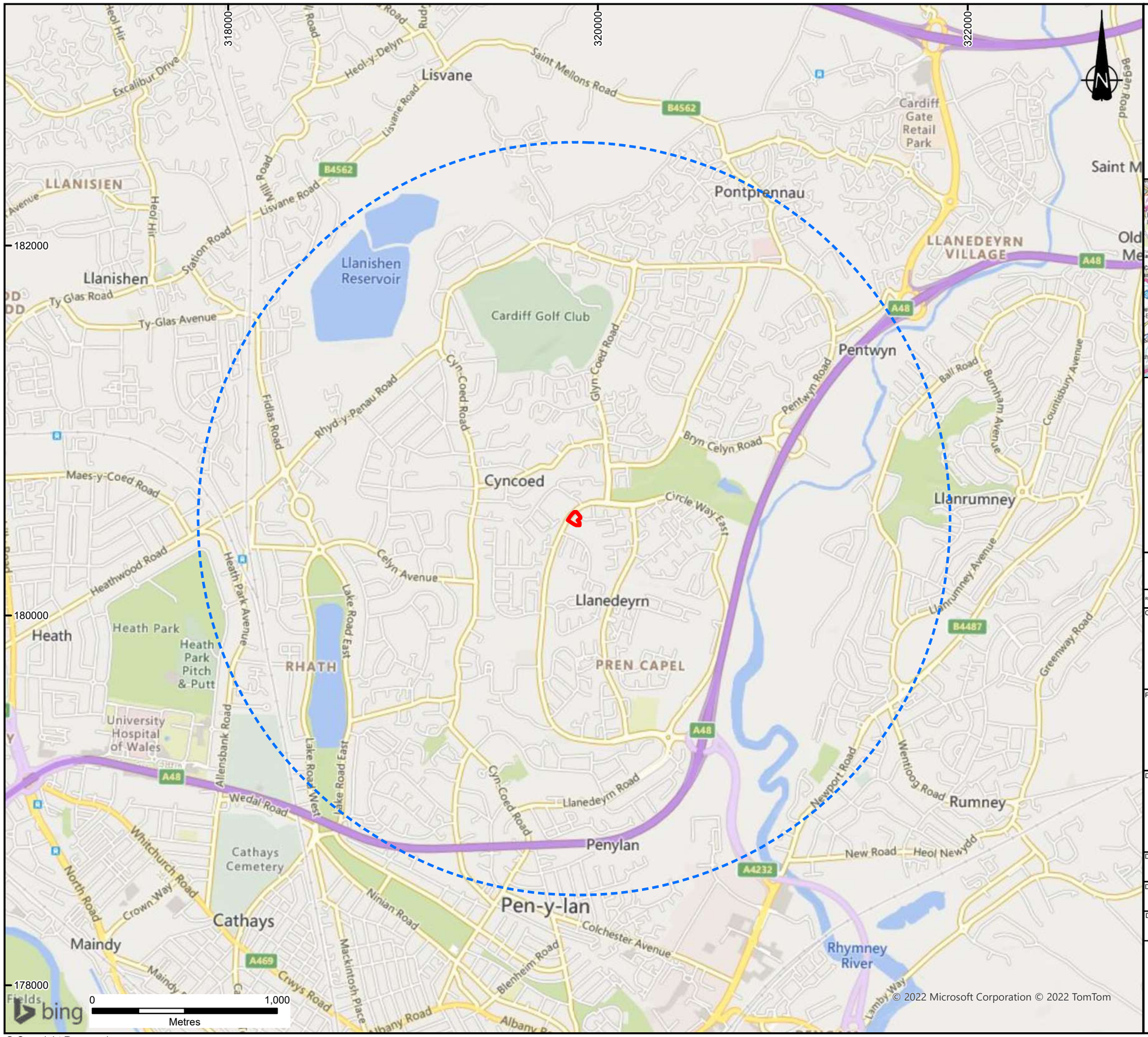
5	Very large broken soffit on south-west aspect of building extension. Creating large gap into soffit area, facing and adjacent to woodland area off site.	
6	Large gap in soffit next to shutter door on northern aspect of building, facing Brynfedw road. Could provide entry into building or cavity wall.	 

7.	Rusted steel grate that provides a potential entrance point into boiler room on eastern aspect of building. No droppings seen on or next to grate. Potential access from basement entryway on eastern aspect of building. No droppings seen on or next to entryway.	   

8.	Gaps in brickwork on eastern aspect of building.	
9.	Gaps present under the facia/drip edge of the southern-most extension on the eastern aspect of the building, the gap is adjacent to the woodland off site. The gap is very large and Is present along the entire aspect. Bird nesting material/ vegetation is present in the gaps. This gap provides accessible entry into the flat roof.	

10.	The majority of potential roost features on the flat roofed sections of the building come from breakages and circular holes (from light fittings) in soffits.	

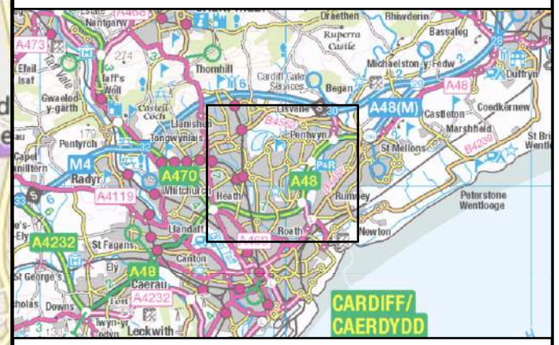
DRAWINGS



KEY

Site Boundary

2km Radius



Notes:

Boundaries are indicative.

Aerial imagery shown for context purposes only.

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REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
A	FIRST ISSUE	15/07/2022	EL	TS	JH

CLIENT

CARDIFF COUNCIL

PROJECT

NEW PENN, CARDIFF

DRAWING TITLE

SITE LOCATION PLAN

DRG No.	REV
CA12409-002	A

DRG SIZE	SCALE	DATE
A3	1:20,000	15/07/2022

DRAWN BY	CHECKED BY	APPROVED BY
EL	TS	JH

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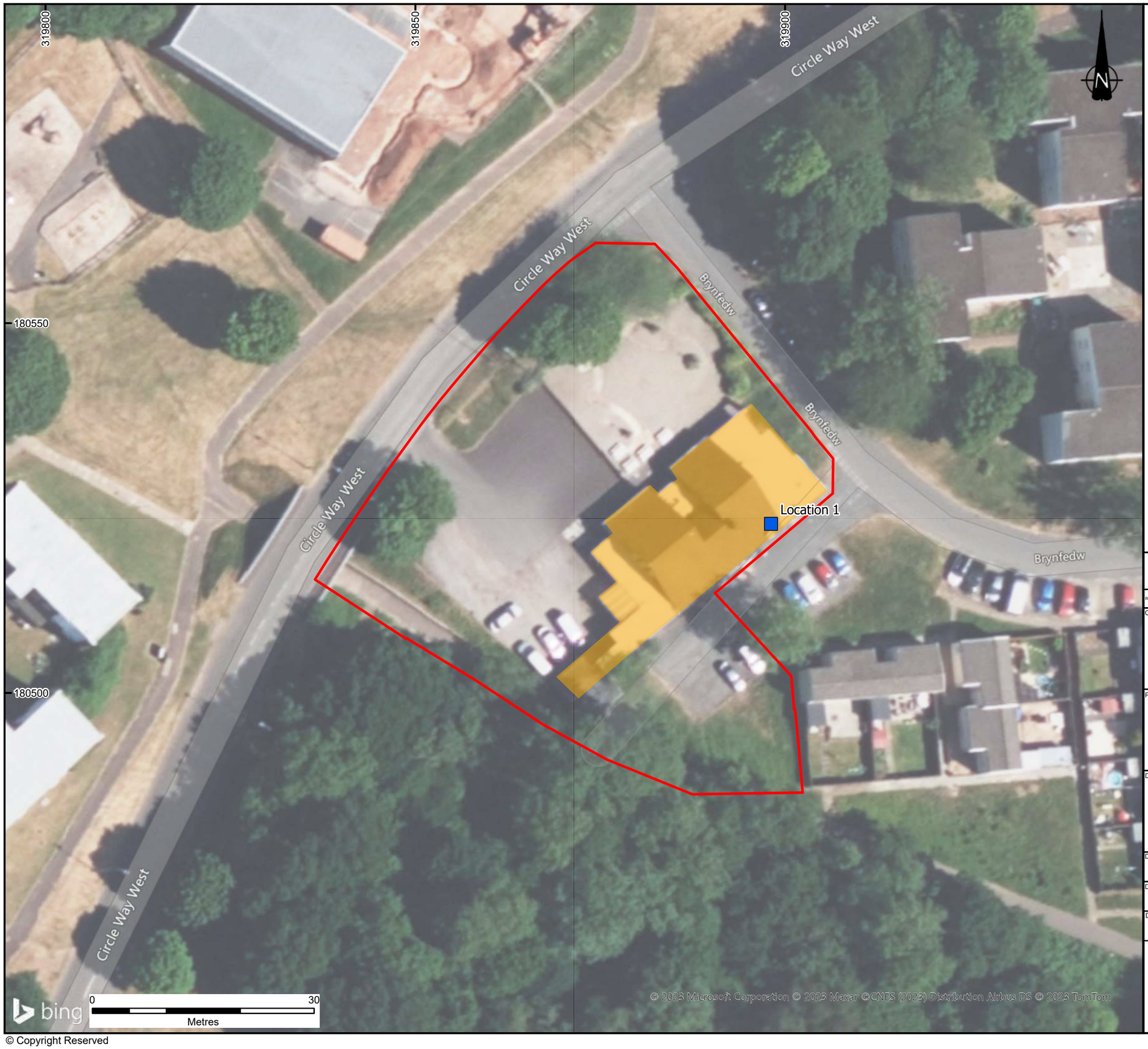

KEY

- Site Boundary
- Building with Moderate Bat Roost Suitability
- Automated Bat Detector Location

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

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D

CLIENT

CARDIFF COUNCIL

PROJECT

NEW PENN, CARDIFF

DRAWING TITLE

AUTOMATED BAT DETECTOR LOCATION - HIBERNATION SURVEY 2022/23

DRG No.		REV
CA12409-006		P01
DRG SIZE	SCALE	DATE
A3	1:500	21/04/2023
DRAWN BY	CHECKED BY	APPROVED BY
RCB	JJ	JH

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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

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Appendix 6

Nature Conservation Evaluation Criteria

Appendix 6 - **Summary of Criteria for Nature Conservation Evaluation**

Criteria	Description
Size	Large, continuous areas of habitat are considered to be of greater importance than small or fragmented areas.
Diversity	Species and habitat diversity, including variations in topography and wetness, increase the wildlife value.
Naturalness	This reflects man's intervention or management of the habitat. Most habitats of this survey are semi-natural. Naturalness indicates the amount of modification of the land by man. Generally a less modified area results in an increase in the nature conservation value.
Rarity	The scarceness of a habitat, and the presence of rare/uncommon species, relates to its importance and priority for nature conservation. Rarity is related to the frequency of occurrence at national or county level.
Fragility	Fragile habitats are those where changes due to man's intervention, environmental factors or natural succession can directly threaten it. Scrub invasion, agricultural improvement, fire and changes in hydrological regime are the most common threats.
Typicalness	This relates to the quality of the habitat in terms of how good an example it is of a recognised type.
Position in an ecological/ geographical unit	The relationship of a site to adjacent areas of nature conservation value. It is important to recognise the important and characteristic formations, communities and species of a district.
Recorded history	The extent to which a site has been used for scientific study and research is a factor of some importance.
Potential wildlife value	The likely quality of the habitat for birds, mammals, reptiles, amphibians and invertebrates if it is managed for wildlife. If appropriate habitat management is undertaken, it is possible for an increase in the diversity and nature conservation value of an area.
Intrinsic appeal	The knowledge of the distribution and numbers of popular groups of species such as birds, is greater than for obscure groups. Similarly, colourful wild flowers and rare orchids arouse more enthusiasm than liverworts. It is pragmatic to give more weight to some groups than to others.
Criteria are based on Ratcliffe, D.A. (1977). *A Nature Conservation Review*, Cambridge University Press	

Appendix 7

Proposed Site Layout, New Pennsylvania, produced by Powell Dobson Architects, Rev E, dated January 2023 and Strategic Landscape Plan, New Penn, Cardiff. Prepared by Soltys Brewster, Rev PR07, dated Dec 2022.

Schedule of Accomocation						
Plot	House type	Beds	Persons	GIA (Sqm)	Storeys	Parking
1	4P2B	2	4	85	2	1
2	4P2B	2	4	85	2	1
3	4P2B	2	4	85	2	1
4	4P2B	2	4	85	2	1
5	6P3B	3	6	105	2.5	1
6	6P3B	3	6	105	2.5	1
7	4P2B	2	4	85	2	1
8	4P2B	2	4	85	2	1
9	4P2B	2	4	85	2	1
10	6P3B	3	6	105	2.5	1
11	6P3B	3	6	105	2.5	1
Total	4 7					11

Indicative location of south facing PV panels. Each PV panel arrangement to be confirmed during detailed design stage.

0 5m 10m

Scale @ 1:200

NORTH

Figured dimensions and levels to be used. Any inaccuracies must be notified to the architect.
Detail drawings and large scale drawings take precedence over smaller drawings.

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Rev:		Rev:		Rev:		Rev:	
A	Plan revised to adhere to 3m easement from sewer line. **KP 27.01.2023**	D	Plan revised to show zebra crossing **KP 24.03.2023**				
B	Plan revised to respond to pre-app comments and changes made to sizes of footprint at Plots 5, 6, 10 & 11. **KP 08.03.2023**	E	Plan revised to exclude zebra crossing, update the pedestrian path to link with the crossing, further detail included within the rear yards & PV panel locations **KP 04.05.2023**				
C	Plan revised to revert back to 6P3B at Plots 5, 6, 10 & 11. **KP 16.03.2023**						

PRELIMINARY	
PLANNING	✓
DESIGN	
TENDER	
CONSTRUCTION	

powelldobson ARCHITECTS
Cardiff Office: Suite 1F, Building One, Eastern Business Park, Wern Fawr Lane, Old St Mellons, Cardiff CF3 5EA
Tel: +44 (0)33 33 201 001 Fax: +44 (0)29 2079 1212 email: cardiff@powelldobson.com

Drawing No. 22007 (05) 101 Rev. E

Contract: Cardiff Council, Cardiff 3 Sites New Pennsylvania

Title: Proposed Site Layout

Scale: 1: 200 @ A3
Date: January 2023
Drawn: KP
Checked: SI

Registered Office: Powell Dobson Ltd. Suite 1F, Building One, Eastern Business Park, Wern Fawr Lane, Old St Mellons, Cardiff CF3 5EA . Powell Dobson is a trading name of Powell Dobson Ltd a company registered in England and Wales No 3873802.

INDICATIVE PLANTING SCHEDULE

TREES (T)					
CODE	**BOTANIC NAME**	**COMMON NAME**	**FORM**	**GIRTH/HEIGHT**	**SPECIFICATION**
T1	Acer campestre 'Streetwise'	Field Maple	Standard	18-20cm	Rootball/Container Grown
T2	Amelanchier lamarckii	Snowy mespilus	Standard	16-18cm	Rootball/Container Grown
T3	Betula 'Edinburgh'	Silver Birch	Multi-stemmed	1.4m high	Rootball/Container Grown
T4	Sorbus aucuparia 'Streetwise'	Mountain Ash	Standard	18-20cm	Rootball/Container Grown
T5	Acer platanoides	Norway Maple	Standard	20-25cm	Rootball/Container Grown
T6	Acer rubrum	Red Maple	Standard	16-18cm	Rootball/Container Grown

SHADE TOLERANT NATIVE HEDGE MIX(HM1)		
6 plants per linear metre		
%	BOTANIC NAME	SPECIFICATION
15	Taxus baccata	1+1 transplant
30	Corylus avellana	1+1 transplant
40	Crataegus monogyna	1+1 transplant
15	Ilex aquifolium	3L pot grown

NATIVE HEDGE MIX(HM2)		
6 plants per linear metre		
%	**BOTANIC NAME**	**SPECIFICATION**
10	Cornus sanguinea	1+1 transplant
20	Corylus avellana	1+1 transplant
40	Crataegus monogyna	1+1 transplant
5	Ilex aquifolium	3L pot grown
10	Lonicera periclymenum	1+1 transplant
5	Rosa canina	1+1 transplant
10	Acer campestre	1+1 transplant

INDICATIVE SHRUBS/HERBACEOUS (S)				
CODE	**BOTANIC NAME**	**COMMON NAME**	**SPECIFICATION**	**DENSITY / m²**
S1	Ajuga reptans 'Catlin's Giant'	Bugle 'Catlin's Giant'	3L	7
S2	Bergenia 'Bressingham Ruby'	Elephant's Ears 'Bressingham Ruby'	3L	7
S3	Bergenia 'Bressingham White'	Elephant's Ears 'Bressingham White'	3L	7
S4	Choisya ternata	Mexican Orange Blossom	5L	5
S5	Cornus alba 'Elegantissima'	Silver Dogwood	7.5L	4
S6	Cornus stolonifera 'Flaviramea'	Golden twig dogwood	7.5L	4
S7	Hebe 'Autumn Glory'	Shrubby Veronica 'Autumn Glory'	7.5L	5
S8	Hebe 'Midsummer Beauty'	Shrubby Veronica 'Midsummer Beauty'	7.5L	5
S9	Lavendula angustifolia	English Lavender	5L	8
S10	Persicaria bistorta 'Superba'	Snakeweed 'Superba'	3L	6
S11	Potentilla fruticosa 'Abbotswood'	Shrubby Cinquefoil 'Abbotswood'	7.5L	5
S12	Rosmarinus officinalis	Rosemary	5L	5
S13	Santolina chamaecyparissus 'Nana'	Dwarf Cotton Lavender	3L	8
S14	Skimmia japonica 'Rubella'	Skimmia 'Rubella'	7.5L	5
S15	Stachys byzantina 'Silver Carpet'	Lambs' Ear 'Silver Carpet'	3L	7
S16	Viburnum opulus 'Nana'	Dwarf Guelder Rose	3L	5
S17	Viburnum tinus	Laurustinus	7.5L	4
S18	Vinca major 'Variegata'	Variegated Greater Periwinkle	2L	9
S19	Vinca minor	Dwarf periwinkle	2L	9
S20	Skimmia x confusa 'Kew Green'	Skimmia Kew Green	7.5L	5

MEADDOW MIX (MM)			
CODE	**NAME**	**SPECIFICATION**	**DENSITY (g/m²)**
MM1	Standard Cornfield Mixture	Emersgate EC1	4/m²
	Wild Flowers for Wetlands	Emorsgate EM8	8/m²
MM2	Standard Cornfield Mixture	Emersgate EC1	4/m²
	Wild Flowers for Woodland	Emorsgate EW1F	3/m²

RAIN GARDEN SPECIES (R)				
Code	**Latin Name**	**Common Name**	**Specification**	**Density - Number / m2**
R1	Ajuga reptans 'Catlin's Giant'	Bugle	2L	9
R2	Bergenia 'Bressingham Ruby'	Elephant's Ears 'Bressingham Ruby'	2L	8
R3	Bergenia 'Bressingham White'	Elephant's Ears 'Bressingham White'	2L	8
R4	Calamagrostis brachytricha	Korean feather reed grass	2L	5
R5	Cornus sanguinea	Dogwood	3L	5
R6	Geranium Rozanne 'Gerwat'	Geranium 'Rozanne'	2L	8
R7	Hemerocallis 'Burning Daylight'	Daylily 'Burning Daylight'	2L	8
R8	Hosta 'Royal Standard'	Plantain lily 'Royal Standard'	3L	5
R9	Hydrangea 'Annabelle'		3L	5
R10	Iris ensata 'Rose Queen'	Japanese water iris 'Rose Queen'	2L	9
R11	Lobelia cardinalis	Cardinal flower	2L	9
R12	Osmunda regalis	Royal Fern	2L	8
R13	Sambucus nigra	Elder 'Eva'	3L	5
R14	Verbena bonariensis	Purple Top	3L	8
R15	Vinca major 'Variegata'	Variegated greater periwinkle	2L	6
R16	Vinca minor	Periwinkle	2L	6

DRAFT

Rev.	Date	Comment	Approved	Drawn
PR07	10.05.23	Amendment to native hedge species	CC	YC
PR06	09.05.23	Amendments to suit to layout changes	CC	YC
PR05	02.05.23	Landscape scheme update to ecologist's comment	SB	CC
PR04	06.04.23	Minor graphic amendment	SB	CC
PR03	01.02.23	Amendments to suit to layout updated	SB	CC
PR02	21.12.22	Amendments to suit to layout updated	CC	YC
PR01	08.12.22	First issue	CC/SB	YC

PRELIMINARY | PLANNING | DESIGN | TENDER | CONSTRUCTION

soltysbrewster

4 Stangate House
Stanwell Road
Penarth
Vale of Glamorgan
CF64 2AA

Telephone:- + 44(0) 33 0013 0012
e-mail:- enquiry@soltysbrewster.co.uk

client
Cardiff Council

project
New Penn, Cardiff

drawing title
Strategic Landscape Plan

scale	drawn	approved	date
1:200 @ A1	YC	CC/SB	Dec 2022

drawing no. — revision

SB Project Number	Originator	Zone	Level	Type	Role	Number	revision
2284504	SBC	00	XX	DR	L	004	PR07

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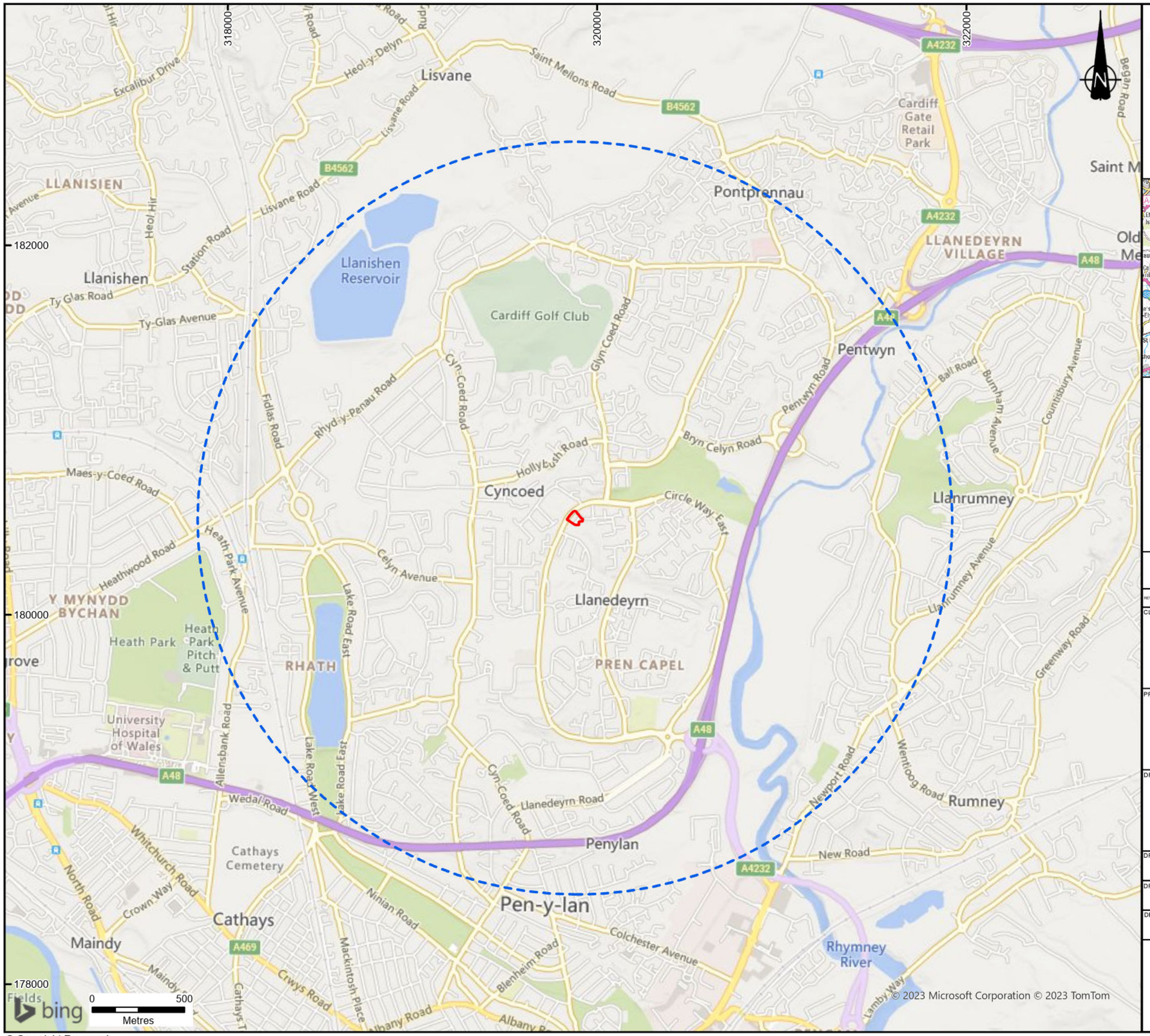
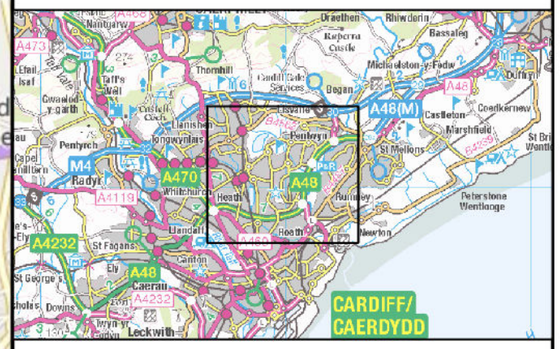
DRAWINGS



KEY

Site Boundary

2 km Radius



Notes:

Boundaries are indicative.

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REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
B	REVISED SITE BOUNDARY	11/05/23	GER	TS	JH
A	FIRST ISSUE	15/07/22	EL	TS	JH

CLIENT

CARDIFF COUNCIL

PROJECT

NEW PENN, CARDIFF

DRAWING TITLE

SITE LOCATION PLAN

DRG No.		REV
CA12409-002		B
DRG SIZE	SCALE	DATE
A3	1:20,000	11/05/2023
DRAWN BY	CHECKED BY	APPROVED BY
EL	TS	JH

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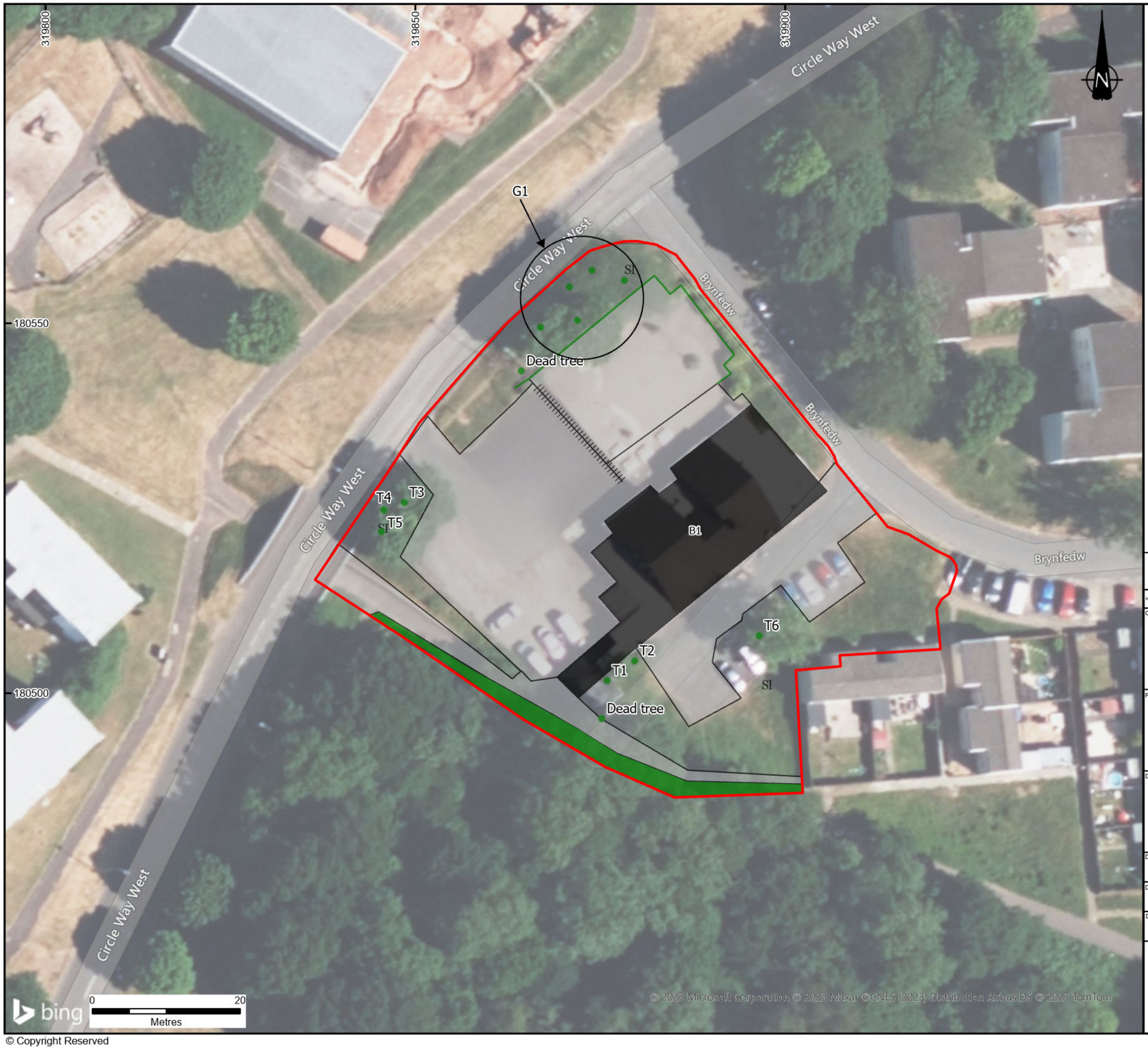

KEY

- Site Boundary
- Broadleaved woodland - semi-natural
- SI Poor semi-improved grassland
- Hardstanding
- Buildings
- Intact hedge - species-poor
- Fence
- Broadleaved Parkland/scattered trees (T)/ Group (G) number

Notes:
Coordinates to British National Grid.

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

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

REVISION	DETAILS	DATE	DRAWN	CHK'D	APP'D
B	REVISED SITE BOUNDARY AND ADDITIONAL HABITATS	11/05/23	GER	TS	JH
A	FIRST ISSUE	15/07/22	RCB	TS	JH

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CARDIFF COUNCIL

PROJECT
NEW PENN, CARDIFF

DRAWING TITLE
PHASE 1 HABITAT PLAN

DRG No.		REV
CA12409-004		B
DRG SIZE	SCALE	DATE
A3	1:500	11/05/2023
DRAWN BY	CHECKED BY	APPROVED BY
RCB	TS	JH

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KEY

- Site Boundary
- 500 m Radius
- Waterbodies

Notes:

Boundaries are indicative.

Aerial imagery shown for context purposes only.

REVISION	DETAILS	DATE	DRAWN	CHKD	APPD
B	REVISED SITE BOUNDARY	11/05/23	GER	TS	JH
A	FIRST ISSUE	15/07/22	EL	TS	JH

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CARDIFF COUNCIL

PROJECT

NEW PENN, CARDIFF

DRAWING TITLE

WATERBODY LOCATION PLAN

DRG No.	REV
CA12409-003	B

DRG SIZE	SCALE	DATE
A3	1:5,000	11/05/2023

DRAWN BY	CHECKED BY	APPROVED BY
EL	TS	JH

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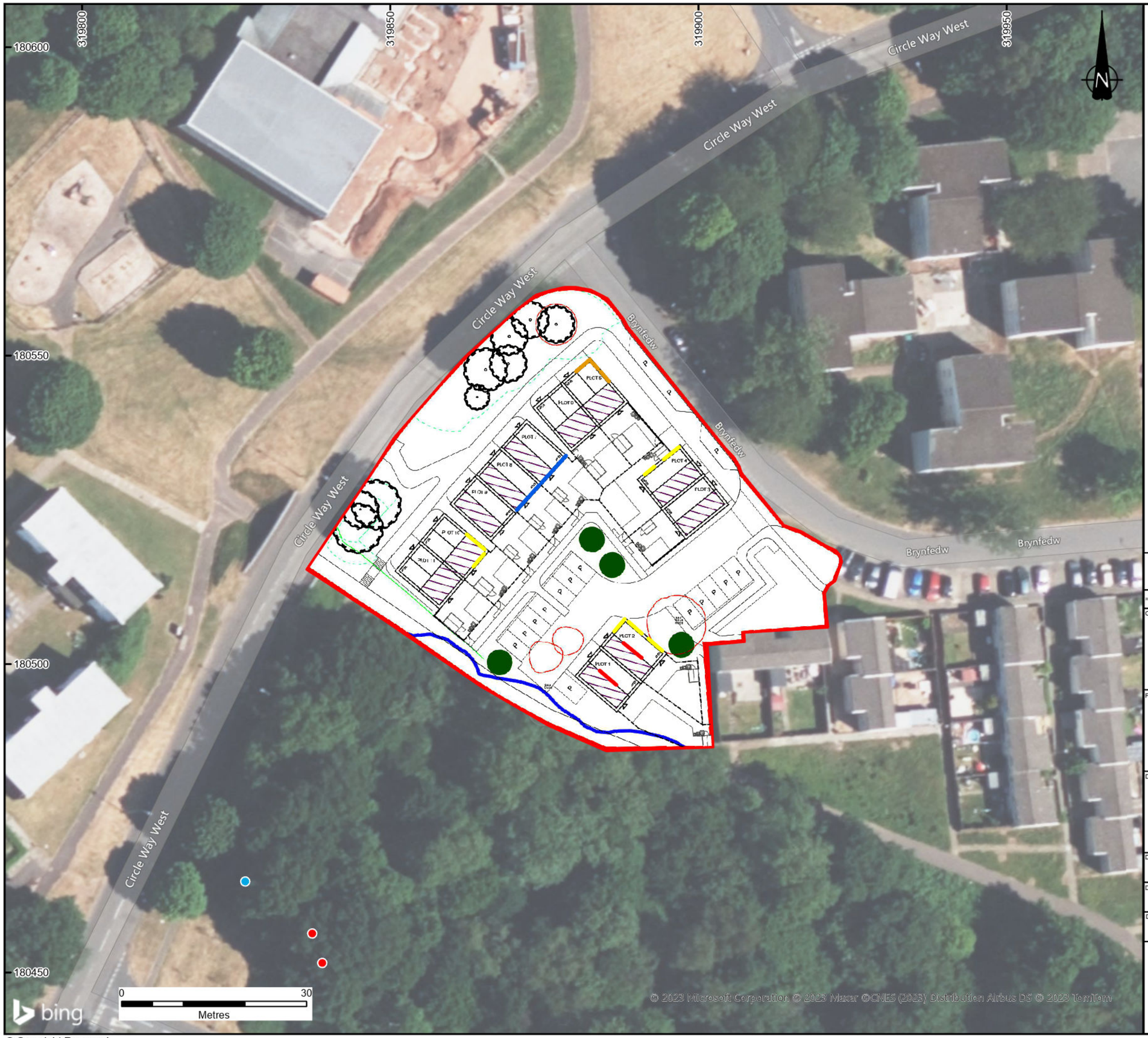

KEY

- Site Boundary
- Indicative location of south facing PV panels. Each panel arrangement to be confirmed during detailed design stage.
- Bat Ridge Tiles x 2 per plot
- Bat Soffit Boxes x 2
- Integrated House Sparrow Bricks x 7
- Integrated Swift Bricks x 3
- Crevice Dwelling Bat Box Suitable for Maternity Groups x1
- Schwegler 1FF Bat Box x 2

Notes:
Boundaries are indicative.
Aerial imagery shown for context purposes only.
Site Layout from Powell Dobson Architects

REVISION	DETAILS	DATE	DRAWN	CHKD	APPD

CLIENT

CARDIFF COUNCIL

PROJECT

NEW PENN, CARDIFF

DRAWING TITLE

BIODIVERSITY MITIGATION AND ENHANCEMENT PLAN

DRG No.		REV
CA12409-007		P01
DRG SIZE	SCALE	DATE
A3	1:600	12/05/2023
DRAWN BY	CHECKED BY	APPROVED BY
GER	CH	CH

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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
Desklodge
2 Redcliffe Way
Bristol
BS1 6NL
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

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