



Ecological Impact Assessment

Land at Tyn-y-Caeau, Margam

Western Bio-Energy Limited

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Non-Technical Summary

- i. In April 2025 Enzygo Ltd was commissioned by Western Bio-Energy Limited (the client) to undertake an Ecological Impact Assessment of Land at Tyn-y-Caeau, Margam, Port Talbot, SA13 2NR. (central grid reference: SS 7928 8642) located within the Neath Port Talbot County Borough Council planning authority.
- ii. The purpose of this report is to provide biodiversity information identifying ecological features, confirmed impacts/effect, and proportionate avoidance/mitigation/compensation strategies, followed by enhancements. This information will support the planning application and assist the Planning Officer in making an informed decision.
- iii. The following key ecological features and associated recommendations have been identified:
 - **Green Infrastructure, Hedgerow HPI, Individual Rural Trees, Lowland Mixed Deciduous Woodland (offsite)** – Retained habitats to be protected throughout the proposed development in line with BS5837:2012. 15 new trees and 150m of hedgerow to be planted during the construction phase.
 - **Bats (Roosting)** – 1x Soprano Pipistrelle (day roost) and 3x Lesser Horseshoe (day roost) recorded emerging from B1 across 2025 emergence surveys – both local value. Further hibernation surveys of B1 required to support a NRW licence. Tree T299 will be removed following precautionary methods.
 - **Bats (Foraging & Commuting)** – Construction phase to follow best practices to reduce likelihood of disturbing Bats. Artificial lighting will be designed in line with guidance to reduce disturbance. Commuting routes will be retained linking roosts with suitable habitat in the surrounding area.
 - **Badger & Priority Species** – Construction phase to follow best practices to reduce the likelihood of harming Badger and Priority Species.
 - **Breeding & Nesting Birds** – Suitable habitat should be cleared outside of the nesting season or will be supervised by a suitably-qualified ECoW.
 - **Specially Protected Birds (Barn Owl)** – B3 to be demolished under the supervision of an ECoW and outside of main nesting season. Barn Owl box to be erected on site.
 - **Common Reptiles** – Reasonable Avoidance Measures during the construction phase, retention of log piles currently present on site.
 - **Invasive Flora** – Specialist contractor commissioned to survey and remove Invasive Flora present. Construction phase will take measures to reduce likelihood of spread.
- iv. Additional biodiversity enhancements will include new native landscape planting, green roofs, living walls and an attenuation feature which will be managed to deliver biodiversity benefit.
- v. A Net Benefit for Biodiversity (NBB) will be confirmed according to DECCA framework, as outlined in the Planning Policy for Wales (PPW), in a separate document.
- vi. This report has demonstrated that, if the outlined mitigation measures are implemented in full and assuming a sensitive final site layout, no significant residual impact could be expected, and the application can demonstrate 'no net loss in biodiversity' and a 'biodiversity net gain' in accordance with Planning Policy Wales (PPW) and Local Planning Policy, subject to the completion of the further Phase 2 surveys and NRW bat mitigation licence.

1 Introduction

1.1 Commission

- 1.1.1 In April 2025 Enzygo Ltd was commissioned by Western Bio-Energy Limited (the client) to undertake an Ecological Impact Assessment of Land at Tyn-y-Caeau, Margam, Port Talbot, SA13 2RN. (central grid reference: SS 79299 86419), located within the Neath Port Talbot County Borough Council planning authority. This included Phase II protected species surveys.
- 1.1.2 *Enzygo Ltd are not considered to act as a Principal Designer for any mitigation/enhancement strategies identified within this document, in accordance with the Construction (Design and Management) Regulations 2015 (CITB, 2016).*

1.2 Proposed Development/Identification of Impacts

- 1.2.1 The study will inform full planning permission (Ref.: P2025/0187) for the redevelopment of the site for a data centre (use class B8) and supporting infrastructure, parking and associated works, including partial retention of an existing building for ancillary uses, and power connection to the existing Western Wood Biomass Plant. The proposed works will involve clearance of areas of the site to construct a data centre, car parking and landscaping. There are three existing buildings on site; the main building (Tyn-y-Caeau), an annexe and a small barn. Tyn-y-Caeau will be retained, refurbished and repurposed for ancillary use. The annexe and barn will be demolished. Access will be achieved via an existing unnamed track off the A48, which will be altered. Anticipated impacts during construction period include habitat loss, fragmentation, animal movements restricted through additional fencing, vehicle movements, hydrological pollution, and lighting/sound pollution. Anticipated impacts during operational period include habitat loss, light pollution and noise/visual disturbance. It is our understanding that there will be no further construction phase or use of any surrounding land in relation to this report. No cable route or Point of Connection (PoC) have been considered as it is our understanding that these will be installed by a statutory undertaker. Refer to **Appendix A** for Proposed Site Plans.

1.3 Aims and Objectives

- 1.3.1 The purpose of this report is to provide biodiversity information which succinctly identifies ecological features on site and within the corresponding zone of influence, confirmed impacts resulting from the proposed application, associated effect to identified ecological features, confirmed proportionate avoidance/mitigation/compensation strategies, and confirmed enhancements that will be implemented in accordance with the British Standard for Biodiversity BS42020:2013 (BSI, 2013).
- 1.3.2 This information will support the planning application and assist the Planning Officer in making an informed decision on whether the application can demonstrate 'no net loss in biodiversity' and a 'biodiversity net gain' in accordance with Planning Policy Wales (PPW) and Local Planning Policy.
- 1.3.3 This report has been produced with reference to current Guidelines for Ecological Impact Assessment in the UK and Ireland, Terrestrial, Freshwater, Coastal and Marine (CIEEM, 2018), Guidelines for Ecological Report Writing (CIEEM, 2017), and is in accordance with Biodiversity – Code of practice for planning and development BS42020:2013 (BSI, 2013).

1.4 Background/Acknowledgments

- 1.4.1 A search of the LPA planning portal (Neath Port Talbot Borough Council, 2025) revealed a planning application approximately 0.2km to the west of the site (Ref.: P2025/0446). This application was supported by an Ecological Technical Note (BSG Ecology, 2025) which highlighted the Junction 38 Wetland Complex Site of Importance for Nature Conservation (SINC) and protected species which may be within the SINC as a potential ecological constraint. This Technical Note has been referred to when undertaking this assessment.
- 1.4.2 A previous EclA has been produced for this site (Tyler Grange, 2024), which has been referred to when undertaking this assessment.
- 1.4.3 It is our understanding that to date there has been no correspondence with the County Ecologist or any statutory consultees i.e. Natural Resources Wales, regarding this application. Additionally, we have not been informed of any Local Validation requirements i.e. biodiversity checklist for completion or specific standards for surveys.

1.5 Local Planning Policy

- 1.5.1 The following policies of the Adopted Local Development Plan (2011-2026) (Neath Port Talbot Borough Council, 2016) are applicable to biodiversity:
- SP15 – Biodiversity and Geodiversity
 - SP16 – Environmental Protection
 - EN6 – Important Biodiversity and Geodiversity Sites and
 - EN7 – Important Natural Features
- 1.5.2 The “Supplementary Planning Guidance: Biodiversity and Geodiversity” (Neath Port Talbot Borough Council, 2018) document has been reviewed in the production of this assessment.
- 1.5.3 Refer to **Appendix B** for relevant details of European and National Legislation, and Planning Policy Wales.

1.6 Site Context

- 1.6.1 The approximately 2.71ha site contains three buildings; Tyn-y-Caeau (B1), Annexe (B2) and Barn (B3), as well as associated grounds/gardens. The grounds have been left abandoned and unmanaged, and the habitats present include rough neutral grassland, hedgerows and individual trees. The site is bordered to the north, east and west by major roads, and to the south by a grassland field. **Figure 1** (below) shows the survey area.
- 1.6.2 The site lies in the Bae Abertawe/Swansea Bay National Landscape Character Area (Natural Resources Wales, 2014) which is characterised as *“a narrow coastal plan (that) links the lowlands of Glamorgan to those of Gwendraeth. In the middle section around Port Talbot its width is constricted by the adjacent sea and steeply uplands. Extensive sandy coast is backed by dunes, with lagoons and important coastal heath.”*

Figure 1 – Survey Area



Image courtesy of MapBox. Imagery Date 2025.

2 Methodology

2.1 Desk Study

2.1.1 Desk study details were obtained from the following sources on the associated dates to provide background on ecological features in the vicinity of the site. In each case the search included the site and the specified area beyond the site boundary based on the expected zone of influence. Candidate and potential designations are considered too as these are also legally protected. Records obtained included:

- Statutory sites designated or classified under international conventions or European legislation within a 10km radius, statutory sites designated under national legislation (including Marine), within a 2km radius [10/04/2025] (DEFRA, 2025); and Priority Habitat & Ancient Woodland Inventory within a 0.5km radius [South-east Wales Biodiversity Record Centre (SeWBReC) 30/09/2025] (DEFRA, 2025) and DataMapWales, 29/09/2025 (Welsh Government and NRW, 2025);
- Tree Preservation Orders (TPOs) and Biodiversity Conservation Areas within the immediate zone of influence 29/09/2025 (Neath Port Talbot County Borough Council, 2025).
- Waterbodies within a 0.5km radius (Online mapping sources including: Google Maps; MAGIC; and Ordnance Survey Street View, 29/09/2025).
- Legally protected species, any Priority species (which includes: National Biodiversity Species, Local BAP Species, Species of conservation concern and Red Data Book (RDB) species, Birds of Conservation Concern (BOCC), nationally rare and nationally scarce species, and OSPAR Commission list of threatened/declining species) and Invasive species (listed under section 14 of Schedule 9 only) within a 2km radius, and any Locally designated wildlife sites, notified Local Biodiversity Action Plan (BAP) Habitats, and important hedgerows/veteran trees within the immediate zone of influence [SeWBReC, 30/09/2025].

2.1.2 Data received has been extracted and summarised using QGIS 2.18, with original sources not extracted directly. Data has also been edited where relevant to prevent sensitive or confidential records being made public in accordance with Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK (CIEEM, 2023).

2.2 Field Survey

2.2.1 Field Surveys were undertaken on the following dates by the identified staff, all of whom satisfy necessary field survey competencies as stipulated by the Chartered Institute for Ecology and Environmental Management (CIEEM). Weather conditions on the day of survey have been included and where relevant survey/class licence numbers referred to.

Table 1 – Survey Dates and Conditions

Survey	Date & Time [Start/End]	Staff/Licence	Environmental Conditions
Update PEA, PRA, GLTA, setting out reptile refugia	13/05/2025 [12:00/14:00]	Joseph Cole [JC] BSc (Hons), Qualifying CIEEM Member – Consultant Ecologist working as an accredited agent under Derek Allan [DA] MSc, BSc (Hons), MCIEEM – Director of Ecology NRW Bat Survey Licence S092285/1.	21°C, 25% cloud, light breeze, dry
Reptile P/A Survey #1	02/06/2025 [08:00/09:00]	JC	15°C, 0% cloud, strong breeze, dry
Bat Emergence Survey #1	03/06/2025 [21:11/22:56] Sunset: 21:16	JC Charlie Kempson [CK] MSc, BSc (Hons), ACIEEM – Senior Ecologist Mark Claridge [MC] MSc, BSc (Hons), Qualifying CIEEM Member – Consultant Ecologist Greg Green [GG] BSc (Hons) – Assistant Ecologist Jenny Cole [JeC] – Experienced Field Surveyor	14°C, 75% cloud, light breeze, dry
Reptile P/A Survey #2	04/06/2025 [08:30/09:30]	MC	15°C, 100% cloud, light breeze, dry
Reptile P/A Survey #3	06/06/2025 [08:00/09:00]	MC	14°C, 100% cloud, light breeze, dry
Bat Emergence Survey #2	24/06/2025 [21:37/23:07] Sunset: 21:52	CK, JC, MC, JeC	17°C, 100% cloud, light breeze, drizzle
Bat Emergence Survey #3	19/08/2025 [20:15/22:00] Sunset: 20:30	CK, JC, MC, JeC	16°C, 100% cloud, no wind, dry
Reptile P/A Survey #4	16/09/2025 [15:30/16:30]	CK	16°C, 75% cloud, strong breeze, dry
Reptile P/A Survey #5	23/09/2025 [08:45/09:45]	MC	14°C, 0% cloud, light breeze, dry
Reptile P/A Survey #6	24/09/2025 [09:00/10:00]	MC	14°C, 25% cloud, light breeze, dry
Reptile P/A Survey #7	30/09/2025 [08:30/09:30]	MC	15°C, 25% cloud, light wind, dry

UK Habitat & Preliminary Ecological Appraisal

- 2.2.2 In accordance with Guidelines for Preliminary Ecological Appraisal 2nd Edition (CIEEM, 2017) the Preliminary Ecological Appraisal (PEA) survey included the following.

Mapping of Habitat Types

- 2.2.3 This assessment has utilised the UK Habitat Classification (UKHab) methodology (UKHab, 2020) as the recommended published method of habitat classification. It has been used to categorise and map the primary habitat types present within the survey area using a standard set of habitat categories, with associated secondary codes/features identified where applicable. Details of current management and habitat condition have also been recorded where appropriate.

- 2.2.4 Each of the main habitats has been described; including details of component plant species abundances (recorded using the DAFOR scale: D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare). Additionally, any stands of non-native invasive plant species were recorded. Habitat extents have been visually mapped onto a topographic plan, with approximate location/areas recorded only (a GPS unit has not been utilised to accurately recorded these).

Assessment of possible presence/likely importance for Protected & Priority Species

- 2.2.5 An assessment of the possible presence of protected or priority species, and the likely importance of habitat features present for such species has also been undertaken, particularly where uncommon or specialised habitats are present in accordance with current PEA guidelines (CIEEM, 2017). However, no specific protected species survey has been undertaken unless listed under further surveys as below. Any incidental sightings of protected or priority species, or field signs of such species has also been recorded. Species assessed include Plants & Fungi; Terrestrial/aquatic invertebrates; Fish; Amphibians; Reptiles; Breeding, wintering and migratory Birds; Bats (including potential roost sites, foraging and commuting habitats/features), Badger and Other Mammal species.

Bat Preliminary Roost Assessment (PRA), Ground-level Tree Assessment (GLTA) and Dropping Analysis

- 2.2.6 In accordance with current guidance (Collins, Bat surveys for Professional Ecologists: Good Practice Guidelines (4th edn), 2023), an inspection of structures within the site was undertaken. Equipment used to aid the survey included: low & high-powered torches. Notes were made on the following:
- Type, construction and age of structure (particularly if traditional materials have been used or the presence of specialist bat roosting features);
 - Presence/absence of potential roost features (i.e. crevices between bridge girders, cracks within concrete etc);
 - Environmental factors that would increase the probability of bat presence (i.e. dark zones with no/limited exterior lighting, south/west facing aspects, good quality foraging/commuting habitat nearby particularly prominent linear features) and those that would decrease the probability of bat presence (high light levels, dense urban areas, recent works, high levels of noise or vibration or human disturbance, poor quality foraging/commuting habitat etc); and
 - Type and location of any roosting bat evidence (i.e. presence of live or dead bats, audible squeaking, droppings, feeding remains, urine stains, grease marks etc).
- 2.2.7 With reference to current survey guidelines BS8596:2015 (BSI, 2015) & (Collins, 2023), a scoping (non-specialist) survey for roosts of individual trees and groups of trees within and immediately adjacent to the site, was undertaken. Now known as a Ground Level Tree Assessment (GLTA). Each tree was visually inspected from the ground (with the aid of binoculars and a high-powered torch) to identify Potential Roosting Features (PRFs). At the same time, a secondary (non-specialist) survey for roosts: individual trees and groups of trees was undertaken from the ground only where potential PRFs were identified. No at height survey was undertaken, nor use of an endoscope. Any signs of bat use or bat presence was recorded.

- 2.2.8 Additionally, where bat droppings are identified, an assessment of these is undertaken (i.e. measurement and characteristics recorded) in accordance with current guidance (Stebbing, 2007), and a sample taken for later eDNA analysis, where requested.

Bats

- 2.2.9 In 2025 three dusk emergence surveys were undertaken of buildings on-site with suitable roosting features to determine presence/likely absence of roosting Bats & status of roost where present in accordance with guidance (Collins, 2023). The dusk emergence surveys commenced approximately 30 minutes prior to sunset and lasted until approximately 1.5-2 hours after sunset (depending upon the level of activity encountered & visibility of buildings). Five surveyors were utilised to adequately cover all aspects of the suitable building & potential egress points. Pulsar Axion 2 LRF XQ35 Pro IR cameras were additionally utilised to aid surveyors, allowing recording of bat activity in darker environments.
- 2.2.10 During the survey, the surveyors recorded the time, location, species, and behaviour (i.e. emergence, foraging, commuting or swarming) of each bat pass. Additional factors, such as, the number of bats, flight height, bat appearance and relative speed, were recorded where observed. The surveyors were equipped with Bat Logger M2. Bat echolocation calls were saved onto digital audio recorders and iPads.

Reptile Presence/Absence Surveys

- 2.2.11 Artificial refugia material was set out throughout suitable reptile habitats within the proposed development site. Current survey guidelines recommend a refuge density of between five and ten refuges per hectare of suitable reptile habitat (Froglife, 1999), however the more refugia used the greater the chance of detection. All the 2.71ha site is suitable habitat for a range of common reptiles. A total of 50 refugia (roofing felts 50x50cm in size) was considered to provide suitable trap density. The refugia were left to bed down for at least 1 week prior to first check. During this time, favourable conditions develop at the traps (e.g. suitable humidity and temperature gradient), vegetation beneath dies back, and reptiles have time to discover and become more familiar with them.
- 2.2.12 The refugia were checked seven times to determine presence/likely absence & distribution of reptile species, as well as determine population size where present in accordance with Reptile Survey: An introduction to planning, conducting and interpreting surveys for snake and lizard conservation (Froglife, 1999). All visits were undertaken during the appropriate season i.e. mid-April to October, at an appropriate time of day, and in suitable weather conditions i.e. peak air temperature between 9-20°C.
- 2.2.13 In addition to checking the refugia for reptiles, direct observation of any reptiles within the site not using the utilising traps was also undertaken. This complementary method was undertaken by the surveyor slowly walking, treading as quietly as possible, between traps and observing areas suitable for reptiles. Particular attention was paid to potential basking spots (e.g. open, sunny habitats close to cover) and to listen for rustling of vegetation. Where a suspected reptile was heard but not seen (or only a fleeting glimpse gained) the area was returned to around 10 minutes later to search for any reptile moving back out into a basking spot.
- 2.2.14 The surveyor recorded the location, number, species, and sex of each reptile species encountered. Any other notable wildlife encountered were also recorded. Where reptiles were detected through direct observation (i.e. not at a numbered refugia) these were allocated to the nearest refugia number.

2.3 Assessment

Bat PRA and GLTA

2.3.1 Based on the findings of the survey, each building/structure has been classified into one of the following categories in accordance with current guidance (Collins, 2023). The assessment is made irrespective of species conservation status, which is established after presence is confirmed/following further surveys:

- Known or confirmed roost – Structure with evidence of bat use or bat presence;
- High Suitability – A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat;
- Medium Suitability – A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status;
- Low Suitability – A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions, and/or suitable surrounding habitat to be used on a regular basis or by large numbers of bats (i.e. unlikely to be suitable for maternity or hibernation); or
- Negligible Suitability – Negligible features likely to be used by roosting bats.
- None – No suitability for roosting bats.

2.3.2 Where roosts are identified (irrespective of species conservation status), these have been categorised as follows in accordance with current guidance (Collins, 2023):

- Transitional roost (April-September/October) – used by a few individuals or occasionally small groups of bats on waking from hibernation or in the period prior to hibernation;
- Maternity roost (May-August) – used by breeding females, where babies are born and raised to independence. Adult males rarely found here;
- Satellite roost (May-August) – used by a few individuals to small groups of breeding females as alternative roost sites in close proximity to maternity roosts;
- Mating roost (September-November) – established by males of some species to display/call to females to mate;
- Hibernation roost (October-March) - where bats may be found during the winter. They vary greatly in terms of the number of individuals and diversity of species using them;
- Night roost (March-November) – used by bats as roosts other than traditional day roosts to rest in during the night. May be used by a single individual on occasion or regularly by an entire colony;

- Day roost (March-November) – used by bats during the day to rest in, often by males. Bats may regularly use a number of days roosts or the same site for several weeks;
- Feeding roost (May-November) – can be occupied by a single bat or a few individuals to an entire colony to feed, shelter from the weather or to rest temporarily; and
- Swarming sites (August-November) – where large numbers of bats from several species.

2.3.3 Following the framework for valuing bats in Ecological Impact Assessment set out by Wray et al. (2007), bat roosts are assigned a value, based on roost type and species rarity, using a geographic frame of reference, as detailed in **Tables 2 and 3** (below).

Table 2 – Categorisation of Bats by National Rarity

Rarity within Range	England	Wales	Scotland	Northern Ireland
Common (population over 100,000)	Common Pipistrelle Bat (Pipistrellus pipistrellus), Soprano Pipistrelle Bat (Pipistrellus pygmaeus), Brown Long-eared Bat (Plecotus auritus)	Common Pipistrelle Bat, Soprano Pipistrelle Bat	Common Pipistrelle Bat, Soprano Pipistrelle Bat	Common Pipistrelle Bat, Soprano Pipistrelle Bat
Rarer (population 10,000-100,000)	Lesser Horseshoe Bat (Rhinolophus hipposideros), Whiskered Bat (Myotis mystacinus), Brandt's Bat (Myotis brandtii), Daubenton's Bat (Myotis daubentonii), Natterer's Bat (Myotis nattereri), Leisler's Bat (Nyctalus leisleri), Noctule Bat (Nyctalus noctula), Nathusius' Pipistrelle Bat (Pipistrellus mathusii), Serotine Bat (Eptesicus serotinus)	Lesser Horseshoe Bat, Daubenton's Bat, Natterer's Bat, Brown Long-eared Bat	Daubenton's Bat, Natterer's Bat, Brown Long-eared Bat	Daubenton's Bat, Natterer's Bat, Leisler's Bat, Nathusius' Pipistrelle Bat, Brown Long-eared Bat
Rarest (population under 10,000)	Greater Horseshoe Bat (Rhinolophus ferrumequinum), Bechstein's Bat (Myotis bechsteinii), Alcathoe Bat (Myotis alcathoe), Barbastelle Bat (Barbastelle barbastellus), Grey Long-eared Bat (Plecotus austriacus)	Greater Horseshoe Bat, Whiskered Bat, Brandt's Bat, Bechstein's Bat, Alcathoe Bat, Noctule Bat, Nathusius' Pipistrelle Bat, Serotine Bat, Barbastelle Bat	Whiskered Bat, Brandt's Bat, Alcathoe Bat, Noctule Bat, Nathusius' Pipistrelle Bat, Leisler's Bat	Whiskered Bat
*Vagrant species and	Greater Mouse-eared Bat (Myotis myotis), Parti-coloured Bat (Vespertilio murinus), Kuhl's Pipistrelle Bat (Pipistrellus kuhlii), Savi's Pipistrelle Bat (Hypsugo savii), Pond Bat (Myotis dasycneme), Notch-eared Bat (Myotis emarginatus), Northern Bat (Eptesicus nilssonii)			

Rarity within Range	England	Wales	Scotland	Northern Ireland
occasional visitors				

Table 3 – Roost Valuation System

Geographic Frame of Reference	Roost Types
District, Local or Parish	Feeding Perches (common species), individual bats (common species), small numbers of non-breeding bats (common species), mating sites (common species)
County	Maternity sites (common species), small numbers of hibernating bats (common and rarer species), feeding perches (rarer/rarest species), individual bats (rarer/rarest species), small numbers of non-breeding bats (rarer/rarest species)
Regional	Mating sites (rarer/rarest species) including well-used swarming sites, maternity sites (rarer species), hibernation sites (rarest species), significant hibernation sites
National/UK	Maternity sites (rarest species), Sites of Special Scientific Interest (SSSI)
International	Special Areas of Conservation (SAC)

2.3.4 Following the preliminary assessment of trees, based on the signs present, each tree was classified as one of the following categories in accordance with current guidance (Collins, 2023):

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

2.3.5 Where PRFs are identified, they are categorised in relation to the suitability for roosting bats based on the following, and to be applied using professional judgement in accordance with current guidance (Collins, 2023):

- PRF-I – PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
- PRF-M – PRF is suitable for multiple bats and may therefore be used by a maternity colony.

Reptiles

2.3.6 Each survey visit may reveal only a small sample of the reptile population occurring on site, because the proportion of individuals recorded varies according to weather, migration patterns etc. A mechanism known as the Key Reptile Site Register can be used to obtain a basic evaluation of the population size and importance of the site. It has been designed to identify and promote the safeguarding of important reptile sites, with outstanding assemblages being the guiding principle in judging sites. To qualify for the Key Reptile Site Register, the site must meet at least 1 of the following criteria (Froglife, 1999):

- Supports 3 or more reptile species;
- Supports 2 snake species;

- Supports an exceptional population of 1 species;
- Supports an assemblage of species scoring at least 4; and
- Does not satisfy any of the above which is of particular regional importance due to the local rarity.

Table 4 – Key Reptile Site Register Population Scores

Species	Low Population (Score 1)	Good Population (Score 2)	Exceptional Population (Score 3)
Adder (<i>Vipera berus</i>)	<5	5-10	>10
Grass Snake (<i>Natrix helvetica</i>)	<5	5-10	>10
Viviparous Lizard (<i>Zootoca vivipara</i>)	<5	5-20	>20
Slow-Worm (<i>Anguis fragilis</i>)	<5	5-20	>20

Figures in the table refer to maximum number of adults seen by observation and/or under refugia (placed at a density of up to 10 per hectare, by one person in one day).

General

- 2.3.7 A level of importance has been assigned to each ecological feature, where sufficient baseline data is available to do so, in accordance with current guidance (CIEEM, 2018). This is defined within a geographical context as follows: International and European; National; Regional; Metropolitan, County, vice-county or other local authority-wide area; River Basin District; Estuarine system/Coastal cell; and Local (plus Negligible where no associated value has been identified). For example, importance of designated sites reflects the geographical context of the designation (where designated sites no longer meet designation criteria and those formally 'de-notified' OR where an undesignated site meets published selection criteria must also be considered). When considering habitats and species contextual information about distribution and abundance of that habitat/species in the area must be considered (if the habitat/species status is currently in a degraded or unfavourable condition its potential value should be considered).
- 2.3.8 The assessment then considers potential impacts (both positive and negative) generated during the construction and operational phase of the proposed application. Only impacts that are likely to be significant are considered. Impacts that are either unlikely to occur, or if they did occur are unlikely to be significant, are not considered.
- 2.3.9 Cumulative impacts are then considered where the application meets criteria in accordance with national EIA screening guidance (GOV.UK, 2019), and were agreed with the competent authority during scoping. This takes into consideration existing background levels of threat or pressure, looks at critical thresholds, and assess both additive/incremental and associated/connected impacts and effects.
- 2.3.10 Relevant aspects of ecological structure and function are then considered when determining if identified impacts will have a significant effect upon ecological features. Where necessary, this assessment utilises information from other specialists i.e. air quality, hydrology etc, to determine the level of impact. In accordance with current guidance (CIEEM, 2018) these are described using the following characteristics, where relevant: positive or negative; extent; magnitude; duration; frequency and timing; and reversibility.
- 2.3.11 The mitigation hierarchy is then explored in accordance with BS42020:2013 (BSI, 2013). This seeks as a preference to avoid impacts, then to mitigate unavoidable impacts, and as a last resort, to compensate for unavoidable residual impacts that remain after avoidance and mitigation measures. Justification has been provided by the client/their planner where the

mitigation hierarchy cannot be followed, or for example where compensation is a preferred approach where the competent authority has adopted a County wide strategy i.e. District Level Licensing Schemes (GOV.UK, 2019). In this instance current national Biodiversity Offsetting guidance has also been consulted (GOV.UK, 2019). Additional information has also been provided by the client/their planner where the applicant wishes to demonstrate exceptional circumstances or where they wish to pursue alternative strategies. Any residual impacts following mitigation measures etc are then identified.

- 2.3.12 All mitigation measures follow species specific current best practice guidance, and the source has been identified accordingly. Deviation from guidance has been explained by the ecologist and is proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed works.
- 2.3.13 It is important that planning decisions are based on up-to-date ecological data, and the specific timeframe over which survey data is considered valid should follow general advice (CIEEM, 2019). Although it should be noted that the presence/absence and status of protected species can change seasonally/annually. The age of data should also be assessed separately when considering the submission of an EPS Licence (i.e. Natural Resources Wales may require data to be from the current season).
- 2.3.14 Local Environmental Records Centres (LERC) issue a licence for use of provided biodiversity data for 1 year only, after which time this should be renewed to validate an application (and reports updated accordingly to incorporate any new records). Following completion of surveys all relevant biodiversity data will be submitted to the relevant LERC and other groups as appropriate.

2.4 Limitations

- 2.4.1 Data held by consultees may not be exhaustive. The absence of evidence does not indicate evidence of absence. Enzygo cannot take responsibility for the accuracy of external data sources and as such discrepancies and inaccuracies may occur.
- 2.4.2 Natural Resources Wales do not hold information of Ancient Woodland less than 2ha in size.
- 2.4.3 Records over 10 years old for transient species (as these are likely to have moved during the interim) and species protected from sale only under the W&C Act 1981 and amendments, are excluded (as these are not relevant to a planning application). Additionally, given the large number of priority species, these have only been included if identified from the desk study and/or habitats recorded on site have been assessed as providing suitable conditions.
- 2.4.4 Sites designated for Landscape or Geological reasons have not been included within this report.
- 2.4.5 The habitat survey was undertaken at an optimal time of year (May) when most floral species are visible, and habitats can be easily classified. Some species of plant are only identifiable during summer months. However, most species have begun germinating by April, and so most species were identifiable. Survey timing is not considered to be a significant limitation.
- 2.4.6 This document does not contain a comprehensive list of botanical species on site. Only plant species characteristic of each habitat and incidental observations of notable plant species were recorded.
- 2.4.7 All areas of the site (including internal access) were fully accessible.

- 2.4.8 It should be noted that Long-eared Bats in particular echolocate more quietly, and Horseshoe Bat species in particular echolocate more directionally, compared to other bat species and so can sometimes be more difficult to detect and may go unrecorded. AutoID identified Grey Long-eared on a limited number of call registrations, but due to low confidence these were changed to their alternatives, Brown Long-eared.
- 2.4.9 Auto ID is intended for use in analysing recordings of single bats in free flight, low clutter environments. On average, more than half of such recordings will result in classifications with 80% accuracy. Recordings of roost emergence, multiple bats, captive bats, bats in high-clutter environments or bat social calls are not suitable for Auto ID and results may not be accurate. Kaleidoscope classification software is not intended to replace expert human analysis, and as such results will contain false positives and false negatives Species from the *Myotis* and *Nyctalus* genera are notoriously difficult to distinguish in the field and from recorded sonograms, as there is considerable overlap in their range of echolocation frequencies, which may also result in false positives. Due to this considerable overlap in call nature, where *Myotis* species have been recorded these have been reported to genus level only.
- 2.4.10 Another limitation of the analysis software is that recordings are only assigned to one species, even when two or more species are being recorded in the same instance. In these cases, the recordings have been classified as the rarer of the species (i.e. *Myotis* sp. or *Noctule* over Common Pipistrelle). In addition, from the data produced from static detectors, the number of recordings does not necessarily indicate the number of individual bats present. A large number of recordings in a single night may represent one individual bat flying repeatedly past the detector rather than a large number of individuals.

3 Baseline Ecological Conditions

- 3.1.1 Ecological features identified by the desk study/field survey are presented in **Table 5** (below), along with their details and associated ecological value. Refer to **Drawing CRM9026001-ENZ-XX-XX-DR-Z-0001-UK Habitat Classification Map**, **Drawing CRM9026001-ENZ-XX-XX-DR-Z-0002 Bat Emergence Survey** and **Drawing CRM9026001-ENZ-XX-XX-DR-Z-0003 Reptile Survey** for the location/extent of ecological features where relevant.

Table 5 – Ecological Features

Ecological Feature	Details	Ecological Importance
Statutory sites designated or classified under international conventions or European legislation		
Kenfig/Cynffig Special Area of Conservation (SAC) 2.85km south	Annex I habitats that are a primary reason for selection of this site: - Fixed coastal dunes with herbaceous vegetation - Dunes with <i>Salix repens</i> ssp. <i>argentea</i> - Humid dune slacks - Hard oligo-mesotrophic waters with benthic vegetation of <i>Chara</i> spp. Annex II species that are a primary reason for selection of this site: - Petalwort - Fen Orchid	International
Glaswell Tiroedd Cefn Cribwr/Cefn Cribwr Grasslands SAC 6.81km south-east	Annex I habitats that are a primary reason for selection of this site: - Molinia meadows on calcareous, peaty or clayey-silt-laden soils Annex II species that are a primary reason for selection of this site: - Marsh Fritillary butterfly	International
Statutory sites designated under national legislation		
Eglwys Nunydd Reservoir Site of Special Scientific Interest (SSSI) 0.55km south	The largest sheet of fresh water in the country, attracting large numbers of wintering waterfowl including Great Crested and Little Grebes, Mallard, Gadwall and Coot.	National
Margam Moors SSSI 1.21km south-west	The last remaining example of the once extensive coastal levels in West Glamorgan, supporting a range of plants of the edge of the geographic range and nationally important invertebrates.	National
Local Nature Reserves (LNR)		
None within 2km		
Other locally designated wildlife sites		
Neath Port Talbot (NPT) Watercourses Site of Importance for Nature Conservation (SINC) 0.09km east	No citation available.	County

Ecological Feature	Details	Ecological Importance
NPT Ancient Semi-natural Woodland SINC 0.10km north-east	No citation available.	County
Junction 38 Wetland Complex SINC 0.11km west	20.47ha of native woodland, lowland fen and Purple Moor-grass and rush pasture. Water Vole, Otter, Grass Snake, Common Lizard, Reed Bunting and Cetti's Warbler have all been recorded within the site.	County
Margam Country Park SINC 0.16km east	326ha of wood pasture and parkland, ponds, and mosaic habitats. Lesser Horseshoe, Greater Horseshoe, Barbastelle, Brown Hare and Adder have all been recorded within the site.	County
Eglwys Nunydd SINC 0.55km south	158ha of eutrophic standing waters and reedbeds. Barn Owl and Cetti's Warbler have been recorded within the site.	County
NRW Priority Areas, Local BAP Habitats, Ancient Woodland, Important Hedgerows, Veteran Trees, TPOs and Conservation Areas		
Lowland Deciduous Mixed Woodland HPI – immediately off-site south	There is a 0.49ha parcel of Lowland Deciduous Mixed Woodland immediately off-site to the south, which the garden of B1 backs onto.	Local-County
Ancient Woodland (several – closest 0.10km north-east)	There is a total of 121ha of ancient semi-natural woodland, restored ancient woodland and plantation on ancient woodland within 2km of the site. Most of this is separated from the site to the east by the A48 and M4.	County
Green/Blue & Aquatic Infrastructure, Dark Sky Zones and Local Policy		
Green Infrastructure	Within the site there are hedgerows and individual trees which contribute to green infrastructure provision within the local area, especially the woodland to the south and extensive areas of ancient woodland to the east of the site.	Local
Blue & Aquatic Infrastructure	There are no waterbodies or watercourses within the site. There are some ditches and drainage features within 500m of the site, but the site does not provide any connectivity between these features.	Negligible
Dark Sky Zones	The site is not within any known Dark Sky Zones. In accordance with the standard guidance specified in the Guidance Notes for Reduction of Obtrusive Lighting (Institution of Lighting Professionals, 2020), the site likely falls under Environmental Zone E2 (Rural – Low district brightness).	Negligible

Ecological Feature	Details	Ecological Importance
Habitat Types		
Other Neutral Grassland (g3c) – Invasive non-native species (524) 	Most of the site consists of unmanaged neutral grassland. The sward has been allowed to develop with variation in height. There are no areas of bare or damaged ground, or areas of bracken. There are stands of Japanese Knotweed present throughout the grassland. The grassland is of 'good' condition. Species present include; Yorkshire Fog (dominant), Creeping Bent (abundant), False Oat-Grass (frequent), Cock's-foot, Hogweed, Red Fescue, Fleabane, Creeping Cinquefoil (occasional), Japanese Knotweed and Bird's-foot Trefoil (rare). This is not a priority habitat or listed on the local BAP.	Negligible
Other Native Hedgerow (h2a6) 	There are three hedgerows on site. H2 is situated along the southern site boundary, to the east of the garden of B1. H1 & H3 are situated along the eastern site boundary, north and south of the access track, respectively. All hedgerows are entirely comprised of native species, but all have fewer than five species per 30m length, and as such as considered 'species-poor'. All species have an average height and width >1.5m, with no significant gaps in their canopy or base. There is no sign of poor health or damage, and no Invasive Flora present within the hedgerow. There is at least 6m of undisturbed ground on the site-side of all hedgerows. H1 consists entirely of Hawthorn (dominant). H2 contains Hawthorn, Elder, Ash and Sycamore (frequent). H3 contains Ash, Sycamore and Hawthorn (frequent). Ground flora is the same as the other neutral grassland. Hedgerows, for the purpose of HPI classification (and Local BAP), are defined as any boundary line of trees or shrubs over 20 metres long and less than 5 metres wide where any gaps between the trees or shrubs are less than 20 metres wide. These must also be comprised of 80% or more of at least 1 woody UK native species. All hedgerows of this type meet the criteria to qualify as this habitat. Additionally, some may also qualify as Ecologically & Historically 'Important' under The Hedgerow Regulations 1997 (due to number of woody species, associated features, connectivity, and age).	Local-County

Ecological Feature	Details	Ecological Importance
Buildings (u1b5) – Neglected (518). 	There are three buildings on site. B1 (Tyn-y-Caeau) is a large house (pictured left). B2 is a block of flats which has been built more recently. B3 is a small barn made of bricks and wood. All these buildings have been abandoned and are in varying states of disrepair. They offer negligible biodiversity value as habitats. This is not a priority habitat or listed on the local BAP.	Negligible
Other Developed Land (u1b6) 	There is a continuous area of hardstanding on site, which comprises an access track running from the A48 (to the east of the site) to the driveway/parking outside B1 and B2. This has negligible biodiversity value as a habitat. This is not a priority habitat or listed on the local BAP.	Negligible

Ecological Feature	Details	Ecological Importance
Suburban Mosaic of Developed and Natural Surface (u1d) – Neglected (518), Invasive Non-native Species (524) 	To the south and west of B1 is the property's gardens. As the site has been left abandoned and unmanaged, the vegetation has become overgrown, taking on the characteristics of dense scrub. However, the extensive presence of hardstanding in areas (paths, patios) as well as a substrate for much of the habitat, as well as the known historic land-use means that this habitat is better classified as an urban feature. Species present include; Bramble (abundant), False Oat-Grass, Winter Heliotrope, Tree of Heaven, Broad-leaved Willowherb, Japanese Knotweed (frequent), Creeping Bent, Garlic Mustard, Common Nettle, Nipplewort, Common Ivy, Hemp Agrimony, Ragwort, Cleavers, Giant Fescue, Yorkshire Fog (occasional), Hogweed, Burdock, Wood Dock and Green Alkanet (rare). This is not a priority habitat or listed on the local BAP.	Negligible
Individual Rural Tree 	There are 60 individual trees on site, comprising Sycamore (36No.), Ash (10No.), Beech (4No.) , Silver Maple (3No.), Norway Maple (2No.), Silver Birch (1No.), (1No.) Hawthorn, Lime (1No.), Austrian Pine (1No.), London Plane (1No.) and one unknown species. Except for Silver Maple, Norway Maple, Austrian Pine and London Plane, all the trees are native to the UK. All trees are semi-mature or older, and five are dead. In general, the trees are in good physiological condition, with a lack of evidence of disease or damage. There are natural ecological niches present for a range of animals, no gaps in the canopy and trees are mostly oversailing vegetation underneath. NOTE: All information regarding individual trees has been derived from the BS5837:2012 Tree Survey undertaken on 19th January 2025 (RTAC, 2025). Individual trees have not been mapped on Drawing CRM9026001-ENZ-XX-XX-DR-Z-0001-UK Habitat Classification Map (as per UKHab methodology) but can be seen in the Tree Constraints Plan (Appendix C). This is not a priority habitat or listed on the local BAP.	Local

Ecological Feature	Details	Ecological Importance
Legally Protected & Priority Species (& Consultation Zones where applicable)		
Bats (Roosts)	Due to its dilapidated condition, B1 has numerous Potential Roost Features (PRFs), including raised roof tiles, smashed windows, broken brickwork, gaps in the internal walls exposing roof and wall cavities, and an underground cellar with hibernation roost potential. The building was assessed as 'high' suitability for roosting Bats during the 2025 PRA, including high hibernation potential (see Appendix D). B2 was assessed as 'negligible' suitability for roosting Bats, as no egress points were identified during the PRA, and B3 was assessed as 'low' suitability due to the presence of smaller PRFs that could be used opportunistically by a lower number of Bats. As such, B1 was subject to three dusk emergence surveys, and B3 subject to a single dusk emergence survey. Across the 2025 emergence surveys, three Lesser Horseshoes were recorded emerging from a broken first floor window on the southern building aspect. Additionally, a single Soprano Pipistrelle was recorded emerging from a lifted roof tile on the western building aspect. Numerous Bat droppings were identified scattered throughout the building beneath the ridge and roofing beams, including at the top of the staircase leading down to the cellar. These droppings were sent off for DNA analysis and came back as those of Lesser Horseshoe (see Appendix E). No Bats were observed emerging from B3. It is considered that B1 provides day roosts for both common and rarer species of Bat and has the potential to provide hibernation roosts for rarer species of Bat, which would classify B1 as 'county' level importance for roosting Bats, if hibernating Bats were found. The results of the 2025 emergence surveys can be seen on Drawing CRM9026001-ENZ-XX-XX-DR-Z-Bat Emergence Survey (Appendix F shows the full results). The trees on site were subject to a Ground-level Tree Assessment for their suitability to support roosting Bats. The full results of this assessment can be seen in Appendix D, but in summary T277 and T299 are determined to have PRFs suitable for individual roosting Bats, whereas the rest of the trees on site lack suitable PRFs. The data search revealed no records of Bat roosts within 2km of the site, including searches for EPS mitigation licences and reviewing the previously prepared EcIA.	County

Ecological Feature	Details	Ecological Importance
Bats (Commute and Forage)	The grassland, hedgerows, overgrown garden and individual trees on site provide a range of suitable foraging habitats for Bats. The site is free of artificial lighting and due to its abandoned nature has little in the way of noise disturbance. The site has some connectivity to suitable habitat in the surrounding area, although the presence of the A48 and M4 to the east and north of the site fragments these habitats somewhat. As per the BCT guidelines (Collins, 2023), the site is classified as having 'moderate' suitability for foraging and commuting bats, due to the presence of continuous habitat connected to the wider landscape such as lines of trees and scrub or linked back gardens. During the 2025 Bat surveys, Common Pipistrelle, Soprano Pipistrelle, Brown Long-eared, <i>Myotis</i> sp., Lesser Horseshoe and Noctule were recorded foraging within or commuting across the site. Most of the foraging activity across the site was recorded as being associated with mature individual trees, especially those along the northern site boundary. There was less foraging activity recorded within and around the buildings, hardstanding and garden areas of the site. The trees on site are the most valuable habitat for foraging Bats. Commuting Bats were generally recorded flying directly across the site at a height above the treeline (often Noctule), and it is not considered that the habitats on site are of particular importance to commuting Bats, as specific habitat features did not appear to be utilised. The Soprano Pipistrelle and Lesser Horseshoes observed emerging from B1 flew south/south-west toward the mature trees/hedgerow on the southern site boundary to begin foraging and commuting. The data search returned records for Common Pipistrelle, Soprano Pipistrelle, Brown Long-eared, Lesser Horseshoe, Greater Horseshoe, Brandt's, Daubenton's, Natterer's, Whiskered, Leisler's and Noctule. This includes records of <i>Pipistrellus</i> sp., and <i>Myotis</i> sp. within the site.	Local
Badger	The grassland and hedgerows on site provide suitable habitat for sett creation and foraging. There is optimal sett creation habitat in the form of woodland surrounding the site, although much of this is separated from the site by main roads. No excavations or significant Badger activity was noted during incidental observations. The data search returned several records of Badger, the closest of which is 0.13km east of the site (road mortality).	Local

Ecological Feature	Details	Ecological Importance
Dormouse	The hedgerows on site provide limited-suitability habitat for Dormouse, as they lack preferred plant species (Hazel, Oak, Honeysuckle, etc.). Hazel is present in the woodland immediately offsite to the south, which is suitable habitat for the species. The presence of major roads to the north and east of the site present barriers to dispersal. Dormouse are considered to have a 'scattered population' within the local area (English Nature, 2006). The data search returned no records of Dormouse within 2km of the site in the last 10 years.	Local
Otter & Water Vole	There are no suitable habitats present on site for either species. The data search returned records of both species, the closest of which was 0.65km south of the site, near Eglwys Nunydd reservoir.	Negligible
Other Protected Mammals	The site is outside of the typically accepted range of Other Protected Mammals (Beaver, Red Squirrel, Pine Marten), the habitats on site are not particularly valuable to these species, and the data search returned no records of these species within 2km of the site in the last 10 years.	Negligible
Specially Protected Birds	The rough grassland present on site is the preferred habitat of Barn Owl. During the Reptile surveys, incidental observations of Field Vole were made, confirming that there is suitable prey species on site for Barn Owl. Building B3 is suitable for Barn Owls to roost and nest, as there are open windows/doors to provide access and eaves and beams for roosting. No incidental recordings of Barn Owls or Barn Owl presence (pellets, faecal splashing, etc.) were recorded during the 2025 ecological surveys. The data search returned 35 records of Barn Owl, including one on-site from 2015.	Local
Breeding & Nesting Birds	The hedgerows, overgrown garden and individual trees present on site provide suitable habitat for breeding Birds. The data search returned records of Song Thrush, Redwing, Linnet and Spotted Flycatcher.	Local

Ecological Feature	Details	Ecological Importance
Wintering and Migratory Birds	There are no waterbodies present on site, and the site does not flood or become periodically inundated. The presence of Eglwys Nunydd reservoir 0.55km to the south of the site reduces the likelihood that Wintering and Migratory Birds would use the site regularly when there is optimal habitat in the proximity. The data search returned records of Black-necked Grebe and White-fronted Goose.	Negligible
Farmland/Ground-Nesting Birds	The grassland on site provides suitable habitat for Ground-nesting Birds. However, the suitability of this habitat is limited by its enclosed nature, with the presence of trees/woodland/hedgerow on all site boundaries, preventing the wide field of view required by Ground-nesting Bird species. In the case of Skylark specifically, government guidance on Skylark plots recommends that they are situated at least 80m from tall boundary features (AHW4: Skylark plots - GOV.UK). There are no areas of site which are situated at least 80m away from trees/woodland/hedgerow. The data search returned records of Lapwing, Skylark and Yellow Wagtail.	Negligible
Common Reptiles 	The grassland, hedgerows and overgrown garden on site all provide optimal habitat for Common Reptiles. Additionally, the presence of hardstanding improves the basking opportunities for Common Reptiles. There are several log piles scattered around the site (left), providing suitable habitat for hibernation and shelter. The presence of major roads to the north and east of the site represents a barrier to dispersal. The Tyler Grange EcIA (Tyler Grange, 2025) details historic Reptile surveys undertaken on site in May-June 2022. These surveys identified 'low' populations of Common Lizard and Slow Worm on site, with a peak count of two adults. The surveys undertaken by Enzygo in 2025 did not identify any Reptiles within the site. The site does not meet any of the criteria to be identified as a 'Key Reptile Site'. It is considered that the site supports a 'low' population of Common Lizard and Slow Worm. The results of the 2025 Reptile surveys can be seen on Drawing CRM9026001-ENZ-XX-XX-DR-Z-Reptile Survey (Appendix G shows the full results). The data search returned records of Common Lizard, Slow Worm, Grass Snake and Adder, the closest of which from 0.5km to the west.	Local

Ecological Feature	Details	Ecological Importance
Great Crested Newt (GCN)	There are no suitable aquatic habitats on site for GCN. There are four ponds within 500m of the site, all to the west. The closest of these is 150m away and is separated from the site by commercial development and roads. The rough grassland, scrub and hedgerows present on site are suitable terrestrial habitat for GCN. West Wales is considered 'unsuitable' for GCN (Amphibian & Reptile Group, 2010). The data search returned no records of GCN within 2km of the site in the last 10 years.	Negligible
Other Protected Herpetofauna	The site is outside of the typically accepted range of Other Protected Herpetofauna (Smooth Snake, Sand Lizard, Natterjack Toad, etc.). The habitats present on site are not particularly valuable for these species. The data search returned no records of Other Protected Herpetofauna within 2km of the site in the last 10 years.	Negligible
Protected Fish/Marine Species	There are no suitable habitats on site for Protected Fish/Marine Species, and the data search returned no records within 2km of the site in the last 10 years.	Negligible
White-clawed Crayfish	There are no suitable habitats on site for White-clawed Crayfish, and the data search returned no records within 2km of the site in the last 10 years.	Negligible
Protected Invertebrates	The grassland and hedgerows, overgrown garden and individual trees on site provide suitable habitat for Protected Invertebrates. The presence of log piles provides additional opportunities for these species. Despite this, it is not considered that the site is of particular importance for Protected Invertebrates as the habitats present are common and widespread. The data search returned no records of Protected Invertebrates within 2km of the site in the last 10 years.	Negligible
Protected Flora	The habitats on site provide general suitability for Protected Flora. No Protected Flora have been recorded during the surveys. The data search returned records of Bluebell, the closest of which being 0.26km from site.	Negligible

Ecological Feature	Details	Ecological Importance
Invasive Flora	The habitats on site provide general suitability for Invasive Flora. Japanese Knotweed has been recorded on site during the 2025 ecological surveys. The data search returned records of Buddleja, Rhododendron and Himalayan Balsam.	Local
Invasive Fauna	The habitats on site provide a general suitability for Invasive Fauna, although no particularly valuable features are present. No Invasive Fauna have been recorded during the surveys. The data search returned a record of America Mink.	Negligible
Priority Species	The grassland, hedgerows, overgrown garden and individual trees on site all provide opportunities for a range of Priority Species. The data search returned records of Common Toad, Common Frog, Smooth Newt, Brown Hare, and Hedgehog.	Local

4 Assessment and Mitigation

- 4.1.1 Assessment of impacts and the associated ecological effect to identified ecological features are presented below. To clarify, ecological features have been screened out where these are of negligible importance, no likely significant impacts have been identified or where impact is unlikely to occur. Specifically, Kenfig/Cynffig Special Area of Conservation SAC, Glaswell Tiroedd Cefn Cribwr/Cefn Cribwr Grasslands SAC, Eglwys Nunydd Reservoir SSSI, Margam Moors SSSI, NPT Watercourses SINC, NPT Ancient Semi-natural Woodland SINC, Junction 38 Wetland Complex SINC, Margam Country Park SINC, Eglwys Nunydd SINC, and all areas of Ancient Woodland are not ecologically or hydrologically connected to the site, and the scope and scale of the proposed development mean that significant adverse effects are not considered likely. Dormouse have also been scoped out as there will be no losses to hedgerow or woodland because of the proposed development.

Table 6 – Assessment of Effects and Mitigation Measures

Ecological Feature	Impact	Avoidance/Mitigation	Compensation	Significance of Residual Effect
Green Infrastructure, Hedgerows HPI, Individual Rural Trees, off-site Lowland Deciduous Mixed Woodland HPI	Loss of Green Infrastructure and Individual Trees Major adverse, permanent, irreversible impact Degradation of Hedgerows, Woodland and Individual Trees during the construction phase Minor adverse, temporary, irreversible impact	Of the 56 individual trees on site, the retention of 49 has been incorporated into the development proposals. Seven trees will be lost because of the proposed development, only one of which is part of a boundary feature or hedgerow. No hedgerow will be lost because of the proposed development. Retained hedgerows and individual trees (as well as the woodland immediately offsite) will be protected throughout the construction phase in line with British Standard BS:5837:2012 Trees in Relation to Design, Demolition and Construction.	15 new trees and 150m of new native hedgerow will be planted during the construction phase	None anticipated
Bats (Roosting)	Loss of day roosts and potentially hibernation roosts of common and rarer species of Bat Significant adverse, permanent irreversible impact	A Natural Resources Wales (NRW) mitigation licence will be required to undertake the required works to B1. This application will need to be supported by further hibernation surveys of B1, which will be undertaken during late 2025/early 2026. Bat mitigation will be fully detailed within the licence application but will be prepared in accordance with current guidance (Reason and Wray, 2025).	TBC	TBC

Ecological Feature	Impact	Avoidance/Mitigation	Compensation	Significance of Residual Effect
	Risk of killing/harming/disturbing individual Bats during the construction phase Major adverse, temporary, irreversible impact	Tree T299 will be removed because of the proposed development. This tree will be removed under the supervision of an Ecological Clerk of Works outside of the Bat roosting season (May to September, inclusive), to reduce the risk of harming or disturbing any individual Bats present.		
Bats (Foraging & Commuting)	Loss of foraging and commuting habitat, visual and noise disturbance of foraging and commuting Bats Minor adverse, permanent, irreversible impact	Due to the size of the site, Bat activity surveys in addition to emergence surveys were not considered proportionate or justifiable, as the surveyor positions used to undertake the emergence surveys provided suitable coverage of the site and allowed for a general understand of the overall Bat activity across the site. Losses to valuable foraging habitat will be minimised, with seven individual trees and no hedgerow being lost. Areas of grassland to be lost are not considered to be particularly valuable to foraging Bats. The construction phase will follow best practices to reduce the likelihood of disturbing foraging & commuting Bats including avoiding or reducing night-working and using security lighting on a timer/sensor. Artificial lighting proposed as part of the development will be designed and implemented in line with best practice guidance (ILP & BCT, 2023).	15 new trees and 150m of new hedgerow will replace losses to foraging habitat.	None anticipated
Badger, Priority Species	Risk of harming Badger or Priority Species during the construction phase	The construction phase will follow best practices to reduce the likelihood of harming Badger and Priority Species, including an avoidance or reduction in night-working, not leaving any	-	None anticipated

Ecological Feature	Impact	Avoidance/Mitigation	Compensation	Significance of Residual Effect
	Major adverse, temporary, irreversible impact	uncovered excavations overnight without means of escape and the responsible storage of hazardous materials.		
Breeding & Nesting Birds	Risk of harming Birds, their nests or their eggs during the construction phase Major adverse, temporary, irreversible impact	Clearance of suitable habitat (overgrown garden and individual trees) should be undertaken outside of the nesting season (March to August, inclusive). If this is not possible, then clearance will be supervised by a suitably-qualified ECoW, who will search habitats for breeding Birds prior to clearance.	-	None anticipated
Specially Protected Birds	Risk of harming Birds, their nests or their eggs during the construction phase Major adverse, temporary, irreversible impact	Full Barn Owl survey not considered necessary as the Bat emergence surveys adequately covered B3 during dusk – it is considered that any Barn Owl nesting activity would have been detected during these surveys. B3 to be demolished under supervision of an ECoW, outside of the main Barn Owl nesting season (March to August, inclusive).	A Barn Owl box will be erected on site in a suitable location to compensate for the loss of a potential roost.	None anticipated
Common Reptiles	Risk of killing/injuring Common Reptiles using the site during the construction phase Major adverse, temporary, irreversible impact	Despite the 2025 survey results, considering historic survey results and the overall suitability of the site for Common Reptiles, it is recommended that minor mitigation measures are implemented. The construction phase will be undertaken following Reasonable Avoidance Measures which will be outlined in a Precautionary Working Method Statement. This will include a toolbox talk, a two-stage cut of grassland, and the proper storage of rubble and materials so as not to encourage Common Reptiles within the construction area. There is enough suitable	-	None anticipated

Ecological Feature	Impact	Avoidance/Mitigation	Compensation	Significance of Residual Effect
		habitat in the surrounding area that this process will naturally translocate any Common Reptiles present out of the site. The log piles currently present on site will be retained throughout the proposed development.		
Invasive Flora	Risk of spreading Invasive Flora species during the construction phase Major adverse, temporary, reversible impact	A specialist invasive weed contractor will be commissioned to survey and responsibly remove the Invasive Flora species present on site. Construction phase works will take measures to reduce the likelihood of spreading Invasive Flora.	-	None anticipated

5 Enhancement and Monitoring

- 5.1.1 Opportunities for biodiversity enhancement (above and beyond those required to mitigate for any identified impacts) have been determined through consideration of: Ecological Features identified on site and within the zone of influence; Historical records of protected species/habitats present within the locality; National and Local planning policy including National and Local Biodiversity habitats/species; Local Development Plans including consideration of Green/Blue Infrastructure Resource; Consultation with third parties/stakeholders where applicable; and Other influencing factors such as underlying Geology/Hydrology, intended operational activities, and existing disturbance activities within the locality. This makes specific reference to good practice principles for development (CIEEM, IEMA, CIRA, 2019).
- 5.1.2 Additional biodiversity enhancements will include the following. The specific location and details of the proposals can be detailed within a Biodiversity Enhancement Strategy (BES) in accordance with BS42020:2013.
- 5.1.3 It is still to be confirmed that the application will achieve Net Benefit for Biodiversity as outlined in Planning Policy Wales (2021).

Table 7 – Additional Enhancements

Ecological Feature	Additional Enhancement
Birds, Bats, Common Reptiles, Priority Species	Landscaping proposals will increase the overall number of native trees present on site, as well as the length of hedgerow, which will provide additional opportunities for a range of species.
Common Reptiles, Priority Species	Felled trees shall be cut down and used to create log piles to provide additional opportunities for a range of species including Common Reptiles and Priority Species.
Invertebrates, Bats, Birds	The new buildings will feature living walls and green roofs, which will feature a range of flowering plant species, providing opportunities for Invertebrates, and in turn Bats and Birds.

- 5.1.1 In line with PPW (2021), section 12, a separate NBB DECCA statement will be provided alongside this document.
- 5.1.2 No post-determination monitoring is currently required, although this may change if requested by the County Ecologist. A Construction Environment Management Plan (CEMP) which includes consideration of biodiversity should be produced prior to the commencement of construction activities, including site clearance works. A Landscape and Ecological Management Plan (LEMP) should also be produced prior to operation of the site designing a programme of works at the site outlining the management of existing/retained landscape features.

6 Conclusion

- 6.1.1 Further Phase 2 surveys are required before it can be concluded that there will be no residual ecological impact from the development which would prevent determination of a planning application or development of this site. The results of these surveys and the required mitigation will be included within the NRW bat mitigation licence required for works on B1. Suitable mitigation measures will be incorporated into the proposed development as per the findings of Phase 2 surveys, and a demonstrable 'no biodiversity net loss' in accordance with PPW and local planning policy.
- 6.1.2 Additionally, it is yet to be determined how the site re-development allows the opportunity to provide local enhancements to demonstrate a 'Net Benefit for Biodiversity'. The specifics of this can be confirmed following further Phase 2 surveys.

7 References

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**Drawing CRM9026001-ENZ-XX-XX-DR-Z-0001 – UK Habitat
Classification Map**



- Key:**
- Redline Boundary
 - Other native hedgerow (h2a6)
 - Other neutral grassland (g3c)
 - Buildings (u1b5)
 - Other developed land (u1b6)
 - Suburban mosaic of developed and natural surface (u1d)
 - Lowland mixed deciduous woodland (w1f)

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P01	09.10.25	Preliminary Issue	LB	CK	CK
Rev	Date	Description	DRA	CHK	APP

Project
Tyn-y-Caeau

Client
Western Bio-Energy Ltd

Drawing Title
UK Habitat Classification Map

Scale 1:1,250 @ A3	Date 09/10/2025	Status Preliminary
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DWG No. CRM9026001-ENZ-XX-XX-DR-Z-0001	Revision P01
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Bristol
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Manchester
0161 413 6444

Sheffield
0114 321 5151

Cardiff
02920 023 700

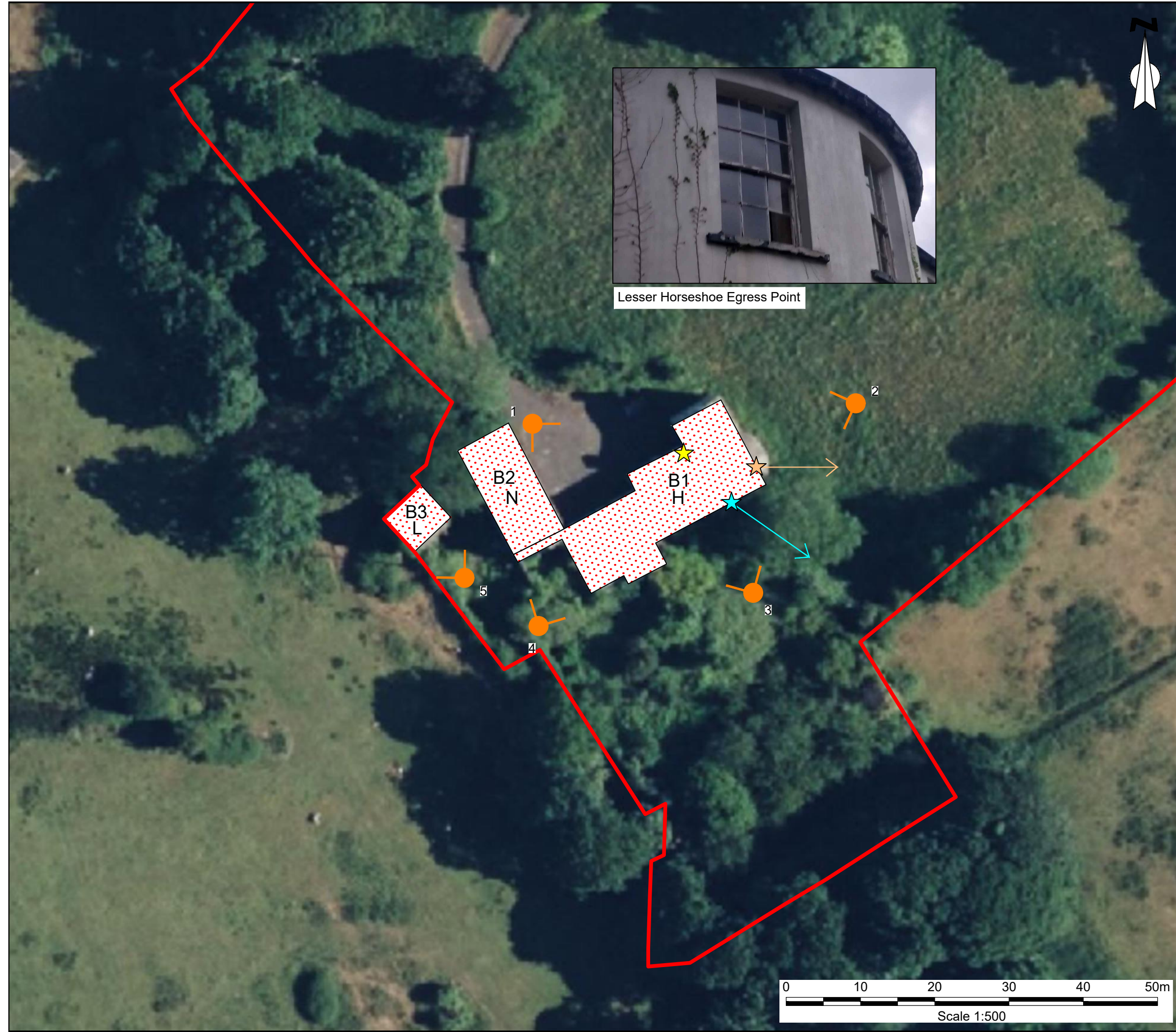
Cambridge
01799 542 473

Belfast
07377673948

enzygo

@enzygo
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hello@enzygo.com

Drawing CRM9026001-ENZ-XX-XX-DR-Z-0002 – Bat Emergence Survey



Lesser Horseshoe Egress Point



KEY:

- Site Boundary
- 1 x Soprano Pipistrelle
- 3 x Lesser Horseshoe
- Soprano Pipistrelle emergence flight direction
- Lesser Horseshoe emergence flight direction
- Location of Lesser Horseshoe droppings
- Buildings
- 1 Surveyor Location and Field of View

P02	13.10.25	Bat Information Updated	SD	CK	CK
P01	09.10.25	Issued for comment / approval	LB	CK	CK
Rev	Date	Description	DRA	CHK	APP

Project
Tyn-y-Caeau

Client
Western Bio-Energy Ltd

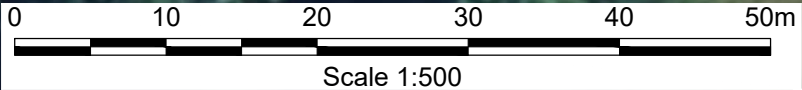
Drawing Title
Bat Emergence Survey

Scale 1:500 @ A3	Date 09.10.25	Status Preliminary
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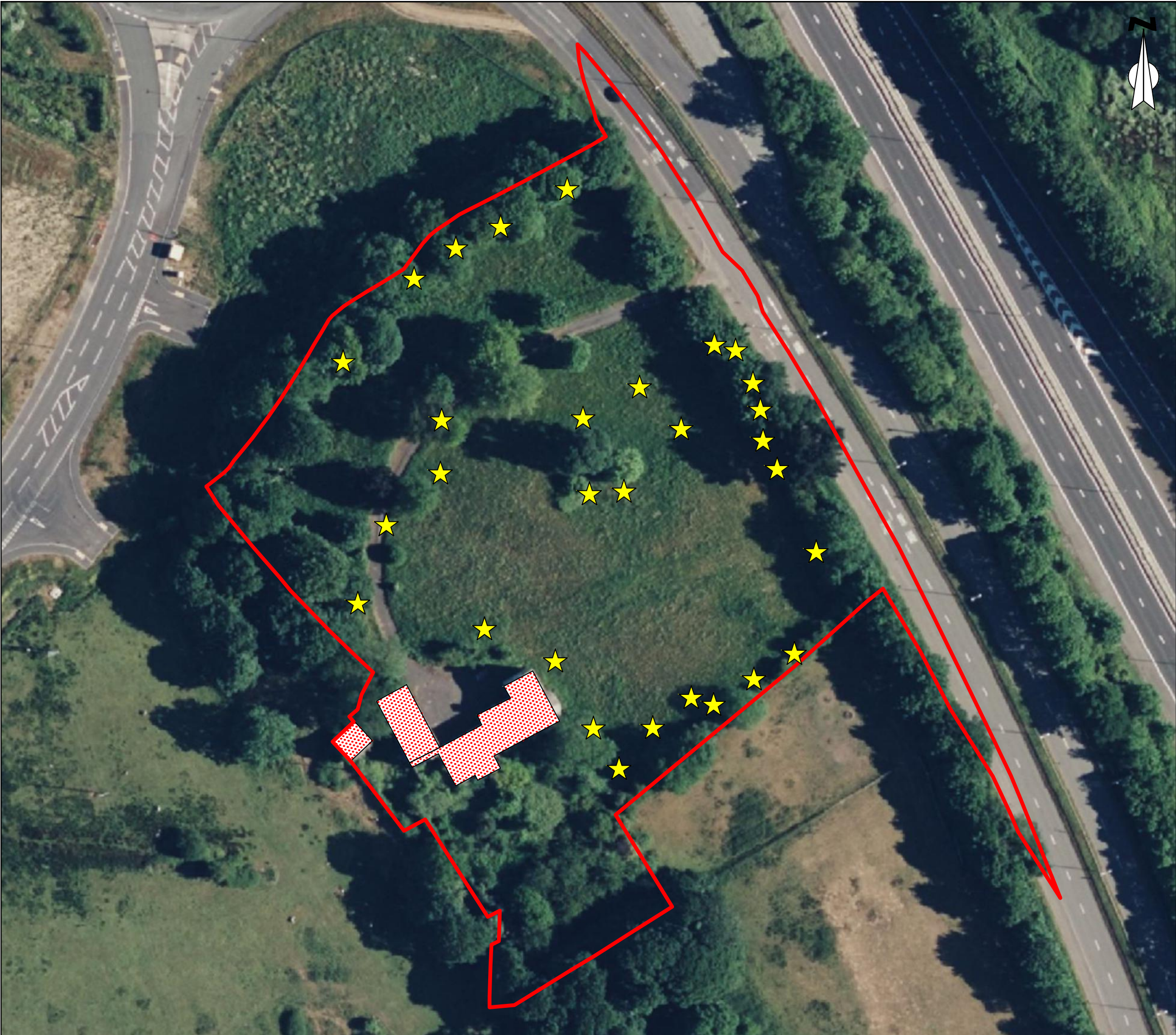
DWG No. CRM9026001-ENZ-XX-XX-DR-Z-0002	Revision P02
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Bristol
01454 269 237
Manchester
0161 413 6444
Sheffield
0114 321 5151

Cardiff
02920 023 700
Cambridge
01799 542 473
Belfast
07377673948



Drawing CRM9026001-ENZ-XX-XX-DR-Z-0003 – Reptile Survey



KEY:

-  Site Boundary
-  Buildings
-  Reptile Refugia (No reptiles found during survey)

P01	13/10/25	Issued for comment / approval	SD	CK	CK
Rev	Date	Description	DRA	CHK	APP

Project
Tyn-y-Caeau

Client
Western Bio-Energy Ltd

Drawing Title
Reptile Survey

Scale	Date	Status
NTS @ A3	13/10/25	Preliminary

DWG No.	Revision
CRM9026001-ENZ-XX-XX-DR-Z-0003	P02

Bristol
01454 269 237
Manchester
0161 413 6444
Sheffield
0114 321 5151

Cardiff
02920 023 700
Cambridge
01799 542 473
Belfast
07377673948



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Appendix A – Illustrative Framework Masterplan



KEY

Red line boundary

Existing trees

Proposed trees

Root Protection Area

Trees to be removed

PM1 Enhanced grassland

PM2 Bio-retention mix

PM3 Wildflower

PM4 Scrub / species rich shrubs

PM5 Existing native hedgerow enhancements

PM6 New native hedgerow

PM7 Woodland edge understory

PM8 Green roof

PM9 Living walls

PM10 species rich grass

Buildings

Substation

Tarmac

Permeable paving

Resin bound surface

Existing stone wall improvements

Existing stone wall

Existing stairs

Kerb

Estate fence

Gate

Perimeter fence

Existing fence

NOTES:

NOT FOR SITE PURPOSES: This drawing is a general arrangement plan only and is not intended for site purposes.

SCALE: Do not scale from this drawing.

SETTING OUT: All setting out, levels, dimensions to be agreed on site. Do not use the information on this drawing without checking all dimensions on site. Any discrepancies between drawings, specifications and site works are to be reported to The Urbanists. Order of construction and setting out is to be agreed on site.

CHECK: This drawing must be the latest revision, read in conjunction with all other drawings, details, specifications and schedules. All dimensions are in millimetres unless otherwise stated. Where and contradiction or uncertainty arises between the drawings and/or the schedule of works, it is the contractor's responsibility to seek verification from The Urbanists before proceeding. No claims will be met by The Urbanists, where the contractor continues work in absence of such confirmation.

No.	Date	By	Revision Notes
A	11/03/2025	SJ	Planning Application

PROJECT STATUS:

S2 (SUITABLE FOR INFORMATION)

theurbanists

Client: WBE

Project: LAND AT TYN-Y-CAEALL, MARGAM

Title: Illustrative Landscape Masterplan

Project ID	Organiser	Block	Level	Type	Role	Dwg	Rev.	Status
Z335	URB	XX	XX	DR	LA	100	A	DRAFT

Drawn: LR Date: 23/07/2024 Checked: MF Scale: 1:500

The Urbanists Cardiff - The Creative Quarter - 84 Morgan Arcade - CF10 1AF
The Urbanists Bristol - Generator Building - Finsbury Reach - BS1 6BX
T: 029 2021 6193 E: info@theurbanists.net W: www.theurbanists.net

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Appendix B – Legislation and National Planning Policy

Wildlife legislation and policy relevant (or potentially relevant pending further survey) to the proposed works, based on the findings of the desk study and field survey are set out below. This legal information is a summary only, and the original legal documents should be consulted for definitive information.

Legislation Protection Afforded to Sites/Habitats that could Potentially be Affected by the Proposed Works

Designated Site/Habitat	Legal Status
SSSI	SSSIs are the national suite of sites providing statutory protection for the best examples of the UK's flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs have been re-notified under the Wildlife and Countryside Act 1981 (as amended). Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000.
SAC	SACs are strictly protected areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed in Annexes I and II of the EC Habitats Directive. The Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2012 (as amended) are the legal instrument for implementing the Habitats Directive in the UK.
Hedgerows	Hedgerows that meet certain criteria are protected by The Hedgerows Regulations 1997, under which it is an offence to remove or destroy such hedgerows without permission from the Local Planning Authority.

Legislation Protection Afforded to Species that could Potentially be Affected by the Proposed Works

Species	Legal Status
European Protected	
Bats	These animal species and their breeding sites or resting places are protected under Regulation 41 of the Conservation of Habitats and Species (Amendment) Regulations 2017, which makes it illegal to: • Deliberately capture, injure or kill any such animal or to deliberately take or destroy their eggs; • Deliberately disturb such an animal; • Damage or destroy a breeding site or resting place of such an animal. European Protected Species (EPS) licences can be granted by Natural Resources Wales in respect of development to permit activities that would otherwise be unlawful under the Conservation Regulations, providing that the following 3 tests (set out in the EC Habitats Directive) are passed: • The development is for reasons of overriding public interest; • There is no satisfactory alternative; and • The favourable conservation status of the species concerned will be maintained and/or enhanced. Under Regulation 9(5) of the Conservation Regulations, Planning Authorities have a legal duty to 'have regard to the requirements of the EC Habitats Directive in the exercise of their functions'. This means that they must

Species	Legal Status
	consider the above 3 tests when determining whether Planning Permission should be granted for developments likely to cause an offence under the Conservation Regulations. As a consequence, Planning Applications for such developments must demonstrate that the 3 tests will be passed.
Nationally Protected	
Bats	These animals receive full protection under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal (subject to exceptions) to: • Intentionally kill, injure or take any such animal; • Intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any such animal; and • Intentionally or recklessly disturb such animals while they occupy a place used for shelter or protection.
Schedule 1 Birds, Breeding Birds	All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal (subject to exceptions) to: • Intentionally kill, injure, or take any wild bird; • Take, damage, or destroy the nest (whilst being built or in use) or eggs of any wild bird.
Badger	The Protection of Badgers Act 1992 makes it illegal to wilfully kill or injure a Badger or attempt to do so and also make it illegal to intentionally or recklessly interfere with a Badger sett. This includes damaging or destroying a sett, obstructing access to a sett and disturbing a Badger while it is occupying a sett. Licences can be granted to permit sett closure and/or disturbance between July and November inclusive.
Common Reptiles	These animals receive limited protection under The Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal to intentionally kill or injure any such animal.
Wild Mammals	The Wild Mammals (Protection) Act 1996 makes it illegal to mutilate, kick, beat, nail, or otherwise impale, stab, burn, stone, drown, crush, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.
Invasive Species	
Sch9 Flora	The Wildlife and Countryside Act 1981 (as amended) contains measures for preventing the establishment of non-native species which may be detrimental to native wildlife, prohibiting the release of animals and planting of plants listed in Schedule 9 of the Act.

Section 40 of the Natural Environment and Rural Communities Act 2006 (the NERC Act) places a legal duty on public bodies, including planning authorities, to 'have regard' to the conservation of biodiversity when carrying out their normal functions, which includes consideration of planning applications.

In compliance with Section 41 of the NERC Act, the Secretary of State has published a list of species and habitats considered to be of principal importance for conserving biodiversity in England under the UK Post-2010 Biodiversity Framework. This is known as the list of Habitats and Species of Principal Importance (HPI/SPI), of which there are fifty-six habitats and 943 species. The HPI/SPI list is used to guide planning authorities in implementing their duty under the NERC Act.

Planning Policy Wales

Planning Policy Wales (PPW) was originally published by the Welsh Government in 2002 and sets the context for planning in Wales, under which Local Planning Authorities prepare their statutory Development Plans. It is the principal and authoritative source of national planning policy.

The latest edition of the PPW was Edition 9 published in 2016. This is supplemented by 21 topic based Technical Advice Notes (TANs). Procedural guidance is given in Welsh Office/National Assembly for Wales/Welsh Government circulars. PPWs, the TANs and the circulars may be material to decisions on individual planning applications. They will be considered by the Welsh Ministers and Planning Inspectors in the determination of called-in planning applications and appeals.

Chapter 5 of the PPW (Conserving and Improving Natural Heritage and the Coast) states that the Welsh Government's objectives in relation to the environment are to:

- promote the conservation of landscape and biodiversity, in particular the conservation of native wildlife and habitats;
- ensure that action in Wales contributes to meeting international responsibilities and obligations for the natural environment;
- ensure that statutorily designated sites are properly protected and managed;
- safeguard protected species, and to
- promote the functions and benefits of soils, and in particular their function as a carbon store.

The PPW states that *“the planning system has an important part to play in meeting biodiversity objectives by promoting approaches to development which create new opportunities to enhance biodiversity, prevent biodiversity losses, or compensate for losses where damage is unavoidable. Local planning authorities must address biodiversity issues, insofar as they relate to land use planning, in both development plans and development management decisions. Local planning authorities should consider how they might accommodate a response to climate change as part of their overall approach towards meeting biodiversity objectives. Ways in which the adaptation needs of biodiversity could be considered include identifying the scope for minimising or reversing the fragmentation of habitats and improving habitat connectivity through the promotion of wildlife corridors. Local planning authorities should ensure that development minimises impact within areas identified as important for the ability of species to adapt and/or to move to more suitable habitats.”*

Appendix C – Tree Constraints Plan

FELLED TREES REMOVED
U CATEGORY TREES REMOVED

RTAC

6 Courtyard Flats, Stable Yard, Stackpole, SA71 5DE
07823332279 info@rtactrees.co.uk

Tyn-y-caeau Existing Site Layout
Tree Constraints Plan

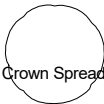
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DATE :
19/01/2025



MAP FILENAME :
[Filename]

Map data shown may contain Ordnance Survey® products supplied by
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Crown Spread



Root Protection Area



Category 'A'



Category 'B'



Category 'C'



Category 'U'



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Appendix D – Preliminary Roost Assessment & Ground-Level Tree Assessment

Preliminary Roost Assessment

Building	Description	Assessment
B1 (Tyn-y-Caeau)  Galaxy A13 13 May 2025 09:35 Galaxy A13 13 May 2025 09:40	B1 is a large house, with approximately 12 rooms across three floors (including a basement/cellar floor). The house has been abandoned for an unknown amount of time, which has led to the building being in a considerable state of disrepair. The identified egress points are primarily from missing panes of glass and damaged frames on ground and first floor windows on the southern aspect of B1 (see left, 3rd and 4th photographs in column). Once inside, the house essentially functions as one continuous roost. The damage to the inside of B1 is such that a Bat could move freely between all rooms, the internal wall and ceiling cavities and the cellar through gaps in the floors, walls and ceiling (see left). There are small gaps in brickwork for crevice-dwelling species to use as well as larger dark cavities with features that would support free-hanging species. There are three chimneys which have not been blocked. B1 is large enough that large areas will be insulated from noise and light disturbance and support a stable temperature. Of particular interest is the cellar (see left, 10th and 11th photographs in column), which is typical of a classic hibernation site. The cellar is pitch-black when artificial lighting is not used and is insulated from temperature variation and noise/vibration disturbance due to it being underground and isolated from Human activity in the surrounding area. Droppings were found at the top of the staircase which leads down to the cellar (see left, 12th photograph in column). These droppings were analysed as being from Lesser Horseshoe. As per the BCT guidelines, B1 is classified as having 'high' suitability for roosting Bats.	High (suitable for a classic cool/stable hibernation site)

Building	Description	Assessment
 Galaxy A13 13 May 2025 09:23		

Building	Description	Assessment
		

Building	Description	Assessment
		

Building	Description	Assessment
 Galaxy A13 13 May 2025 09:13  Galaxy A13 13 May 2025 09:15		

Building	Description	Assessment
 Galaxy A13 13 May 2025 09:15 		

Building	Description	Assessment
B2 (Annexe)  	B2 consists of a block of flats/apartments, which has been built as an annexe to B1. There is no direct connectivity between B1 and B2. It is clear that B2 has been built more recently than B1, as the internal condition of the building is still relatively good – despite also being abandoned. No PRFs were recorded within B2. The walls, floors and ceiling/roof are still intact, and there are no obvious cracks/crevices for Bats to roost within. Furthermore, there were no egress points identified which would allow potentially roosting Bats to travel from outside to inside the building. There are no obvious features within or on B2 likely to be used by roosting Bats, and so B2 is classified as having ‘negligible’ suitability for roosting Bats, as per the BCT guidelines (Collins, 2023).	Negligible

Building	Description	Assessment
B3 (Barn)  	B3 is a small barn made of bricks, wood and tiles. It is situated to the west of B1, with no connectivity between either B1 or B2. Internally, there is a lack of a roof void which reduces the opportunities for Bats to roost, but there is brickwork which has gaps/damage that could allow a small number of individual Bats to roost opportunistically. The door is missing, meaning that B3 likely has variations in light-levels and temperature which make it unsuitable for larger numbers of Bats to roost within on a regular basis. In line with the BCT guidance, B3 has been classified as 'low' suitability for roosting Bats.	Low

Ground-level Tree Assessment

Tree	Description	Assessment
T277 	Torn out section of trunk on the southern aspect at approximately 2m height. Single entrance with some debris. This PRF is considered suitable for an individual crevice- or tree-dwelling Bat to roost within.	PRF-I
T299 	Knot hole located on the western trunk aspect at approximately 3.5m height. A single entrance with some debris. This PRF is considered suitable for an individual crevice- or tree-dwelling Bat to roost within.	PRF-I

Appendix E – SureScreen Bat Dropping Report

Folio No: 3609-2025
Purchase Order: PO10773
Contact: Enzygo Ltd
Issue Date: 23.07.2025
Received Date: 03.07.2025

Biological Report

Technical Report



SureScreen Scientifics

Folio No: 3609-2025
Purchase Order: PO10773
Contact: Enzygo Ltd
Issue Date: 23.07.2025
Received Date: 03.07.2025

Biological Sample Analysis

Summary

Most biological materials (tissue, feces, hair, blood, etc.) contain small amounts of DNA from the organism of which it originated. Using molecular methods such as PCR (polymerase chain reaction) and DNA sequencing, SureScreen Scientifics are able to analyze an unknown sample to determine which species the sample originates from our methods are optimized for the detection of species including bats (over 92% of bat species worldwide can be identified including all 18 UK bat species), mammals; bees, wasps & hornets; birds; fish; plants (from roots, leaves, stem and even dried wood) and many more species.

Results

Lab ID	Site Name	OS Reference	Sample Type	Species Name	Match(%)
B5046	Tyn-y-caean	SS792568637 8	Bat Dropping	Lesser horseshoe bat (Rhinolophus hipposideros)	89.02
Genetic Sequence ACTGACTGGNTNCCNTGATAATCGGTNCNCCGACATAGCANTCCCACGTCTGAACAATGTAAGCTTCNNACTCCT ACCCCCCTGTTTCCTACTTCTATTGANCTCATCTATGANTGAATCTGGTGCTGGAACCGGCTGAACNGNTTACCCC CCTTTAGCGGGAGANTAGC					

Matters affecting result: none
Reported by: Jennifer Higginbottom

Approved by: Consuela Sopronyi

Methodology

Once samples have arrived in the laboratory, the DNA is isolated using a commercial DNA extraction kit. Using PCR, DNA (if present within the sample) is amplified using universal molecular markers designed to amplify a short fragment of the DNA of the target species group (i.e. mammal, fish, arthropod, reptile, plant etc.). If amplification is successful, the resulting DNA sequence is revealed using a process known as Sanger Sequencing in order to obtain the genetic sequence of the mitochondrial gene within the sample. The sequence results are aligned against a library of known reference sequences using bioinformatics software, which enables us to determine which species the DNA sequence from the sample matches with, informing the species identity and sequence similarity (match %).

If the initial analysis is unsuccessful, the entire process is repeated up to two additional times with a fresh reserve sample (if available) in order to obtain a species identification. If no DNA is detected after three attempts, then we can be confident that any further analysis of the sample will likely also fail to result in species identification.

Interpretation of Results

- Sample Type:** The sample you send to us can come from a variety of sources. Fecal, dropping, urine, hair, blood, carcass (skin, flesh, bone), gamete, plant matter or unknown biological material all contain DNA that we can test for in order to identify the species of origin.
- Genetic Sequence:** The unique DNA sequence obtained from the sample.
- Match (%):** How closely matched the DNA sequence from your sample is to the sequences within our reference database. This can be interpreted as a score of result accuracy, with the maximum score of 100% indicating an exact match of the sample to the indicated species' reference sequence. Lower scores (80-99%) indicate some variation between the sample and reference sequence, likely due to natural variation between individual genetic sequences and/or systematic variations generated through the sequencing process. Scores below 80% similarity should be interpreted with care and can indicate part degraded or part contaminated samples.
- Inconclusive Result:**
- Degraded sample:**
DNA is degraded and we are unable to determine species identification due to degradation of sample DNA. This can happen either before sample collection (old samples, exposure to UV etc.) or after sample collection if stored for long periods before analysis or not handled correctly.
- Inhibited/contaminated sample:**
We are unable to determine species identity due to contamination or the suspected presence of large quantities of PCR inhibitors. Contamination sources can originate from other species which could have come into contact with the samples, or human contamination during sample collection.
- Alternative Result:** Sometimes, for targets such as bat dropping analysis, other mammalian species such as rodents are detected. We find this to be a common occurrence as some bat droppings can be similar in appearance to rodent droppings. Although sometimes unexpected, repeat analyses in these cases would likely return the same results.



Appendix F – Bat Emergence Survey Results

Date	Weather	Position	Emergening Species	Incidental Sightings	Passes	Time From	Time To	Details
03/06/2025	11°C, light wind, 40% cloud, dry	1	No Emergences					
			-	Common Pipistrelle	-	21:30	23:00	Persistent foraging for survey
			-	Soprano Pipistrelle	-	21:42	23:00	Persistent foraging for survey
			-	Noctule	1	22:33	22:33	Heard Not Seen (HNS)
			-	Lesser Horseshoe	1	22:42	22:42	HNS
		2	1x Emergence					
			-	Soprano Pipistrelle	1	21:40	21:40	Foraging around B1
			Soprano Pipistrelle	-	1	21:55	21:55	From under roof tile on SE aspect of B1
			-	Common Pipistrelle	2	22:07	22:07	Foraging around B1
			-	Brown Long-eared	1	22:07	22:07	Foraging around B1
		3	-	Noctule	2	22:39	22:39	HNS
			1x Emergence - same as above					
			Soprano Pipistrelle	-	1	21:55	21:55	From under roof tile on SE aspect of B1
		4	-	Common Pipistrelle	2	22:07	22:07	Foraging around B1
			No Emergences					
			-	Common Pipistrelle	3	21:30	22:00	High levels of foraging around B1 and trees to the south
			-	Soprano Pipistrelle	1	21:30	22:00	
			-	Myotis sp.	1	21:30	22:00	
			-	Lesser Horseshoe	1	22:00	22:01	HNS
			-	Common Pipistrelle	1	22:00	22:02	Foraging around B3
		5	-	Noctule	1	22:38	22:38	HNS
			No Emergences					
			-	Common Pipistrelle	1	21:30	22:00	High levels of foraging around B1 and trees to the south
			-	Soprano Pipistrelle	2	21:30	22:00	
			-	Noctule	1	22:38	22:38	HNS
			-	Common Pipistrelle	2	22:39	22:39	HNS
25/06/2025	16°C, light wind, 100% cloud, light rain	1	No Emergences					
			-	Soprano Pipistrelle	1	21:46	21:46	HNS
			-	Common Pipistrelle	3	21:50	22:00	Lots of foraging
			-	Noctule	1	22:43	22:43	HNS
		2	No Emergences					
			-	Common Pipistrelle	10+	21:52	22:00	Foraging around gardens
			-	Soprano Pipistrelle	6	21:55	22:00	Foraging around gardens
			-	Noctule	1	22:15	22:15	HNS
			-	Myotis sp.	1	22:36	22:36	HNS
		3	No Emergences					
			-	Common Pipistrelle	5	21:40	22:00	Foraging activity
			-	Soprano Pipistrelle	2	21:52	22:00	Foraging activity
			-	Noctule	1	22:36	22:36	HNS
		4	No Emergences					
			-	Common Pipistrelle	10+	21:46	22:07	Lots of foraging
			-	Lesser Horseshoe	1	21:56	21:56	HNS
			-	Soprano Pipistrelle	10+	22:52	22:10	Lots of foraging
19/08/2025	18°C, no wind, 100% clouds, dry	1	No Emergences					
			-	Noctule	10+	20:25	20:45	Lots of foraging
			-	Common Pipistrelle	1	20:45	20:45	HNS
			-	Soprano Pipistrelle	1	21:02	21:02	HNS
		2	3x Emergences					
			Lesser Horseshoe	-	3	20:50	20:54	Emerged from missing pane in 1st floor western aspect window of B1
			-	Noctule	10+	20:28	20:45	Foraging in beginning of survey
			-	Lesser Horseshoe	4	20:56	20:58	Feeding around windows once emerged
			-	Common Pipistrelle	3	21:10	21:16	Foraging
		3	No Emergences					
			-	Noctule	10+	20:25	20:45	High foraging in trees in SW at start
			-	Common Pipistrelle	1	21:15	21:15	HNS
			-	Soprano Pipistrelle	1	21:48	21:48	HNS
		4	No Emergences					
			-	Noctule	10+	20:23	20:40	Foraging
			-	Common Pipistrelle	1	21:00	21:00	HNS

Appendix G – Reptile Survey Results

Site area (Ha): 2.71 No. Refugia used: 30 Description of Refugia: 30x 0.5²
Suitable habitat (Ha): 2.71 No. Refugia per Ha: 11.0701107 Time to bed down: 20 Days

Survey	Date	Common Lizard				Slow-worm				Grass Snake				Adder				Total	Other
		Male	Female	Juvenile	Adult Total	Male	Female	Juvenile	Adult Total	Male	Female	Juvenile	Adult Total	Male	Female	Juvenile	Adult Total		
1	02/06/2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
2	04/06/2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
3	06/09/2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
4	16/09/2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
5	23/09/2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
6	24/09/2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
7	30/09/2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-
Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-

Maximum Count	0		Maximum Count	0		Maximum Count	0		Maximum Count	0
Population size	0.00		Population size	0.00		Population size	0.00		Population size	0.00
Population score	0.00		Population score	0.00		Population score	0.00		Population score	0.00



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