



Preliminary Ecological Appraisal of Land at Brynhyfryd, Chwilog, on Behalf of Williams Homes Ltd.

Date	Author	Project Number	Approved by	Version	Comments
08/07/2025	Tim Yardley	4994	Anne Butler	1	

Report Reference: EE.4994.25.TY

Author contact information: tim@enfysecolgy.co.uk

This report has been prepared by Enfys Ecology Ltd with all reasonable skill, care and diligence, within the terms of the Contract with the Client and in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Code of Practice. The report is confidential to the Client and Enfys Ecology Ltd accepts no responsibility of whatever nature to third parties to whom this report may be made known.



**Wildlife Trust
Consultancies**

Aelod o Cymdeithas Ymgynghoriaethau Ymddiriedolaethau Natur
Mae Enfys Ecology yn is-gwmni I Ymddiriedolaeth Natur Gogledd Cymru

Enfys Ecology is a subsidiary of North Wales Wildlife Trust

Rhif Cwmni/ Company Number 2535184



**Ymddiriedolaeth Natur
Gogledd Cymru
North Wales
Wildlife Trust**

Executive Summary

Site	Residential Development at Brynhyfred, Chwilog, Gwynedd.	OS Grid Reference	SH 42912 38526
Surveyors	Tim Yardley and Anne Butler	Survey Date	24/06/2025
Type of Survey	Preliminary Ecological Appraisal		
Summary of Proposed Work	Residential Development of 25 units		
Designated Sites Affected	No anticipated impacts on designated sites.		
Habitats Affected	Short improved grassland Native species hedgerows Scattered scrub One building ('chalet') to be removed.		
Species Affected	Limited impact on species such as amphibians and reptiles, which might be using the hedgerows, scrub or habitat piles, possible impact of lighting on bats.		
Survey Conclusions	<ul style="list-style-type: none"> The main ecological value of the site is the large hedgerows surrounding the entire field. These are good quality native hedges with structural diversity, though not quite native species-rich hedgerows. The majority of the area is species-poor improved grassland Limited potential for protected or other animal species due to the habitats, but the hedges may be used by some species and the chalet 'garden' may be used by reptiles. Himalayan balsam and cotoneaster present. 		
Further Surveys Required	<ul style="list-style-type: none"> Reptile survey Nesting Bird checks if vegetation cleared. Bat survey on a small chalet to be removed Supervision of hedge removal. 		
Avoidance Requirements	Retain as much of the hedgerows as possible. Work is largely on habitat with low ecological value.		
Mitigation /Minimisation Requirements	Site RAMS provided including: <ul style="list-style-type: none"> Timing of works Procedures if animals are encountered Disturbance minimisation 		
Compensation Requirements	Relocation of lost hedgerow area		
Proposed Enhancements	Significant native hedgerow creation replacing poor value introduced species, and sowing of areas of wildflower grassland, reptile and other small animal habitat in the amenity area.		

Contents

1.0	Introduction	4
2.0	Site Description.....	5
3.0	Methodology	7
4.0	Results.....	9
5.0	Discussion	21
6.0	Avoidance, Mitigation and Restoration.....	26
7.0	Compensation and Enhancement.....	30
8.0	Further Works	33
9.0	References	35
APPENDIX A	Legislation and Planning Policy	36
APPENDIX B	Desk Study	41
APPENDIX C	Plant Species List.....	42
APPENDIX D	Bats and Lighting Design Recommendations	42
APPENDIX E	General Biosecurity Measures	46

1.0 Introduction

- 1.1 Enfys Ecology were commissioned by Williams Homes (Bala) Ltd to undertake a Preliminary Ecological Appraisal (PEA) of an area of land at Brynhyfryd, Chwilog, Gwynedd.
- 1.2 The proposed works involve the construction of a small residential development of 25 units, including flats, bungalows, and semi-detached housing, in a pasture field in the eastern end of Chwilog village, east of Pwllheli.
- 1.3 The primary objectives (CIEEM, 2017a) of a Preliminary Ecological Appraisal Report (PEAR) are to:
 - identify the likely ecological constraints associated with a project;
 - identify any mitigation measures likely to be required;
 - identify any additional surveys that may be required to inform an Ecological Impact Assessment (EclA); and,
 - identify the opportunities offered by a project to deliver ecological enhancement.
- 1.5 This document has been produced to advise a client of ecological constraints and opportunities to inform their design options (avoidance), likely mitigation, restoration and compensation requirements, and the need for further surveys. In addition, the report may provide initial recommendations in relation to relevant ecological enhancement opportunities given the site's context. This report may not necessarily provide the Local Planning Authority with enough information to assess the ecological impacts of a proposal.
- 1.6 This report has been produced in accordance with CIEEM (2017a) 'Guidelines for Preliminary Ecological Appraisal' and CIEEM (2017b) 'Guidelines for Ecological Report Writing'.
- 1.7 This report has been produced by Tim Yardley, assisted by Ewan Marshall. Tim has been a professional ecologist since 2009, and has been at Enfys Ecology since 2013. He has extensive experience of habitat and species surveys across North Wales and central England including Phase 1 and UKHab, as well as habitat design for mitigation and enhancement. He also carries out protected species work including amphibian and reptile and badger mitigation and Licenses. He is an associate member of CIEEM with an application pending for full membership.
- 1.8 The survey work to inform this report was carried out in February and June 2025. Habitats and species found within a discrete area of land are subject to change, this report should therefore be considered valid for a period of eighteen months in accordance with best practice (CIEEM, 2019).
- 1.9 Relevant legislation and planning policy information are included in Appendix A.

2.0 Site Description

2.1 Survey Area

- 2.1.1 The site is located in the east of Chwilog, on the southern side of the B5434, the main road through the village. The site comprises a pasture field surrounded by hedgerows, the northern boundary along the road is wider than a typical hedgerow, with a band of scrub spreading into the field from the hedgerow, probably a result of reduced grazing. The area is fenced off from the rest of the field with a wire fence. The other field boundaries are managed hedgerows. The west of the site also includes a small garden which contained at the time of survey a chalet style static caravan and scrub. The survey area is centred on OS grid reference SH 42912 38526 and is shown in Figure 2.1 below.



Figure 2.1: The Approximate survey area (red outline).

Base image © Google Maps 2024

2.2 Wider Area - Connectivity and Green Infrastructure

- 2.2.1 The wider surrounding area is very rural, comprising pasture fields divided by hedgerows, with numerous small patches of woodland and scrub. Many of the fields appear to be agriculturally improved grassland, but there are also numerous fields (including immediately south of the site) in the area which appear from aerial imagery to be less improved, with significant areas

of rushes and marshy grassland. The village occupies the area immediately to the east of the site. The wider area is shown in Figure 2.2.



Figure 2.2: The site (red outline) and the wider surrounding area

Base image © Google Maps 2025

- 2.2.1 The site therefore has good connectivity to similar habitat in the surrounding area via hedgerows. Across the rough or marshy grassland field to the south is an area of scrub and trees stretching off to the southwest. It is likely that wildlife which uses the habitats prevalent in the area is able to access this site, it is not isolated.
- 2.2.2 (PPW 12, paragraph 6.2.1). Green infrastructure (GI) is defined in Planning Policy for Wales (PPW) Edition 12¹ as “*the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect places*”. Green infrastructure (GI) can function at a range of different scales; from entire ecosystems such as wetlands and rivers to parks, fields and gardens at the local scale and street trees, hedgerows, roadside verges, and green roofs/walls at the micro scale. Development proposals should take GI into consideration in order to avoid negative impacts on habitats and species, and seek ways to maintain and enhance biodiversity. The majority of the site, except for the building and hardstanding areas is considered green Infrastructure.

¹ See: <https://www.gov.wales/planning-policy-wales>

3.0 Methodology

3.1 Desk Study

- 3.1.1 A desk study was undertaken through Cofnod, the North Wales Environmental Information Service, to determine the presence of statutory and non-statutory sites for nature conservation, and records of protected, or species and habitats of principal importance listed under Section 7 of the Environment (Wales) Act 2016. Desk study data was provided by Cofnod on 24th April 2024. The records were used to inform the survey and recommendations, and to provide context for evaluating the species and habitats found during the survey. Any relevant species results from the desk study are referred to in Section 4. The desk study used a 1km search radius, from which records were obtained.

3.2 Field Survey

- 3.2.1 All field surveys were conducted by suitably experienced professional ecologists; Tim Yardley on the 25th February 2025; assisted by Ewan Marshall, and a later visit on the 24th June 2025 by Anne Butler, following an addition to the area of the survey.
- 3.2.2 The weather conditions during the survey were dry and sunny with a light breeze.
- 3.2.3 All parts of the site were visited where possible, the habitats were mapped following the standard Phase 1 Habitat Survey methodology (JNCC, 2010). Any rare or invasive species or incidental sightings of protected species were recorded, as necessary. A search for evidence or potential for protected species was carried out, including amphibians, bats, and reptiles. Evidence of badgers (*Meles meles*) including setts, dung pits, hairs, footprints, and scratching posts or trees was searched for. Trees with suitable features for roosting bats, including knot holes and other crevices, hollow trunks and dense ivy coverage were identified.
- 3.2.4 A brief inspection of a chalet on site was carried out for suitability for bats. This was not a full survey and no action was taken which might disturb bats, such as shining torches into any crevices, endoscopes, and the building was not entered (although the surveyor is an accredited agent on NRW Bat Licence S092545/1). The potential of the chalet as habitat for bats was assessed with a visual inspection of the exterior (and further survey recommended).

3.3 Limitations

- 3.3.1 The results of this survey consist only of those species encountered during a short space of time on one day. Species that use the site infrequently or are present at different times of the year may not be recorded, and the absence of species from the results of a single survey should not be taken as indicating the species' definite absence from the area in question. Descriptions of plant species concentrate on the most obvious and abundant species present as determinant of habitats present.

- 3.3.2 The initial survey of the large field was undertaken before the main flowering period. Some flowering plants present may not yet be visible in late February and so will not have been recorded, but the survey was still carried out within the appropriate season for PEA, and on the habitats present at this site this is unlikely to have significantly limited the accuracy of the survey.
- 3.3.3 While reasonable efforts have been made to search for invasive non-native species (INNS), and any seen were recorded, this is not a comprehensive invasive species survey and does not claim or imply the definite absence of Japanese knotweed or other invasive plants, for which a specific survey should be commissioned.

3.4 Terminology

- 3.4.1 In this report 'site' and 'survey area' are used to refer to the area surveyed by the ecologist, which is subject to the proposed development or planning application. The only exception may be some unavoidable use of 'site' when discussing designated sites such as SSSIs. 'Search area' refers to the area from which data was obtained for the desk study.
- 3.4.2 English species names are generally (but not exclusively) used in the text for readability, however Appendix C contains a list of species recorded and gives scientific names.

4.0 Results

4.1 Desk Study – Designated and Notable Sites

- 4.1.1 There were no statutory designated sites within 1km of the survey area.
- 4.1.2 There were ten non-statutory designated sites, all of which are Gwynedd County Council Wildlife Sites, the closest, 220m to the south, comprises a species rich hedgerow which is a candidate wildlife site.
- 4.1.3 In addition, almost all of the entire 1km radius search area (with the exception only of the westernmost part, and including the area of the site), is considered part of the Eryri (Snowdonia) Important Invertebrate Area (IIA) by Buglife, designated for its variety of important invertebrate habitats (Olds and Chmurova, 2023). The site is also within an area designated as a B line.
- 4.1.4 Details of the designated sites are provided in Table 4.1.

Table 4.1: Designated Sites within 1km of the Site

Name	Designation	Distance from site (m)
Eryri	Important Invertebrate Area (IIA)	0
B-Lines Cymru	B-Line	0
Lon Drwsdeugoed	Wildlife Sites for Gwynedd (Candidate)	220
Pen-y-bryn	Wildlife Sites for Gwynedd (Adopted)	288
Drwsdeugoed	Wildlife Sites for Gwynedd (Adopted)	386
Plas Gryffydd ap Ifan	Wildlife Sites for Gwynedd (Candidate)	466
Llanarmon	Wildlife Sites for Gwynedd (Adopted)	709
Ty-hir	Wildlife Sites for Gwynedd (Candidate)	781
Pen y Bryn	Wildlife Sites for Gwynedd (Candidate)	787
Chwillog Bach	Wildlife Sites for Gwynedd (Adopted)	793
Bryn Bachau Farm	Wildlife Sites for Gwynedd (Candidate)	862
Plas Llanarmon	Wildlife Sites for Gwynedd (Adopted)	955

4.2 Desk Study – Species Records

- 4.2.1 Cofnod hold 169 total records of 110 unique taxa within 1km of the site; individual records can include a number of sightings or individuals. There were no records of flora or fauna from within the survey area itself. This is an extremely low number of records relative to a

typical scheme of this size, which is probably due to the relatively remote location and low population, and consequent low levels of recording taking place, rather than the absence of wildlife to record.

- 4.2.2 The closest records to the site are Pipistrelle bats (*Pipistrellus* species) recorded 27m and 35m to the north of the site, in a shed across the road, the recorder specifically states “not a roost site”, but these records date from 1999 which is older than the cut-off point of twenty years used in this report. Other bats are recorded in buildings in Chwillog to the east, 170m away, most recently in 2023. There are no records of reptiles, and the only amphibians being common frog in a garden in the village.
- 4.2.3 The results of the desk study for protected fauna are included with the survey results in Table 4.4, Section 4.7, and flora in section 4.8. Results of the Cofnod data search are provided in Appendix B; full data (e.g. specific locations) has not been provided for sensitive data.
- 4.2.3 Notable flora records from within the search area included the invasive non-native species Himalayan Balsam (*Impatiens glandulifera*), *montbretia x crocsmia*, and *Rhododendron ponticum*. None closer than Montbretia 220m away to the north. No other notable species were recorded from within the survey site, either protected by the Wildlife and Countryside Act 1981 (as amended) or listed under Section 7 of the Environment (Wales) Act 2016.

4.3 Phase 1 Habitat Survey

- 4.3.1 Phase 1 Habitat and feature types recorded within the site are listed below:

A1.2.2	Coniferous woodland – Plantation
A2.1	Dense scrub
A2.2	Scattered scrub
A3.1	Broadleaved tree
B4	Improved grassland
B6	Species poor semi-improved grassland
J2.1.2	Intact hedge
J2.3.2	Intact hedge with trees
A2.1	Dense scrub
A2.2	Scattered scrub
C1.2	Scattered bracken
G2	Running water
J2.4	Fence
J2.5	Wall
J3.6	Buildings
J4	Bare ground
J5	Other Habitat (here used for hardstanding).

- 4.3.2 Some modifications to standard phase 1 have been made for clarity on a small-scale site, the feature mapped as Plantation Coniferous woodland is technically a hedge comprising broad and tall cypresses, but on the scale of this map, its width is better portrayed as a habitat polygon, of which this is the closest fit. J5 has been used for hardstanding areas.

- 4.3.3 A Phase 1 Habitat map with target notes is provided in Figure 4.2 below, with information associated with target notes provided in Table 4.1. Descriptions of the habitats are provided in Table 4.3. Where relevant, photographs are included with the text.

TABLE 4.1. TARGET NOTES (AS SHOWN ON FIGURE 4.2, OVERLEAF).

Target Note	Description
1	This end of the site is an overgrown garden rather than a field, the central area contains a brash, stones and other material, the northern end has become covered in bramble. Good reptile habitat.
2	A tall, broad hedgerow of Cypress trees -marked as woodland to stand out on the map and because of its breadth when mapped at this scale. Limited other vegetation.
3	Two large ash trees in the field boundary, they had no obvious crevices etc. suitable for bats, but with significant ivy coverage use by bats can't be ruled out
4	Two pellets found in the grassland towards the southern boundary, likely to be kestrel as contained invertebrate parts, but not certainly identified and could be owl.
5	The southeastern corner of the site was very wet, mostly bare mud. Remains of willowherb stands on slightly higher areas.

Brynhyfred, Chwilog; Phase 1 Habitat Map

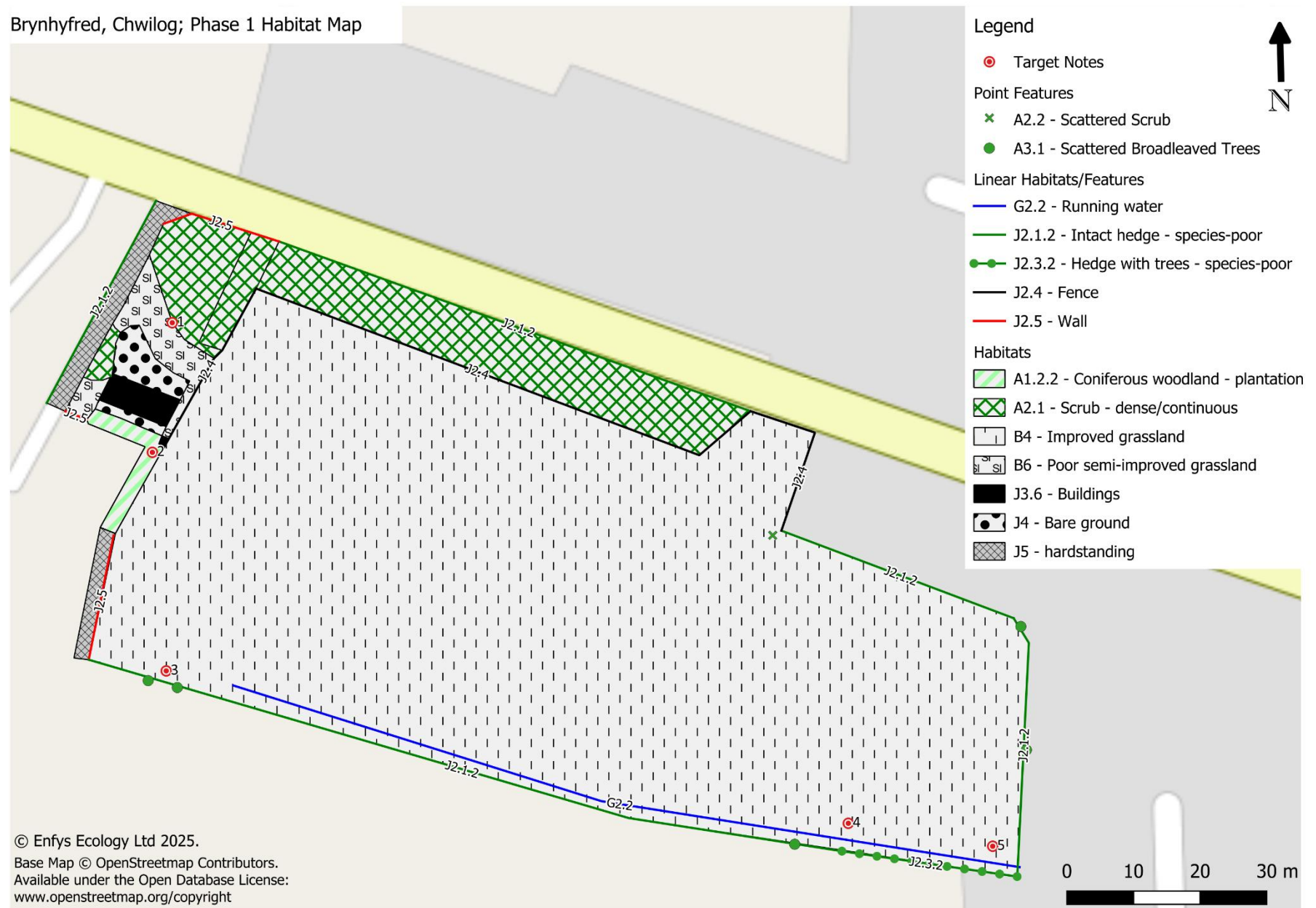








Figure 4.2: Phase 1 Habitat Survey Map

Table 4.3: Habitat Descriptions

Habitat Description	Photo
Improved grassland	
<p>The majority of the site was covered by short, improved grassland. The dominant grass was Yorkshire fog, in small tussocks (as can be seen in pictures to the right) making up most of the sward, with some perennial rye, and meadow grass. Otherwise, typical agricultural grassland species were scattered throughout, including broadleaved dock, dandelion, hawkweeds, creeping buttercup and ribwort plantain. Soft rush was also scattered throughout but particularly in the wetter south. Remains of scattered rosebay willowherb at the margins, with common nettle. There was little else in the sward, mosses were rarely present.</p>	
Dense Scrub	
<p>The northern boundary along the road comprised a (mostly) hawthorn hedgerow atop a clawdd (see 'hedgerows' below). Along the southern side of this was a broad strip of dense scrub, which is fenced off from the field (and so likely results from this fencing off from grazing pressure) about 4m across.</p> <p>The vegetation here comprised mostly bramble, with some gorse, up to approx. 1m high, and dense, though with some small open areas. The ground flora was similar to the field, with grasses, docks and buttercup, plus some herb Robert and red campion.</p>	

Habitat Description	Photo
<p style="text-align: center;"><i>Other scrub</i></p> <p>The garden area in the west was partly dominated by dense, low bramble. But also contained cotoneaster, privet, Dog rose, occasional grey willow saplings and bindweed. There were also some patches of bare ground and piled logs and brash. South of this, adjacent to the track was an area of scrub dominated by grey willow, with also bramble, nipplewort, rosebay willowherb and tutsan. Dense willow scrub, with hawthorn, with nettles, bramble and hedge woundwort forms a transition between the garden area and the bramble scrub in the field. Yorkshire fog was the dominant grass beneath both areas. The field also included occasional isolated bramble and gorse plants.</p>	
<p style="text-align: center;"><i>Semi-improved grassland</i></p> <p>The 'garden' area in the northwest includes several small and generally similar patches of semi-improved grassland. Like the field this was dominated by Yorkshire fog, with smooth meadow grass and perennial rye, plus nettles, broadleaved willowherb, Red campion, common daisy, Cleavers abundant, and occasional Vipers bugloss (possibly planted).</p>	
	
	

Habitat Description	Photo
<i>Hedgerows and boundaries, and watercourse</i>	
<p>The field was surrounded by managed hedgerows, generally comprising hawthorn and blackthorn, particularly in the south, plus some willow. Privet was present in the east, and also along the edge of the garden area in the west.</p> <p>The northern and southern boundaries were each formed of a hedge atop a well-constructed clawdd, faced with stones and largely intact. These had a ground flora typical of a hedge including red fescue, ivy, wall pennywort, red campion and foxgloves. Gorse and bramble were scattered throughout. A ditch containing water ran along the north side of the southern boundary (see picture, top right). This was mostly open, without vegetation (and heavily poached by cattle), but in places ivy, harts tongue, and brooklime were present, with the ever present bramble. About half the length of the ditch contained water flowing slowly through the mud, less than 2cm deep.</p> <p>In the west, a tall hedgerow of cypress trees had almost no ground flora or other vegetation.</p> <p>Beside the track to the west of the garden area and possibly outside the site boundary was a managed hedgerow comprised privet with hawthorn, bramble, some elder, tufted vetch and Yorkshire fog.</p>	<div><p>Northern boundary Clawdd</p></div> <div><p>Southern Boundary Clawdd</p></div> <div><p>Western boudary</p></div> <div><p>Hedgerow beside track on western edge of site</p></div>

Habitat Description	Photo
<i>Other habitats – Bare ground, hardstanding</i>	
<p>The 'garden' area in the northwest includes several areas of bare ground, slate chippings, and hardstanding. Where vegetated, the most prevalent plants were common cat's ear, bramble and Yorkshire fog.</p> <p>The field contained some areas of bare mud, particularly the southeast corner.</p>	
<i>Other habitats – Building</i>	
<p>The south of the garden area contained a small single storey mobile home 'chalet'. This was disused and falling into a state of disrepair, the guttering was coming down and it was standing on concrete blocks, with a substantial space underneath. There was no loft space.</p> <p>The chalet had several gaps, particularly rotting and broken wood at the end and under the eaves, and obvious potential bat entry places between broken wooden slats and felt.</p> <p>A small wooden hut behind (south) of the chalet was in a poor condition and could not be accessed. It had negligible potential for bats.</p>	

4.4 Flora & Fungi

- 4.4.1 Floral diversity of the site was low; the site is almost all species-poor improved grassland and scrub, with species common in these habitats and no unusual or otherwise notable species. The hedgerows had good structural quality but were not particularly species-rich. Most did consist of native species.
- 4.4.2 None of the species recorded during the survey are protected by the Wildlife and Countryside Act 1981 (as amended) or listed under Section 7 of the Environment (Wales) Act 2016. No other nationally or locally rare species were recorded.
- 4.4.3 No fungi were recorded. The area is potentially suitable for grassland fungi, but is not thought likely to be optimal habitat; the species-poor sward with limited moss and in places near monoculture of agricultural grasses suggests agricultural improvement, which would not be favourable for fungi. The ground is also extensively damaged by grazing in places.
- 4.4.3 Appendix C contains a list of plant species recorded during the survey.

4.5 Invasive Non-Native Species (INNS)

- 4.5.1 A cotoneaster was present in the garden area in the west. This was probably originally planted here when the area was managed as a garden. No other INNS were seen during the survey.

4.6 Fauna

- 4.6.1 No protected or notable species or signs of the presence of protected or notable species were seen within the survey area during the survey.
- 4.6.2 The survey results for protected species including records within a 1km radius of the site are described in Table 4.4 below.

Table 4.4: Results of Protected and Notable Species Assessment

Species	Suitability of Habitat	Desk Study Records	Further Species Consideration Required?
Amphibians – including great crested newts <i>Triturus cristatus</i> (GCN)	The site does not contain standing water such as a pond. The ditch is too shallow and also running water, but deeper areas could possibly be used by common amphibians. There is no breeding habitat for great crested newts (GCN). The grassland was short, and unlikely to be suitable for foraging common amphibians, but the hedgerows are very suitable. Great crested newts are very unlikely to breed on site due to the lack of standing water and there were no records of GCN within close proximity of the site, suggesting that their presence is unlikely.	There were no records of GCN within a 1km radius of the site. The only amphibian record is a common frog just under 400m to the east.	Reasonable Avoidance measures (RAMS) required only. See Section 6.
Badger <i>Meles meles</i>	There was no evidence of badgers within the site, however the site is suitable for badger foraging, with shelter under the scrub and connectivity via hedgerows to the wider landscape, and badgers are likely to access the site. The area is unlikely to be suitable for sett building; although the hedgerow boundaries may provide limited suitable habitat these were able to be examined and no setts were present. It is possible a minor sett could be hidden in the scrub, but with no evidence of badger activity this is considered unlikely.	There were no specific records of badgers within 1km of the site, but Cofnod do have 2 records at the grid square level within 1km, both centred over 1km to the south.	Reasonable Avoidance measures (RAMS) required only. See Section 6.
Bats	With the exception of the building (see 5.5.7) There was no definite roosting habitat on site. Two large trees at target note 3 were covered in ivy and might feature suitable cracks or crevices. Otherwise bats are very unlikely to be resident. The entire site is suitable for foraging bats due to its connectivity to suitable habitat and several records of bats close by in the village. Bats are likely to fly across or forage within the site. The chalet has potential roosting features under the eaves and in gaps in the roof, and so is potentially suitable for bats, though probably not a major roost. Further survey of this building is recommended.	There were 8 records of bats within the village close to the site, including roosting lesser horseshoe (<i>Rhinolophus hipposideros</i>) and pipistrelle bats, and an additional three further out, but all within 1km of the site, A far proportion of all the records obtained.	Lighting considerations. See Section 6.

Table 4.4: Results of Protected and Notable Species Assessment

Species	Suitability of Habitat	Desk Study Records	Further Species Consideration Required?
Birds	All of the trees, scrub and hedgerows provide suitable habitat for nesting birds. Nesting birds may be present in all these habitats during the nesting season. There is less potential for ground nesting species as the improved grassland has likely been disturbed frequently by grazing until very recently.	There were records of just under 50 bird species in the area, the closest, and only one within 500m, was rook (<i>Corvus frugilegus</i>) 100m north. Swift (<i>pus apus</i>) were recorded using roofs in the village 500m to the east. All but 12 of the records are a grid square record 1km to the south east.	Nesting surveys if vegetation removed in breeding season.
Hedgehog <i>Erinaceus europaeus</i>	It is likely that the site is suitable for hedgehogs, with hedgerows providing sheltered connectivity to the wider rural landscape, so they may be present on the site.	There were two recent hedgehog records both grid square records 1km to the north and south.	Reasonable Avoidance measures (RAMS) See Section 6.
Reptiles	Many areas of the site are very suitable for reptiles, including the margins of the scrub, clawdd, hedgerows and the entire garden area, which included piles of wood and other material. Only the short grassland of the field was of low suitability, which would rise if the grass grew longer. The base of the hedgerows and the piles in the garden area could be used as potential hibernacula or refugia. While there are no records of reptiles in the area, this could be due to the relative lack of records overall. The householder to the southwest told the surveyor she had seen reptiles within and adjacent to the site in the last few years.	No records.	Reptile Survey recommended. See Sections 5.5 and 8.

Table 4.4: Results of Protected and Notable Species Assessment

Species	Suitability of Habitat	Desk Study Records	Further Species Consideration Required?
Other species	There are no watercourses deep enough or suitable for water vole (<i>Arvicola amphibius</i>) or otter (<i>Lutra lutra</i>) within the site and no nearby records of either, it is therefore unlikely that these aquatic species will be present. The area is suitable for brown hare (<i>Lepus europaeus</i>), though relatively small and enclosed by housing. The area is suitable for polecat <i>Mustela putorius</i> . The area does not have habitat suitable for dormice, red squirrel or other protected species.	There are no records of water vole or otter. within 1km of the site. One record of brown hare 786m to the northwest. A few records of common invertebrates, and freshwater pearl mussel (<i>Margaritifera margaritifera</i> - <i>Margaritifera</i>) at grid square level 500m to the east.	No.

5.0 Discussion

5.1 Proposed Works

- 5.1.1 The proposed works comprise a small housing development of 25 dwellings in 22 units (including flats) arranged around a small crescent shaped driveway on the southern side of the B4354 in Chwilog. The buildings are predominantly in the west and centre of the site, with gardens running to the boundary. In the east of the development is a 955m² amenity space, largely open grassland as public open space, and some habitat creation including tree planting.
- 5.1.2 The scheme is largely contained within the existing hedgerows, which will be retained except along the northern boundary where the road access requires the clawdd to be removed. New hedges will be planted to create a new hedgerow enclosing the western side of the development where none presently exists and replacing the low value cypress hedge. Figure 5.1 below shows the current plans for the site as provided to Enfys Ecology.

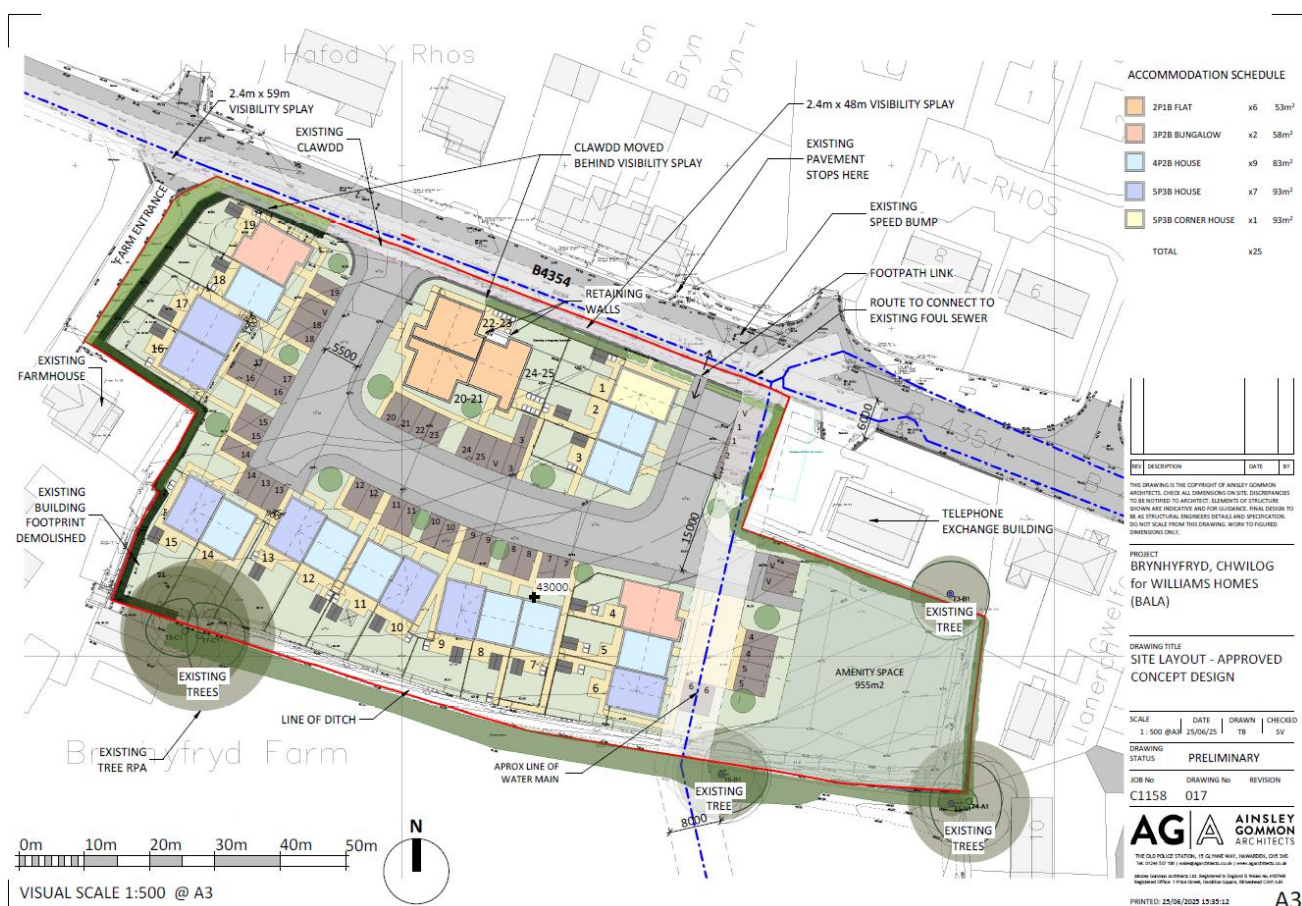


Figure 5.1: Plan of the Proposed Works
Base image © Ainsley Gomon Architects 2025.

5.2 Impacts on Designated and Notable Sites

5.2.1 The proposed works will not have a direct impact on any statutory designated nature conservation sites. There are none within 1km. All the non-statutory sites are also over 500m away, and very unlikely to be affected. There is connectivity via hedgerows to sites south of the scheme.

5.3 Habitats

5.3.1 Table 5.1 provides information with respect to the habitats which were recorded on site and whether these habitats are listed as a 'habitat of principal importance' under Environment (Wales) Act 2016 or listed as any other local conservation priority habitats. Consideration of the potential impacts of the proposed project on the habitats are also discussed.

Table 5.1: Overall Site Assessment Rating

Habitat Recorded	Habitat Value	Brief Discussion
Improved grassland/semi-improved grassland		Habitat is not considered to be in good condition on the site, being species-poor and heavily grazed and improved. This will be lost as part of the development.
Dense scrub		Many areas of scrub are largely bramble, however this does provide an important habitat with good cover. Some willow scrub was also present, with limited ground flora. This area will also be lost as part of the scheme, and so mitigation is required.
Hedgerows/earth banks	HPI, CBP	All All hedgerows consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species are Habitats of Principal Importance under Environment (Wales) Act 2016. None of the hedgerows present has the (minimum) five woody species within one 30m section to qualify as a native species rich hedge under the technical definition, and all are managed, but some (the northern and southern boundary) are broad or double hedgerows with cloddiau underlying most of the length. They are not particularly diverse. It is expected that the southern hedgerow and trees will be retained however the northern, road side hedge must be removed due to highways concerns. This will require compensation.
Hedgerows – non native	HPI	Non-native hedgerows are not considered HPI, and the cypress hedge is not considered of great value. The privet hedges still provide useful connectivity. These are expected to be replaced with native hedges.
Bare ground, Hardstanding		Generally sparsely vegetated and without important plant communities, and so of low value.
Key: HPI – Habitat of Principal Importance under Environment (Wales) Act 2016 CBP – Gwynedd/Anglesey Corporate Biodiversity Action Plan (2011-2026)		

5.3.2 The most important ecological feature of the site are the hedgerows and clawdd surrounding the field, as well as mature trees on the southern boundary. The scrub provides useful

vegetation cover but is generally species poor, and also relatively isolated on the northern side of the site. the ground flora was relatively poor (which may be partly, but not entirely, due to the time of year of the field survey) but the earth and stone banks of the clawdds provide good habitat for small animals. Native hedgerows are considered Habitats of Principal Importance under Section 7 of the Environment (Wales) Act 2016.

- 5.3.3 Otherwise, agricultural improved grassland was the dominant habitat on the site, the exception being the former garden area in the west, which had rough grassland and some scrub. These habitats were also generally species-poor. The grassland was dominated by agricultural grasses, mostly Yorkshire fog and perennial rye, and all of the species recorded here were typical of improved pasture grassland.

5.4 Flora

- 5.4.1 None of the plant species recorded during the survey are protected by the Wildlife and Countryside Act 1981 (as amended) or listed on Section 7 of the Environment (Wales) Act 2016. In addition, no nationally or locally rare species were recorded.

5.5 Fauna

- 5.5.1 Almost the entire affected area comprises improved grassland which has limited value for most wildlife, though may be used for foraging by badgers and hares. The hedgerows are suitable habitat for a number of species, including birds and invertebrates in the canopy and invertebrates and potentially reptiles, amphibians and small mammals in the earth banks, roots and stones at the base. The hedgerows also have good connectivity to other areas of similar habitat which may support wildlife communities.
- 5.5.2 **Amphibians** - The majority of the site is not optimal habitat for amphibians, being short grassland, and it is not likely that this area is commonly used by them, though it would be more suitable if longer in length. The hedgerows however are very suitable and may be used as refuges and for moving across the wider landscape, therefore common amphibians are likely to be present in the hedges and may be encountered during any works. Amphibians are considered unlikely to be breeding within the site as no suitable breeding habitat was recorded, there are no ponds or non-running water in or near the site, and only a single record of common frog was found within 1km of the site.
- 5.5.3 The specially protected Great Crested Newt (GCN) was not recorded in the area and is not considered likely to be present.
- 5.5.4 Basic Reasonable Avoidance Measures (RAMS) should be put in place during any works to minimise any risk of harm to amphibians. These are provided in Section 6.3. The creation of additional habitat for amphibians is proposed, though the scheme does not feature any new ponds or breeding habitat.
- 5.5.5 **Badger** - The open grassland and hedgerows are both suitable for foraging by badgers, and so it is possible that they access the site at least occasionally. The base of the hedgerows

would be suitable for sett building, but no evidence of this, or badger activity in general was seen. Badgers are not likely to be resident on or near the site but may access it from time to time. Basic Reasonable Avoidance Measures (RAMS) put in place during any works will also serve to minimise any risk of harm to badgers. These are provided in Section 6.3.

- 5.5.6 **Bats** – There are two areas within the site which might be useable by roosting bats; the chalet, and two large trees on the southern margin (Target note 3 on figure 5.2) which might have suitable features concealed by ivy. We understand that the trees will be retained, therefore no further action is needed, but if the plans change and removal of these trees is proposed then further surveys will be required to determine if they are being used by bats. NO works to these trees should take place without an appropriate survey.
- 5.5.7 The Chalet is potentially suitable for bats. It was in a dilapidated condition with several areas with potentially usable features including gaps at the edge of the roof and eaves, and under slipped roof tiles and gaps in the roof. The building was considered to have ‘low’ potential for roosting bats under the BCT guidelines (Collins 2023) from an initial inspection of the exterior, due to the presence of potential features, but it is unlikely that a large roost is present, it may be useable by a small number of bats. This is partly because there is not believed to be a loft space, so any crevices will be inside the roof and so subject to fluctuating temperatures throughout the day. However this survey did not include a full bat survey of the chalet, which was not entered. Crevices etc. were not examined with an endoscope or illuminated, and no action was taken which might disturb a bat should they be present so this rating may be altered once a survey has occurred. As the building will be removed it is recommended that an appropriate survey is carried out in order to determine if bats are using it.
- 5.5.8 There were several records of bats in the immediate areas, and bats probably use the area for foraging; the hedgerows provide flight lines and sheltered areas where flying insects may collect. The primary impact of the scheme on bats will be from any increase in lighting. It is understood that no significant lighting is proposed, but there will inevitably be an increase in light spill from the houses and street lights.
- 5.5.9 It is recommended therefore that the proposed lighting for the scheme is designed to minimise light spill onto the hedgerows, which should be as dark as possible. The southern boundary in particular should be a designated dark zone with minimal lighting.
- 5.5.10 There is potential to increase the suitability of the area for bats by adding roosting features, i.e. bat boxes, to the site.
- 5.5.11 **Birds** - No evidence of nesting birds was seen within the site, but this is expected as the survey took place outside the typical nesting season. All of the trees, scrub and shrubs on-site would provide suitable nesting and foraging opportunities and must be considered potential nesting habitat. RAMs detailed in Section 6.3 will be followed to prevent disturbance to nesting birds.
- 5.5.12 **Hedgehog** - The site has good potential for hedgehogs and good connectivity to other suitable hedgehog areas. However, the works are considered unlikely to negatively affect hedgehogs, provided that they are not disturbed during their hibernation period; see Section 6.3.2 for

specific mitigation for hedgehogs. It is recommended that the scheme mitigate for and is likely to enhance the area for hedgehog, if present, including adding hedgehog access and habitat piles, and additional hedgerows; see enhancements detailed in Section 7.2.

5.5.13 **Reptiles** – The majority of the field was short grassland at the time of the survey and considered unlikely to support a population of reptiles; but the clowds, hedgerows, garden area, scrub and open ground all contains good habitat including earth banks with crevices around roots and rocks, and it is possible that reptiles use the hedges, if not the majority of the site. Parts of the field were marginally suitable but could become more so if the sward length increased somewhat.

5.5.14 There are no records of reptile species (except an anecdotal comment from a neighbour who reported to the surveyor of seeing a snake in the area), but this probably reflects low recorded effort in the area; there is good habitat with connectivity to other habitat in the wider area, and so the presence of reptiles in the area and therefore also within the site, cannot be ruled out.

5.5.15 It is therefore recommended that a survey is carried out for reptiles over the entire site in order to establish if they are present, and inform any required mitigation. Mitigation can be designed following the survey if reptiles are present, but the general RAMS in section 6.3.2 should also be implemented throughout the works to minimise any impacts on any reptiles encountered during the scheme.

5.5.16 **Other Species** - No specific mitigation is necessary for other protected species as none are expected to be present. It is possible that brown hare could potentially use the grassland. General RAMS set out in section 6.3 should be followed, and will also minimise any potential impacts on any other animals using the site.

5.6 Invasive Non-Native Species (INNS)

5.6.1 Cotoneaster was found in the garden area in the west, though in very small amount, probably originally planted as an ornamental. It does not seem to have spread, but has the potential to do so, and should be removed prior to works starting. Cotoneaster can be cut or treated with herbicide, or dug out, but the remains must be burnt on site or treated as controlled waste and disposed of appropriately.

6.0 Avoidance, Mitigation and Restoration

6.1 The Step-Wise Approach

6.1.1 Development proposals should take green infrastructure into consideration in order to avoid negative impacts on habitats and species, and seek ways to maintain and enhance biodiversity. Impacts on habitats and species should be treated in a step-wise manner (Planning Policy Wales PPW12, paragraph 6.4.15), by seeking to:

- **Avoid** damage to biodiversity in its widest sense by maintaining the largest possible area of existing habitat supporting biodiversity and functioning ecosystems, particularly Section 7 habitats and species where present, through careful development design and consideration of long-term maintenance and management and ensuring that retained habitats continue to be well connected to adjacent habitats to provide connectivity for key species.
- **Mitigate** or **restore** by identifying measures to address the specific negative effects by repairing damaged habitats and disturbed species. The measures should seek to restore in excess of like for like, accounting for disturbance and time lags for the recovery of habitat and species, and in every case, mitigation or restoration measures should seek to build ecosystem resilience within the site and where possible the wider area.
- As a last resort off-site **compensation** for unavoidable damage must be provided. This must be of significant magnitude to fully compensate for any loss.
- All development must **deliver a net benefit** for biodiversity and ecosystem resilience from the baseline state (proportionate to the scale and nature of the development proposed).

6.2 Avoidance

6.2.1 Based on the ecological information set out in this Preliminary Ecological Appraisal, the native hedgerows are Habitats of Principal Importance and the primary features of ecological value on the site. Therefore impacts to the hedgerows (and clawdd) should be minimised and as much of this habitat as possible should be maintained. The rest of the habitats are of less (but not no) ecological value, and so, while any loss of vegetated areas would ideally be avoided, the loss of the improved grassland areas would not represent a major loss of ecological value.

6.2.2 The plans for the scheme recognise this, and retain as much as possible of the hedgerows surrounding the development. The only exception being the northern hedgerow, and the low value cypress hedgerow to the west.

6.2.3 With respect to the potential impact of bats from lighting associated with development schemes, the Institute of Lighting Professionals (2023) 'Bats and Artificial Lighting at Night' guidance suggests that the ecological mitigation hierarchy applies to lighting design: Impacts to biodiversity should be avoided in the first instance through design and where this has been clearly demonstrated not to be possible, appropriate mitigation needs to be put in place. Compensation is the least desirable option, so all other avenues should first be explored and

ruled out. In parallel, opportunities to design lighting betterment for biodiversity should be sought wherever possible.

- 6.2.4 It is therefore important to integrate avoidance measures into developmental design, by retaining ecologically functional 'dark corridors' within schemes wherever feasible, and in preference to seeking lighting mitigation strategies. Consideration should be given to the lighting effect of a scheme on Key Habitat and Supporting Habitat areas for bats, as well as commuting routes.
- 6.2.5 It is therefore recommended that as much of the hedgerows as possible are maintained as dark zones, free from artificial light spillage, particularly the southern boundary which will be retained and forms an obvious corridor across the area. Light spill on all the hedgerows should be minimised and this should be reflected in the appropriate plans for the site.
- 6.2.6 The ditch will be retained.
- 6.2.7 General biosecurity measures which should be adopted as part of any development project are provided in Appendix E.

6.3 Mitigation

- 6.3.1 This section sets out the likely mitigation measures which could be adopted as part of the project to minimise potential impacts on biodiversity features. The following general mitigation or Reasonable Avoidance Measures (RAMS) should be adopted at all times during the works:
- Prior to the start of works, a toolbox talk should be given to everyone involved in the project to set out any ecological protection measures and a log of this should be kept.
 - Working areas should be kept to the minimum required.
 - Works should be avoided within 1 hour of dawn and dusk where possible, in order to avoid disturbance to nocturnal animals. If works during this time are needed, all lighting should be directional and directed away from boundary edges and any surrounding habitat.
 - Storage of fuel must follow best practice. Potential pollutants should be restricted to site compounds and hardstanding areas. Spill kits should be readily available throughout the works.
 - Should it be necessary to have any excavations left open overnight a suitable ramp (such as a plank or branch) must be provided to allow badgers and other animals to escape the pit. Ramps could be created by grading the slope at the edges or using scaffold boards.
 - All materials brought onto site should be stored on hard standing where possible. Materials should be stored on raised pallets or bagged, to prevent amphibians (or other wildlife) from taking refuge beneath them.

- Any terrestrial mammals seen must be allowed to leave the area on their own. If this is not possible e.g. the animal is injured or trapped then an ecologist must be called.
- If at any point in the works an amphibian or reptile is found within the works area all works in the vicinity of the sighting must immediately cease. Common amphibians should be moved from the working area by site workers (wearing gloves) and placed in a nearby hedgerow. Reptiles will usually retreat to a safe area of their own accord. If, at any point, GCN are discovered during the works then works will have to stop and a licence may be required from NRW before they can continue.

6.3.2 The following mitigation measures should be adopted during the construction-phase in order to minimise any potential impacts on habitats or species.

- **Retained habitats** - Appropriate protection fencing should be used during the construction period to ensure that there is no access to, or risk of damage to areas of retained habitat within / adjacent to the study site. This will be informed by the results of the reptile survey.
- **Amphibians, reptiles and hedgehogs** - Care must be taken regarding clearance of the northern clawdd, as well as any piles of brushwood, rubble, plant material or other 'habitat piles' such as are present in the garden area, in the colder months due to the possibility of disturbing hibernating animals including hedgehogs, amphibians and reptiles. Such piles should not be disturbed between October and April or when daytime temperatures are below 10°C. Any habitat piles should be moved by hand.

ALL hedgerow clearance must ONLY be carried out during the season when hedgehogs, amphibians and reptiles are likely to be active (April-September), and the works should be supervised by an appropriately experienced ecologist. The risk of potential impacts on nesting birds will be minimised (see the section on Nesting Birds, below).

It is also recommended that a full reptile survey of the site is carried out – the results of which will further inform mitigation for reptiles. If none are present no further work is likely to be needed, whereas additional mitigation may be required for a large population.

- **Badgers** - If at any point a badger sett is discovered on or adjacent to the site, then a suitably qualified ecologist should be informed. The ecologist will assess the sett and advise if any further action is required. No works should take place within 10m of a sett, and not within 30m if using machinery, unless under an appropriate licence. **Works in close proximity to an active badger sett are likely to require a licence and must not proceed until one is obtained.**
- **Bats** - After avoiding, wherever possible, the potential impacts of Artificial Lighting At Night (ALAN) through scheme designs, if further mitigation measures are required in the form of lighting controls, ILP (2023) recommend that a lighting professional helps to select those light sources, lamps, LEDs and their fittings which are most appropriate for

the project. Further details regarding lighting designs from ILP (2023) are given in Appendix D. The following overarching mitigation measures are recommended:

- Careful choices would need to be made about the type of lighting chosen for a scheme, and this should be designed through a multi-disciplinary design approach. Whilst Part Night Lighting (PNL) schemes and the installation of LED lights may have energy-saving benefits, they can result in an increase in light intensity, impacting on bat behaviours, and the lighting design for each site should be developed using information from bat surveys, and pre-development light level data.
- Clearance of the chalet and the two trees at target note 3 (if proposed, we understand these trees will be retained) will require surveys to determine if bats are present.
- **Nesting birds** – All vegetation clearance during the nesting season (March-September inclusive) may impact nesting birds, and so further survey may be required in order to establish if nests are present. Therefore it is recommended that as far as possible all vegetation clearance takes place outside these months. If this is not possible, all vegetation to be cleared **MUST** be thoroughly checked for nests, immediately prior to the works; **if any active nests are present all works in the vicinity must cease until all chicks have fledged**. *It may be noted that this conflicts with the specification above for removal of hedgerows in the summer when reptiles are active – the two groups have conflicting requirements. The reptile survey will establish if reptiles are present, if they are, works should generally be specified for the period when reptiles are active (May-October) and nesting bird surveys carried out, as it is easier to wait for chicks to fledge, the potential delays caused by reptiles hibernating will be longer.*

6.4 Restoration

- 6.4.1 Restoration of the existing habitats is not required as they are not considered particularly ecologically valuable and so enhancing retained areas and compensating for losses through creation of more valuable habitat is considered to provide more overall value than restoring the scrub or grassland.
- 6.4.2 The existing road side clawdd is proposed to be moved slightly to the south as part of the works. This will be done carefully, by hand as much as possible. The clawdd must be restored in its new position in a similar state to its original condition, by rebuilding with the original material in as close as possible to the same structure. Planting may be required to restore the ground flora, however if the original material is used the seed bank should persist. This is also considered compensation (see section 7).
- 6.4.3 Cotoneaster was present in one part of the garden area. This will require control.

7.0 Compensation and Enhancement

7.1 Compensation

- 7.1.1 This section of the report identifies which habitats / species features may need to be compensated for as part of the proposed development, and provides information to incorporate the recommended compensation proposals into the scheme design.
- 7.1.2 Hedgerow and clawdd will be lost along the northern boundary where the road access will be created, and cannot be reduced further due to highways and sightline regulations. The remaining habitats are of low value; however this does not mean that that compensation should not be included.
- 7.1.3 In the first instance, the scheme proposes to compensate for this loss by relocating and rebuilding the same clawdd somewhat to the south of its present position. This will regain a proportion of the lost clawdd and hedgerow area. It is recommended that additional hedgerows should be planted to compensate for the loss of hedgerows overall, and it is understood that there will be a new hedgerow created along the western side of the site, which is presently a low value cypress hedge, wall and fence.
- 7.1.4 Additional planting is also proposed to fill in existing gaps in the hedgerows, this is highly recommended to restore and enhance the connectivity in the area as well as in compensation for lost hedgerows.
- 7.1.5 To compensate for loss of the improved grassland covering most of the site, wildflower grassland should be sown/planted. Loss of the existing improved grassland from much of the site area will be unavoidable, but these losses will be offset through the replanting of some native tree species, woodland wildflowers and other wildflower grassland in small areas through the site, particularly in the east of the site where a large amenity area presents some potential for planting. This is likely to result in an actual increase in the number of wildflowers even if the area is small, as the existing improved grassland is species-poor.
- 7.1.6 New wildflower grasslands should be established across the public areas of the development and should comprise native species which are wildlife friendly and good for pollinators. It is understood that this is proposed to be sown in the amenity area in the east, and adjacent to the hedgerows in as many places as possible including along the northern boundary. It should also be noted that the gardens, which make up a lot of the site, can be planted with a lawn mix which is unlikely to be significantly lower value than the present improved grassland.
- 7.1.7 **Hedgehogs** - As hedgehogs have been recorded in the adjacent residential areas, a 'hedgehog highway' comprising a 13 x 13cm (5 x 5") square hole at the bottom of every fence or gravel board should be created. This will ensure they can continue to move through the area to forage. The hole is designed to be too small for most pets to get through.

- 7.1.8 **Dark zones** –As much of the site boundaries as possible must be kept dark, in accordance with the specifications above, in order to reduce the impact of the additional lighting from the scheme on bats (and other nocturnal animals) using the area. It is recommended that the hedgerow on southern site boundary at minimum should be kept below 0.2 lux at ground level.

7.2 Enhancement

- 7.2.1 Planning Policy Wales (PPW12, paragraph 6.4.5) confirms that planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species (not including non-native invasive species), locally or nationally and must work alongside nature and it must provide **a net benefit for biodiversity** and improve, or enable the improvement, of the resilience of ecosystems.
- 7.2.2 Based on the development proposals provided to Enfys Ecology at this stage in the design process, the following recommendations in relation to providing a net benefit for biodiversity as a result of the proposed development include:
- The amenity area will comprise meadow grassland with native trees, sheltered by hedgerows and with a woodland meadow mix for more shade tolerance around the outer perimeter under the trees and hedgerows. Ideally some scattered rocks and logs and woodpiles creating some habitat for reptiles, amphibians and other small animals, and deadwood invertebrates could also be created here, informed by the reptile survey.
 - Additional planting of native trees, there are currently none on site outside the hedgerows.
 - The wildflower grassland areas will also represent the addition of new habitats to the site, as diverse grasslands are not currently present.
 - The wildflower grassland areas will be managed as such, not intensively mown.
 - Additional features such as hedgehog hibernacula, bug hotels and bee towers could be installed.
 - Additional wildflower planting is proposed under all of the new hedgerows and trees.
- 7.2.4 New hedgerows should be planted in double rows to produce a wide, tall hedge corridor. A minimum of five woody species should be used per 30m in order to create a native species rich hedge.
- 7.2.5 In addition, the hedgerows have been identified as features which are likely to be used by nesting birds, hedgehogs, bats and other animals and should be replaced as part of the scheme design:
- Material from the removed hedgerow and clawdd should be relocated to the amenity area as additional refugia for reptiles, amphibians and other small animals, or incorporated into the newly created hedgerows (ideally both). This will retain it on site as habitat.
 - To enhance the site for bats it would also be possible to add a small number of boxes. At least 2 bat boxes could be incorporated into the site's layout. Bat boxes should be

erected onto or in-built into the new houses, or located along potential commuting and foraging routes such as along the eastern boundary. The positions of these will be agreed with an experienced ecologist and must be placed where there will be the least likely disturbance from light spill, windows doors and patios. Any boxes should be made from woodcrete or woodstone to ensure the longevity of the boxes. Bat boxes such as the Woodstone large multi-chamber, Schwegler 2F or the general-purpose wood concrete bat box should be used on the trees.

- To compensate for the loss of the hedgerow section which could be used by nesting birds, bird boxes could be incorporated into the site's layout. Bird boxes should include:
 - Boxes with a 32mm entrance (sparrow boxes)
 - Boxes for smaller birds (25-28mm entrance)
 - Boxes with 45mm opening (starling box)
- Swift boxes are particularly recommended; at least one such box should be installed on every building. Swift boxes should be as close to the apex of the gable end as possible, and grouped together (situated 60 – 100cm apart) as swifts prefer to nest in colonies; preferably not on a south facing elevations as the boxes can get too warm, unless white boxes (as recommended) are used so they do not absorb too much heat. Multicavity boxes may be used, or if single cavity boxes are used they should be erected in groups of four. The placement of these boxes should be on mostly non-south facing elevations avoiding passageways between buildings where there can be high winds; where they are not directly above any windows or doors that may be affected by bird droppings; and where they have at least 5m clearance between the nest box and nearest obstacle. Should bird droppings become an issue, or to prevent them becoming a potential issue, a droppings board can be erected under each of the swift boxes installed.

7.3 Ongoing Maintenance

- 7.3.1 It is vital that the habitat features, once created, are maintained and managed appropriately to preserve ecological features, and add biodiversity value. Appropriate agreements must be in place to secure the ongoing management of the site, with appropriate management practices in place (e.g. the wildflower grasslands must not be regularly mown, the hedgerows must be maintained in a wildlife friendly manner, and cut back only as appropriate), otherwise any gains made from the scheme will be lost over time.
- 7.3.2 Management should be carried out following advice from the landscape architect, or ecologist, ideally under a specifically designed habitat management plan.

8.0 Further Works

8.1 Further Works

8.1.1 Table 8.1 below provides a summary of ecological considerations associated with the proposed development. Note that “Pre-construction” means prior to the works phase beginning on site, whereas “Immediately prior to clearance” means during the works, but prior (ideally within 48 hrs) to that particular operation (e.g. tree felling, demolition) beginning.

Table 8.1: Summary of Other Ecological Considerations

Constraint	Work Stage	Species	Work	Location	When possible
Cotoneaster removal	All	Cotoneaster	Plan and remove	Southern boundary	All year, but best in early spring.
Removal of the chalet	Prior to any works	Bats	Bat survey of the chalet	Chalet, western garden area.	May-August
Removal of trees on southern boundary	Prior to any works	Bats	Bat survey of the trees.	Target Note 3 on fig. 5.2.	May-August (activity survey) / All year (tree climbing survey)
Any vegetation clearance in March – September	Immediately prior to clearance,	Nesting birds	Nesting bird checks (see Section 6.3.2).	Any scrub, tree, or tall vegetation clearance	March-September
Removal of hedgerow and clawdd sections	All	Reptiles	Removal supervised by an ecologist (see Section 6.3.2).	Hedgerows	Must not be done during possible hibernation (November-March)
Reptile Survey	Prior to any works	Reptiles	Reptile Survey	Site	April-September

8.2 Green Infrastructure Statement

8.2.1 Planning Policy Wales (PPW12, paragraph 6.2.12) states that a green infrastructure statement should be submitted with all planning applications. This statement should be proportionate to the scale and nature of the development proposed and will describe how green infrastructure has been incorporated into the proposal. This will need to be provided to support

a planning application, and should illustrate how the step-wise approach has been adopted in relation to the project proposals.

- 8.2.2 Further information regarding green infrastructure requirements within Gwynedd is given in Appendix A.

9.0 References

- CIEEM. (2017a). *Guidelines for Preliminary Ecological Appraisal*, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM. (2017b). *Guidelines for Ecological Report Writing*, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM. (2019). 'Advice Note on the Lifespan of Ecological Reports and Surveys'. Chartered Institute of Ecology and Environmental Management, Winchester.
- Collins, J. (ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edition). The Bat Conservation Trust, London.
- JNCC. (2010). *Handbook for Phase 1 Habitat Survey: a technique for environmental audit*. JNCC, Peterborough.
- ILP. (2023). *Bats and Artificial Lighting At Night*. Guidance Note GN08/23. Institute of Lighting Professionals & Bat Conservation Trust.
- ILP. (2021). 'Guidance Note 1 for the reduction of obtrusive light. Available: <https://theilp.org.uk/publication/guidance-note-1-for-the-reduction-of-obtrusive-light-2021/>
- Olds, L, and Chmurova, L. (2023) *Important Invertebrate Area Profile: Eryri*. Buglife. Available at https://cdn.buglife.org.uk/2025/02/Eryri-IIA_profile.pdf Accessed 07/07/2025.

APPENDIX A Legislation and Planning Policy

Amphibians

The most common species are protected from sale under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). These are as follows: common frog, *Rana temporaria*; common toad, *Bufo bufo*; palmate newt, *Lissotriton helveticus*; and, smooth / common newt, *Lissotriton vulgaris*. This legislation protects them from sale, or advertising / offering them for sale.

The UK's two rarest amphibians are protected under the Conservation of Habitats and Species Regulations 2017 (known as 'the Habitats Regulations'). This is because they have declined throughout Europe in recent decades. The Habitats Regulations lists the following amphibians as European Protected Species (EPS):

- Great crested (or Warty) newt, *Triturus cristatus*
- Natterjack toad, *Epidalea calamita*

Under the Habitats Regulations, it is an offence if you:

- Deliberately capture, injure or kill any wild animal of an EPS;
- Deliberately disturb wild animals of any such species;
- Deliberately take or destroy the eggs of such an animal; or,
- Damage or destroy a breeding site or resting place of such an animal.

Disturbance is defined as that which is likely:

- To impair their ability: to survive, to breed or reproduce, or to rear or nurture their young, or, in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- To affect significantly the local distribution or abundance of the species to which they belong.

There are other offences relating to the possession, transport, selling or exchange of a protected species.

Badgers

The Protection of Badgers Act 1992 fully protects badgers and their setts. Offences include:

- killing, injuring and taking (or attempting these);
- possession of a dead badger (or derivative);
- cruelly ill-treating a badger;
- damaging a badger sett or any part of it;
- destroying a badger sett;
- obstructing access to / entrance of a badger sett;
- causing a dog to enter a badger sett;
- disturbing a badger whilst occupying a sett.

Badgers are also listed on Schedule 6 of the Wildlife and Countryside Act 1981 (as amended), which prohibits certain methods of killing and capture.

Bats

All species of bat, their breeding sites and their resting places in England and Wales are protected through a 'dual' system of protection, under the England and Wales Habitats Regulations and Wildlife and Countryside Act (1981) as amended. Because two regimes give legal protection to bats, the implications of both regimes must be fully understood.

Regulation (Reg.) 43 of the England and Wales Habitats Regulations makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats (which includes any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate or to affect significantly the local distribution or abundance of the species to which they belong);
- damage or destroy a breeding site or resting place of a bat; or
- possess, control, transport, sell or exchange, or offer for sale or exchange, any live or dead bat or part of a bat or anything derived from a bat or any part of a bat

Under Section 9 of the W&CA (s.9(4)(b), 9(4)(c) and 9(5) only), it is an offence (in relation to bats) to:

- intentionally or recklessly disturb a bat while it is occupying a structure or place of shelter or protection;
- intentionally or recklessly obstruct access to any structure or place used by a bat for shelter or protection; or
- sell, offer or expose for sale, or have in their possession or transports for the purpose of sale, any live or dead bat or any part of, or anything derived from a bat (or be responsible for adverts suggesting the intention to do this).

Under both laws Natural Resources Wales are empowered to issue licences to carry out work to bat roosts for reasons of overriding public interest. It is not illegal to tend to a disabled bat pending recovery.

Birds

Under the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way (CROW) Act 2000, all wild birds, their nests and eggs are protected during the breeding season (typically March to August inclusive). This makes it an offence to:

- Intentionally kill, injure or take any wild bird.
- Take, damage or destroy the nest of a wild bird included in Schedule ZA1.
- Take, damage or destroy the nest of any wild bird while that nest is in use or being built.
- Take or destroy an egg of any wild bird.

Hedgehogs

Hedgehogs are listed under Section 7 of the Environment (Wales) Act 2016, therefore public bodies have a duty to conserve them in the exercise of their functions.

They are listed under Section 6 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence for them to be killed or taken by certain methods.

Reptiles

All British reptiles are protected from intentional killing, injuring and sale under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), including the four common species:

- Adder, *Vipera berus*
- Grass snake, *Natrix helvatica**
- Slow worm, *Anguis fragilis*
- Common lizard, *Zootoca vivipara*

* The native UK grass snake (as referred to as the barred grass snake) was originally listed under *Natrix natrix* in the W&CA 1981 (as amended); formerly considered to be a sub-species of *N. natrix* (*N. natrix helvatica*), the barred grass snake was recognised as a separate species in 2017 following genetic analysis of European *Natrix* populations.

This legislation aims to protect them from persecution and also from exploitation in the pet trade, and for which the following are offences:

- Intentional killing, injuring or taking.
- Intentionally or recklessly damaging / destroying a place of shelter / protection.
- Intentionally or recklessly disturbing an animal in its place of shelter / protection.
- Intentionally or recklessly obstructing access to its place of shelter / protection.
- Possession (live or dead, including derivatives), sale and offering for sale.

The UK's two rarest reptiles are afforded additional protection under the Conservation of Habitats and Species Regulations 2017 (known as 'the Habitats Regulations'). This is because they have declined throughout Europe in recent decades. The Habitats Regulations lists the following reptiles as European Protected Species (EPS):

- Sand lizard, *Lacerta agilis*
- Smooth snake, *Coronella austriaca*

Under the Habitats Regulations, it is an offence if you:

- Deliberately capture, injure or kill any wild animal of an EPS;
- Deliberately disturb wild animals of any such species;
- Deliberately take or destroy the eggs of such an animal; or,
- Damage or destroy a breeding site or resting place of such an animal.

Disturbance is defined as that which is likely:

- To impair their ability: to survive, to breed or reproduce, or to rear or nurture their young, or, in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- To affect significantly the local distribution or abundance of the species to which they belong.

There are other offences relating to the possession, transport, selling or exchange of a protected species.

- Intentionally or recklessly damaging/destroying a place of shelter/protection [Section 9(4)(a)].

- Intentionally or recklessly disturbing any water vole while it is occupying a structure or place which it uses for shelter or protection [Section 9(4)(b)].
- Intentionally or recklessly obstructing access to any structure or place used by a water vole for shelter or protection [Section 9(4)(c)].
- Selling, offering or exposing for sale any water vole [Section 9(5)].

Protected Plants

The Wildlife and Countryside Act 1981 (as amended) makes it illegal to uproot any wild plant without the permission of the landowner. In addition, plants which are either rare or vulnerable to exploitation are listed on Schedule 8, for which it is an offence to:

- Intentionally pick, uproot or destroy.
- Sell, offer or expose for sale.

Invasive Non-Native Species

Invasive non-native species are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), for which the following are offences:

- Release into the wild, or to allow the escape of, any animal which is not ordinarily resident, or a regular visitor to, Great Britain in a wild state, or which is included in Part 1, Schedule 9.
- Plant in the wild, or otherwise cause to grow there, any plant included in Part 2, Schedule 9.

National Planning Policy

National Planning Policy in Wales is set out in Planning Policy Wales, Edition 12, issued in February 2024. This document sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. PPW, the TANs, MTANs and policy clarification letters comprise national planning policy.

PPW Edition 12 Section 6.4 states that “*biodiversity underpins the structure and functioning of ecosystems*” and identifies that the “*planning system has a key role to play in helping to reverse the decline in biodiversity and increase the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement*”. The broad framework for implementing the Environment (Wales) Act 2016 Section 6 Duty, securing a net benefit for biodiversity and building resilience through the planning system includes addressing all of the following attributes: diversity, extent, condition, connectivity, and adaptability to change.

Green infrastructure (GI) is defined in Planning Policy for Wales (PPW) Edition 12 as “*the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect places*”. Green infrastructure can function at a range of different scales, from entire ecosystems to street trees and is capable of providing several functions at the same time and as a result offers multiple benefits, for social, economic and cultural as well as environmental resilience.

Development proposals should take biodiversity and green infrastructure (GI) into consideration in order to avoid negative impacts on habitats and species, and seek ways to maintain and enhance

biodiversity. Impacts on habitats and species should be treated in a step-wise manner (PPW 12, paragraph 6.4.15), by seeking to:

- **Avoid** damage to biodiversity in its widest sense by maintaining the largest possible area of existing habitat supporting biodiversity and functioning ecosystems, particularly Section 7 habitats and species where present, through careful development design and consideration of long-term maintenance and management and ensuring that retained habitats continue to be well connected to adjacent habitats to provide connectivity for key species.
- **Mitigate or restore** by identifying measures to address the specific negative effects by repairing damaged habitats and disturbed species. The measures should seek to restore in excess of like for like, accounting for disturbance and time lags for the recovery of habitat and species, and in every case, mitigation or restoration measures should seek to build ecosystem resilience within the site and where possible the wider area.
- As a last resort off-site **compensation** for unavoidable damage must be provided. This must be of significant magnitude to fully compensate for any loss.
- All development must **deliver a net benefit** for biodiversity and ecosystem resilience from the baseline state (proportionate to the scale and nature of the development proposed).

PPW12 also sets out the national policy requirements in relation to planning permissions where protected species, trees, hedgerows and woodlands and *irreplaceable natural resources* have the potential to be impacted.

Local Planning Policy

The Gwynedd Council and Isle of Anglesey County Council Joint Local Development Plan (LDP) 2011 – 2026 and Supplementary Planning Guidance provide relevant information associated with biodiversity and green infrastructure as follows:

- GC & IACC JLPD 2011-2026 PS19: Conserving and Where Appropriate Enhancing the Natural Environment
- GC & IACC JLPD 2011-2026 Strategic Policy PCYFF 4: Design and Landscaping
- GC & IACC JLPD 2011-2026 Policy AMG 5: Local Biodiversity Conservation Policy
- GC & IACC JLPD 2011-2026 Policy AMG 6: Protecting Sites of Regional or Local Importance
- GC & IACC SPG: Landscape Character
- GC & IACC SPG: Wildlife Sites
- GC & IACC SPG: Open Spaces in New Residential Developments

APPENDIX B Desk Study

Desk Study Data included as separate Document.

APPENDIX C Plant Species List

This list is not exhaustive but refers to species observed during the site visit. Mosses (except indicators of bog habitat if present), lichens, algae and other lower plants and fungi were not identified. No protected or notably rare plant species were found.

Table C.1: Plant Species List

English Name	Scientific Name
Blackthorn	<i>Prunus spinosa</i>
Bramble	<i>Rubus fruticosus</i> agg.
Broad-leaved dock	<i>Rumex obtusifolius</i>
Broad-leaved willowherb	<i>Epilobium montanum</i>
Brooklime	<i>Veronica beccabunga</i>
Cocksfoot	<i>Dactylis glomerata</i>
Common cat's-ear	<i>Hypochaeris radicata</i>
Common daisy	<i>Bellis perennis</i>
Common nettle	<i>Urtica dioica</i>
Cotoneaster species	<i>Cotoneaster</i> sp.
Creeping buttercup	<i>Ranunculus repens</i>
Creeping thistle	<i>Cirsium arvense</i>
Dog rose	<i>Rosa canina</i>
Elder	<i>Sambucus nigra</i>
European privet	<i>Ligustrum vulgare</i>
Field rose	<i>Rosa arvensis</i>
Foxglove	<i>Digitalis purpurea</i>
Gorse	<i>Ulex europaeus</i>
Hawkweed	<i>Hieracium</i> sp.
Hawthorn	<i>Crataegus monogyna</i>
Hedge bindweed	<i>Calystegia sepium</i>
Hogweed	<i>Heracleum sphondylium</i>
Ivy	<i>Hedera helix</i>
Ivy-leaved toadflax	<i>Cymbalaria muralis</i>
Cypress	<i>Cupressus</i> Species
Male fern	<i>Dryopteris filix-mas</i>
Moss	(various species, unspecified)
Nipplewort	<i>Lapsana communis</i>
Oak	<i>Quercus petraea</i>
Perennial ryegrass	<i>Lolium perenne</i>
Polypody	<i>Polypodium vulgare</i>
Red campion	<i>Silene dioica</i>
Red fescue	<i>Festuca rubra</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Rosebay willowherb	<i>Chamaenerion angustifolium</i>
Smooth-stalked meadow grass	<i>Poa pratensis</i>

English Name	Scientific Name
Soft rush	<i>Juncus effusus</i>
Tutsan	<i>Hypericum androsaemum</i>
Tufted vetch	<i>Vicia cracca</i>
Wall pennywort	<i>Umbilicus rupestris</i>
Willow	<i>Salix</i> sp.
Yorkshire fog	<i>Holcus lanatus</i>

APPENDIX D Bats and Lighting Design Recommendations

To assist with the decision-making process in relation to bats and lighting for development projects, the Institution of Lighting Professionals (2023) suggest that the following are considered when choosing luminaires:

- All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component.
- Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone et al, 2012).
- Internal luminaires can be recessed (as opposed to using a pendant fitting) where installed in proximity to windows to reduce glare and light spill.
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.
- Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - see ILP (2021) GN01.
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting should be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate.
- Use of a Central Management System (CMS) with additional web-enabled devices to light on demand. Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

ILP (2023) provide guidance associated with the layout (location, orientation and height) of newly built structures and hard standing, as the design can have a considerable impact on light spill:

- Key or Supporting Habitat is often located alongside, or to the rear of buildings, on new developments. In this case, the removal or reduction of windows can be the most effective way to permanently limit light spill, potentially alongside the internal reconfiguration of the building, to ensure high-use spaces are not as impacted by loss of natural light.
- It may be possible to include Key or Supporting Habitat into unlit public open space such as parks. However, schemes should avoid including Key or Supporting Habitats in residential gardens, as uncontrolled and inappropriate lighting may be introduced by residents following occupation.
- It is often considered better for a residential scheme to specify good quality downward-directional external light fittings for security, and/or at the front entrance, on short PIR timers, rather than risk the imposition of poor quality and poorly controlled lighting at a later date.
- Buildings, walls and hard landscaping may be sited and designed so as to block light spill from reaching habitats and features.
- Paved surfaces should not be located within Key Habitat or buffer zones, unless they form part of unlit public open space.
- Taller buildings may be best located toward the centre of the site, or sufficiently set back from Key Habitats, to minimise the effect of their light spill.
- Column mounted luminaires can be located so that the rear shields are adjacent to habitats, or narrow optics selected that direct light into the task area where needed.
- As planting may be removed, die back or inadequately replaced over time, it should never be relied on as the sole means of attenuating light spill.

ILP. (2023). *Bats and Artificial Lighting At Night*. Guidance Note GN08/23. Institute of Lighting Professionals & Bat Conservation Trust.

APPENDIX E General Biosecurity Measures

Biosecurity means taking measures to ensure that good practices are in place to minimise the risk of importing and spreading invasive non-native species (INNS), pests and infectious disease. As non-native species or diseases could be transmitted in any water or material, a good biosecurity routine is essential, even if invasive non-native species are not apparent.

General good-practice biosecurity measures include:

- A toolbox talk detailing the general risks of invasive non-native species (INNS) relevant to the site and the project should be delivered to all workers, showing the various life stages and how to recognise these plants and animals.
- A cleaning station should be set up at the site exits including facilities to wash boots and vehicles.
- **All** footwear of staff leaving site (for **any** reason and no matter for how short a time) should be cleaned (i.e., visually free of soil and debris) before leaving site.
- Soil and vegetation should be washed off with clean water (and brushes). Water (which should not be contaminated with any disinfectant or other pollutants) should then be disposed of by pouring on site to soak away. No water should be disposed of directly into a watercourse.
- The wheels or tracks (and any other part which has come into contact with the soil) of all vehicles which have entered the area must be thoroughly washed and be free of soil and debris before leaving the site.
- No one should remove any soil or vegetation from the working area for any reason.

It may be necessary to produce a site-specific and project-specific Biosecurity Risk Assessment to support the construction-phase of the project, once detailed design works have been completed and timings and construction methods are known. This Biosecurity Risk Assessment should identify the specific biosecurity risks associated with the works and detail operational procedures to minimise the risk of spreading invasive non-native species (INNS) and other biosecurity risks.