



Preliminary Ecological Appraisal of INCLINE FIELDS on Behalf of Williams Homes Ltd

Date	Author	Project Number	Approved by	Version	Comments
9/12/2024	Anne Butler	4756	Tim Yardley	1	

Report Reference: EE.4756.2024.AB

Enquiry contact: 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	Incline Fields, Llandegai Road, Bangor, LL57 4HP	OS Grid Reference	SH 593 719
Surveyors	Anne Butler	Survey Date	27-11-2024
Type of Survey	Preliminary Ecological Appraisal		
Summary of Proposed Work	Housing estate and associated infrastructure		
Designated Sites Affected	The risk of any potential impact is low and can be further limited by pollution control measures.		
Habitats Affected	Semi-improved and improved grassland is likely to be lost to the development. A proportion of the scrub will be lost. Any impact to broadleaved woodland, hedges and scattered trees should be avoided.		
Species Affected	Impacts likely to nesting birds and bats without mitigation. Potential impacts to hedgehogs, reptiles, red squirrel.		
Survey Conclusions	<p>The development will result in net enhancement to biodiversity if the avoidance, mitigation and enhancement measures are followed.</p> <ul style="list-style-type: none"> • The hedges/field boundaries are likely to be important for several species of bats as flightlines/foraging routes. • Birds are highly likely to nest on the site. • Reptiles may use the habitats on the site. • No evidence of badgers was found. 		
Further Surveys Required	No further surveys required aside from pre-construction surveys.		
Avoidance Requirements	Impacts on woodland or hedges should be avoided. No removal of woodland or large trees is understood to be proposed.		
Mitigation / Restoration Requirements	Lighting guidance has been given with respect to bats. Avoidance and mitigation measures are provided for birds, bats, red squirrels, reptiles, hedgehogs, badgers and otters.		
Compensation Requirements	Compensatory wildflower areas and tree and shrub planting required.		
Proposed Enhancements	Proposed enhancement measures include a wildlife-friendly pond, bird and bat boxes and hedgehog access measures.		

Contents

Executive Summary.....	2
Contents	2
1.0 Introduction	2
2.0 Site Description.....	2
3.0 Methodology	2
4.0 Results.....	2
5.0 Discussion	2
6.0 Avoidance, Mitigation and Restoration	2
7.0 Compensation and Enhancement.....	2
8.0 Further Works	2
9.0 References	2
APPENDIX A Legislation and Planning Policy	2
APPENDIX B Desk Study	2
APPENDIX C Plant Species List.....	2
APPENDIX E General Biosecurity Measures	2

1.0 Introduction

1.1 Project Introduction

- 1.1.1 Enfys Ecology were commissioned by Williams Homes to undertake a Preliminary Ecological Appraisal (PEA) of an area of land at Incline Fields, Llandegai Road, Bangor, LL57 4HP.
- 1.1.2 The proposed works involve the erection of houses and associated infrastructure.
- 1.1.3 The site is a field of approximately 2.3 hectares to the east of Bangor, Gwynedd. It is currently used as pasture.
- 1.1.4 The primary objectives of a Preliminary Ecological Appraisal Report (CIEEM, 2017a) 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.
- 1.1.5 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.
- 1.1.6 This report has been produced in accordance with CIEEM (2017a) 'Guidelines for Preliminary Ecological Appraisal' and CIEEM (2017b) 'Guidelines for Ecological Report Writing'.
- 1.1.7 This report has been produced by Anne Butler, MSc Ecology. Anne has worked in ecology and biodiversity since 1998, as a Conservation Officer and Biodiversity Officer. She is an experienced Phase I surveyor and has been providing Preliminary Ecological Appraisals for Enfys Ecology for two years. She also has experience of protected species surveys for bats, birds, water voles, reptiles, dormice and badgers.
- 1.1.8 The survey work to inform this report was carried out in November 2024. 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).
- 1.1.9 Relevant legislation information is included in Appendix A.

1.2 Project Proposals

- 1.2.1 The reports/drawings provided by the client at the time of production of this preliminary ecological appraisal are detailed in Table 1.1.
- 1.2.2 The site was previously surveyed by CES Ecology in June 2020, who carried out a full PEA with a similar brief to the present survey. This survey was available to the present surveyors. Where necessary, this is referred to in the text as 'the previous survey.'

Table 1.1: Project Information Sources

Information	Organisation	Reference and Date
Proposed Masterplan	Williams Homes	C1124 – drawing 004, revision D. 12/12/22
Bat Activity Surveys of Incline Fields	Enfys Ecology	EE.4756.24.DA. 13/11/24
Planning – location plan	Williams Homes	C1124 002. 6/12/22
Land off Llandegai Road, Bangor, Preliminary Ecological Appraisal	CES Ecology	June 2020

2.0 Site Description

2.1 Survey Area

- 2.1.1 The site is a large improved field with a thin strip of semi-improved grassland on the western side. There is a hard-surfaced track running from west to east across the field. The site was accessed from Llandegai Road, via the cattle grid on the track. A hedgerow runs along the western boundary. The eastern boundary is a tall stone wall which is presumably the boundary of Penrhyn Castle Estate. There is scrub and some mature trees along the eastern edges, with a small area of woodland at the northern end (most of which is outside the site). The west of the site is adjacent to Llandegai Road, fields and smaller areas of woodland lie to the east of the site and also to the immediate south and west of the site. Two hundred metres west of the site is Maesgeirchen housing estate, Bangor Mountain, St Deiniol Golf Course and the town of Bangor. Beyond the fields and woodland south of the site is Llandegai Industrial estate, to the immediate north are woodlands and housing developments. The survey area is shown in Figure 2.1 below.

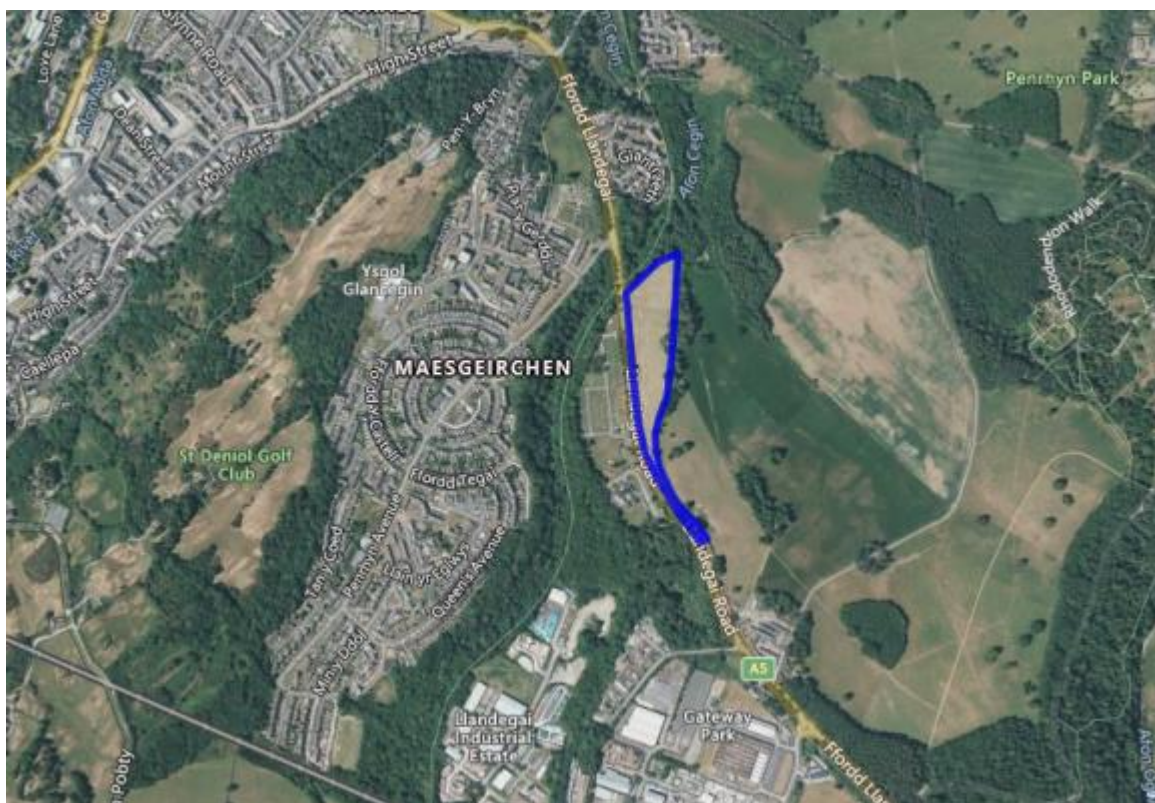


Figure 2.1: The survey area (blue outline)
Base image © Microsoft Corporation 2024

2.2 Wider Area - Connectivity and Green Infrastructure

- 2.2.1 The survey area is connected to large areas of fields to the east and there is immediate connectivity to woodland on all the other sides of the survey field. The wooded river corridor

of the Afon Cegin runs approximately 50m from the north-western corner of the site. The Menai Strait is 550m north of the site.

- 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.
- 2.2.3 The site is comprised entirely of green infrastructure and under current planning guidance. Although the field itself was a very common habitat without much structural diversity, it is still part of the green infrastructure of the area. Structural and species diversity was provided by the semi-improved grassland, scrub, stone wall and trees along the edges. Apart from the road adjacent to the western edge of the site, there is good connectivity between the habitats on the site with other woodland and grassland outside the site. The wider area is shown in Figure 2.2 below.

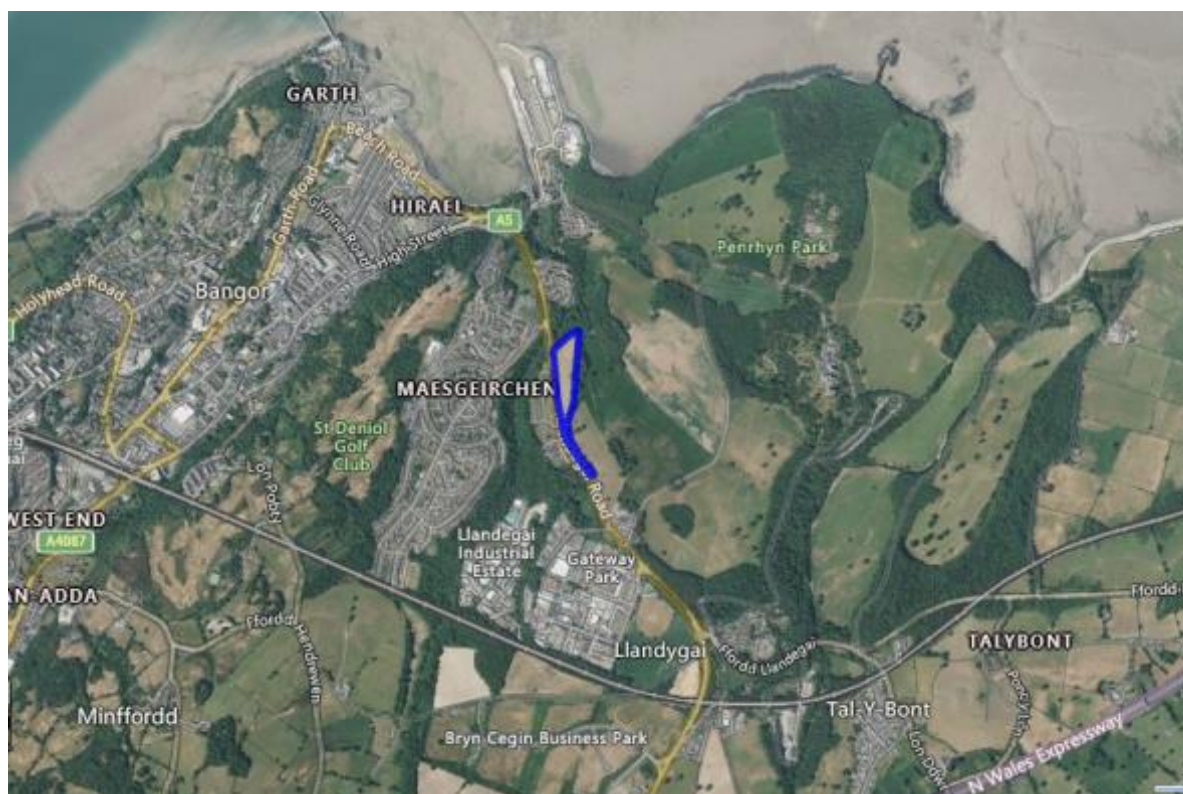


Figure 2.2: The site (blue outline) and the wider surrounding area

Base image © Microsoft Corporation 2024

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 26th November 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.
- 3.1.2 The desk study used a 1km search radii for this project.

3.2 Field Survey

- 3.2.1 The field survey was conducted on 27th November 2024 by Anne Butler, a suitably experienced professional ecologist.
- 3.2.2 The weather conditions during the survey were dry, clear, calm and cool.
- 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.

3.3 Limitations

- 3.3.1 Some parts of the dense bramble scrub were not completely accessible to search for signs of badger however the edges were surveyed for mammal tracks and this is not considered to have affected the results of the badger survey.
- 3.3.2 The habitat map in Section 4 should not be taken as definitive with respect to the exact boundaries of some habitats in the dense areas, but gives an accurate impression of the habitats represented at the site.
- 3.3.3 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.

- 3.3.4 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.
- 3.3.5 The survey was undertaken after the end of the main flowering period, and therefore after the advisable survey period for a PEA. Some flowering plants present may not have been visible and so will not have been recorded. It is possible that the diversity of the semi-improved grassland may have been under-estimated. However, due to the lack of presence of sufficient key indicator species that would have referred it to the category of principal habitat of importance, this is unlikely to have significantly affected the recommendations of the report. Also, as the overall area of this habitat was very small and opportunities will be taken to recreate semi-improved grassland habitat.

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 – Statutory Sites

4.1.1 There were 4 statutory designated sites within 1km of the survey area, see Table 4.1 below.

Table 4.1: Designated Sites within 1km of the Site

Name	Designation	Approx. distance from site (km)	Reason for designation
Menai Strait and Conwy Bay	Special Area of Conservation (SAC)	585m	Sandbanks, sandflats, mudflats and reefs, large shallow inlets and bays and sea caves.
Traeth Lafan	Site of Special Scientific Interest (SSSI)	585m	Marine habitats between low and high tide, overwintering oystercatcher, curlew and great crested grebe during their autumn moult.
Lafan Sands	Special Protection Area (SPA)	585m	Over-wintering oystercatcher
Traeth Lafan	Local Nature Reserve (LNR)	585m	Sand and mudflats and seabirds including moulting great crested grebes, oystercatchers, red breasted mergansers and golden eye.

4.2 Desk Study – Non-statutory and notable sites

4.1.2 There were 12 non-statutory designated wildlife sites within 1km of the survey area, as shown in Figure 4.2 below. All of the sites within 300m of the survey area (site 1, 5, 6, 11) are special for their woodland, amongst other features. Of the sites adjacent to the survey area, salmon, otter, red squirrel and bats were also features.

4.1.3 The site labelled as Site 1 in Figure 4.2, Coed Cegin Candidate Wildlife Site, includes the broadleaved woodland in the north-eastern corner of the survey area. Site 11 (Llandegai Wildlife Site), designated for its broadleaved woodland amongst other features, in places forms a continuous canopy with hedge and trees on the survey area despite the intervening road.



Figure 4.2 Wildlife sites within 1km of the survey area
 (Image from Cofnod, Base image © Microsoft Corporation 2024)

- 4.1.4 There were many areas of ancient woodland within 1km of the survey area, as can be seen in figure 4.3, below. The pale green areas indicate restored ancient woodland and the lime green indicates plantations on ancient woodland sites. The mid green areas on the northern coastal edge and south-eastern edge of the 1km search area are ancient semi-natural woodland. One area of restored ancient woodland is close to the northern border of the survey area, and includes the small areas of broadleaved woodland inside the survey area. An area of plantation on ancient woodland site is close to the northern tip of the site.



**Figure 4.3 Areas of ancient woodland within 1km of the survey area.
(Image from Cofnod, Base image © Microsoft Corporation 2024)**

4.2 Desk Study – Species Records

- 4.2.1 Cofnod hold 406 individual records of species that are legally protected, listed on Section 7 of the Environment (Wales) Act or UKBAP priority species within 1km of the site from the previous 20 years.
- 4.2.2 The results of the desk study for protected fauna relevant to the site are detailed in Table 4.4, Section 4.7. 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 There are no records of notable flora from within the study site.
- 4.2.4 There are no records of invasive non-native species from within the site.

4.3 Phase 1 Habitat Survey

4.3.1 The following Phase 1 Habitat and feature types were recorded within or immediately adjacent to the site:

A1.1.1	Broadleaved woodland – semi-natural
A2.1	Dense scrub
A3.1	Scattered trees
B2.2	Neutral grassland – semi-improved
B4	Improved grassland
J5	Hardstanding
J2.1.1	Intact hedge – native species-rich
J2.1.2	Intact hedge – species-poor
J2.4	Fence
J2.5	Wall
J2.6	Dry ditch

4.3.2 A Phase 1 Habitat map with target notes is provided in Figure 4.4 below. Descriptions of the habitats are provided in Table 4.2 with information associated with target notes provided in Table 4.3. Where relevant, photographs are included with the text.

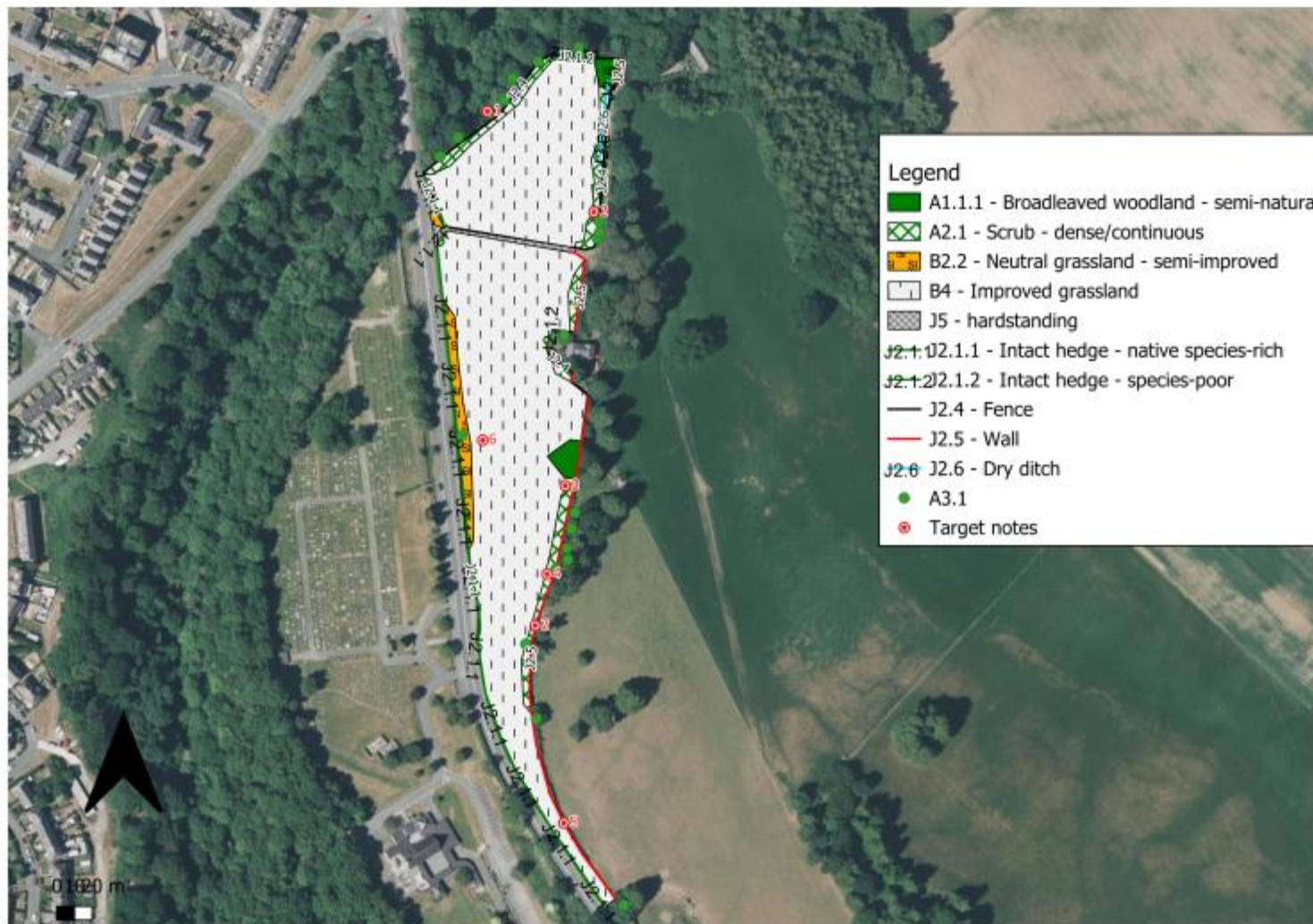




Figure 4.4: Phase 1 Habitat Survey Map
 Base image © Microsoft Corporation 2024

Table 4.2: Habitat Descriptions

Habitat Description	Photo	
	Broadleaved woodland – semi-natural	
<p>A small area of broadleaved trees in a sunken corner of the field. The ground appeared to have been trampled and was mostly bare with very little vegetation aside from a few small ferns such as hart’s tongue fern and broad buckler fern. Some bramble, herb robert and ground ivy was also present. Woody species included grey willow, elm, holly and ash.</p>		
	Mature tree in the woodland	Bare Ground
		
	From the field	

<i>Dense scrub</i>	
<p>Bramble-dominated scrub beside the boundaries. Other species included cock's-foot grass, foxglove, hogweed and common nettles.</p>	
	<p>Bramble scrub. Note also poaching by livestock in this narrow part of the field at the southern end.</p>
	
	<p>Bramble scrub beside the wall on the eastern boundary</p>
	
	<p>Dense bramble scrub to the south house</p>

<i>Scattered trees</i>		
<p>There were mature broadleaved trees in many places along the boundaries. Most were overhanging from the adjacent land. Trees on the north-western corner of the site were overhanging from the adjacent ancient woodland. Species were mainly sycamore with other species such as sessile oak, ash and elm.</p>		 <p>Trees from the adjacent ancient woodland along northern boundary</p>
<p>A thin strip of grassland of up to around 4m wide on the steep bank running down to the hedge. It was approximately 750m² in area. The vegetation was longer here than in the flatter part of the field with tussocks. The survey was carried out outside the recommended grassland survey period so an accurate assessment was not possible. Of the grasses, cock's-foot grass was dominant with common bent, crested dog's-tail and occasional red fescue. Creeping buttercup and ribwort plantain were abundant. Soft rush was common in some parts. Other species included yarrow, black knapweed, broad-leaved dock, common cat's ear, lesser celandine, tormentil.</p>	 <p>Photo taken of the bank of semi-improved grassland looking northwards</p>	 <p>Photo looking southwards along the bank.</p>
<i>Neutral grassland – semi-improved</i>		

<i>Improved grassland</i>		
<p>The majority of the field was dominated by species commonly found in improved grassland. Yorkshire fog was dominant as was creeping buttercup and ribwort plantain. Perennial ryegrass, cock's-foot grass, white clover were abundant.</p> <p>Other species were quite limited but included hogweed, broad-leaved dock, dandelion, meadow buttercup and common bent. Chicory was frequently noted in the sward.</p>		
	<p>Photo of improved grassland on southern half of field facing south-east</p>	<p>Photo of northern part of field, taken from the track</p>
<i>Intact hedge – native species-rich</i>		
<p>The long hedge running along the western boundary of the site had been recently cut on the pavement side. It was approximately two metres wide or more.</p> <p>The dominant species were sycamore and hawthorn but elder, ash, elm, beech and dog rose were also noted.</p> <p>Other species included bramble, common nettle, hogweed and soft rush.</p>		
	<p>Photo of hedge on western boundary taken from pavement</p>	<p>Photo taken from the survey field</p>







<i>Intact hedge – species poor</i>	
<p>Privet hedge forming part of the boundary with Incline Cottage.</p> <p>The holly hedge at the north of the site may well have comprised of holly from the adjacent woodland but had been shaped into a hedge.</p>	<div>  <p>Privet hedge</p> </div> <div>  <p>Holly hedge</p> </div>
<i>Wall</i>	
<p>The stone wall running along the eastern boundary was 2 to 3 metres high. It had mortar between the stones with gaps. Ivy grew on the wall in places. The slate wall had no mortar and bigger gaps.</p>	<div>  <p>Photo showing the dense ivy growing on some of the wall</p> </div> <div>  <p>Stone wall to the immediate south of the property on the eastern side of the site</p> </div>
<i>Dry ditch</i>	
<p>A dry ditch running beside the boundary at the north-east of the site.</p>	

Table 4.3: Target Note Descriptions

Target Note	Description	
1	Rhododendron immediately adjacent to the site in the neighbouring woodland.	
2	There were piles of stones and rubble from broken parts of the wall in at least two locations.	 <p data-bbox="922 1055 1423 1115">Photo showing one of the piles of stones beside the wall</p>
3	Loose corrugated iron and stones	 <p data-bbox="922 1825 1118 1854">Corrugated iron</p>

Target Note	Description	
4	Tree trunk lying on the ground beside the wall	 <p>Tree trunk lying on the ground</p>
5	Cotoneaster and butterfly bush (<i>buddleia</i>) growing on the stone wall.	 <p>Photo showing cotoneaster on top of the wall</p>

Target Note	Description	
6	Water trough in field	 <p>Water trough</p>

4.4 Flora

- 4.4.1 Floral diversity of the site was low on average, due to the majority of the site being species-poor improved grassland. The thin strip of semi-improved neutral grassland contained higher diversity but the bramble dominated scrub was not particularly diverse. The hedges and trees added to the diversity of the site.
- 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 Appendix C contains a list of plant species recorded during the survey.

4.5 Invasive Non-Native Species

- 4.5.1 Rhododendron was seen in the woodland adjacent to the site (but not in the site) at target note 1 on Figure 4.4. Cotoneaster was growing on the wall at target note 5.

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 from Cofnod 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 from the past 20 years	Further Species Consideration Required?
Great crested newts <i>Triturus cristatus</i> (GCN)	<p>The site does not contain standing water therefore there is no breeding habitat for GCN within the survey area.</p> <p>Great crested newts are very unlikely to breed on site due to the lack of standing water. From aerial imagery, a pond is present 115m to the south east of the site, however due to the barrier of the high stone wall it is thought unlikely that any GCN that may be breeding in the pond would climb the stone wall to use the site for foraging or hibernation. There is some suitable habitat for GCN foraging and hibernation in the scrub, woodland and wall, however, due to the lack of a breeding habitat on or near to the site, the absence of any GCN records within the area, and the low likelihood of GCN presence in Gwynedd (French GCA, Wilkinson JW, Fletcher DH, and Arnell, 2014) it is concluded that GCN presence on the site is unlikely.</p>	There were no records of GCN within a 1km radius of the site.	no
Badger <i>Meles meles</i>	<p>No evidence of badgers was seen.</p> <p>The area of broadleaved woodland would be suitable for a badger sett as it has steep banks, although very little scrub cover, and is adjacent to more extensive areas of woodland outside the site. Some of the wider areas of scrub would be suitable for badger setts although on flat ground, and possibly the grassy bank would be suitable although the location beside a busy road makes it less likely. The site is also suitable for badger foraging.</p> <p>As no evidence was seen, including trails, it is not thought likely that a sett was present, however, it cannot be ruled out that badgers may move into the area prior to work commencing.</p>	Signs of badger have been recorded 250m to the north of the site and also to the south and south-east of the site.	A walkover of the site will be required prior to work commencing.

Table 4.4: Results of Protected and Notable Species Assessment

Species	Suitability of Habitat	Desk Study Records from the past 20 years	Further Species Consideration Required?
Bats	<p>The site contains high quality foraging and commuting habitat for bats in the form of hedgerows and woodland with connectivity to the wider landscape, particularly the adjacent woodland and river corridor.</p> <p>Many mature trees overhang or are within the site which may be suitable for bat roosts.</p>	<p>Soprano and common pipistrelle have been recorded emerging from the listed building named Incline Cottage which is adjacent to the site.</p> <p>A bat activity report has recently been completed, entitled Bat activity surveys of incline fields, dated 13th November 2024, by Enfys Ecology. During these surveys 6 species of bat were detected, including lesser horseshoe bat.</p> <p>The Cofnod database held 30 records of 10 different species of bats recorded over the past 20 years from within 1km of the site.</p>	<p>Yes</p> <p>Any mature trees that will be impacted by the work will require a bat roost survey.</p> <p>Avoidance, mitigation and enhancement measures will be required.</p>
Birds	<p>The woodland, scattered trees, bramble scrub, hedgerows and walls are all suitable for nesting birds.</p> <p>Blackbirds and robins were seen foraging on the site during this survey and goldfinch, song thrush and great tit were recorded during a previous survey (CES Ecology 2020).</p> <p>Ground-nesting birds are considered less likely. Although skylark, a ground-nesting bird has been recorded 140m away, the improved grassland is considered unsuitable for skylark and the location of the unimproved grassland, on a thin, steep bank adjacent to the pavement and busy road, is considered unsuitable.</p>	<p>63 species of birds have been recorded within 1km of the site.</p> <p>Swift have been recorded flying over the site and red-breasted merganser have been recorded adjacent to the site on the Afon Cegin. Skylark have been recorded approximately 140m away.</p> <p>A single goldfinch, song thrush and great tit) have also been seen or heard on the site (CES Ecology 2020).</p> <p>Goshawk, a Schedule I species have been recorded 787m away.</p>	<p>Yes</p> <p>See discussion, mitigation and enhancement sections.</p>

Table 4.4: Results of Protected and Notable Species Assessment

Species	Suitability of Habitat	Desk Study Records from the past 20 years	Further Species Consideration Required?
Dormice <i>Muscardinus avellanarius</i>	The hedgerow would be suitable for dormice foraging and breeding.	No dormice have been recorded within 1km of the site. There are no known records within 5km of the site.	See Discussion Section
Hedgehog <i>Erinaceus europaeus</i>	The hedgerows and scrub are suitable for hedgehog foraging and hibernation.	The nearest hedgehog record is 621m from the site.	Yes
Otter <i>Lutra lutra</i>	Adjacent to the site is the wooded river corridor of the Afon Cegin, which is known to be used by otters. Therefore, it is possible that otters use the broadleaved woodland on the site for lying up. There is no habitat suitable for otter holts and no evidence of holts was found during the survey.	Signs of otter have been found on the Afon Cegin only 20m north of the site and in two other locations.	Yes. Walkover survey for otters prior to work commencing.
Red squirrel <i>Sciurus vulgaris</i>	It is possible that red squirrel breed or forage in the trees or woodland on or adjacent to the site.	A red squirrel has been recorded 170m south-west of the site.	Yes
Reptiles	The wall and adjacent scrub, grassland, stones and corrugated iron are suitable for basking, foraging and hibernating reptiles.	Slow worms have been recorded within 1km of the site, the nearest record is 288m west of the site. A common lizard has been recorded 800m from the site on Bangor Mountain.	Yes
Water vole <i>Arvicola amphibius</i>	There are no watercourses on the site therefore there is no suitable habitat for water voles.	There are no records of water voles within 1km of the site.	No

5.0 Discussion

5.1 Proposed Works

- 5.1.1 The proposed works to the site include the erection of a housing estate and associated infrastructure, including roads, pumping station, play area and attenuation area. Figure 5.1 below shows the plans for the site at the time of writing.



Figure 5.1: Plan of the Proposed Works
 Proposed Master Plan, drawing 4, rev D, dated 12/12/22
 © Ainsley Common Architects

5.2 Impacts on Designated and Notable Sites

- 5.2.1 The proposed works have a low but not negligible risk of impacting the following statutory designated nature conservation sites: Menai Strait and Conwy Bay Special Area of Conservation, Lavan Sands Special Protection Area (SPA), Traeth Lafan Site of Special Scientific Interest (SSSI) and Traeth Lafan Local Nature Reserve (LNR). The mechanism would be via a pollution event that affected the Afon Cegin which is approximately 20m away and thus the designated sites. Strict pollution prevention control measures must be followed. See the Avoidance Section.

5.2.2 The proposed works have the potential to impact on the following non-statutory statutory designated nature conservation sites: Coed Cegin candidate Wildlife Site (ref. 1163) and Llandegai Estate Wildlife Site (ref. 0817). Coed Cegin would be directly impacted by removal of any trees on the northern boundary or within the broadleaved woodland on the north-eastern corner of the survey area. Llandegai Estate Wildlife Site would be indirectly affected by the removal of any trees or branches in the survey area forming a continuous canopy with the wildlife site. This could potentially impact red squirrel that are one of the site's features. See the Avoidance Section for specific measures that will be taken to minimise the risk of impacts on these sites. Other Wildlife Sites which are not adjacent to the survey area are unlikely to be directly impacted.

5.2.3 The works could have a small impact on the ancient woodland to the north of the survey site if the area that is noted as ancient woodland were to be impacted. It should be noted that the proposed scheme retains all wooded areas however.

5.3 Habitats

5.3.1 Table 5.1 provides information with respect to the habitats which were recorded on site and states whether these habitats are listed as a 'habitat of principal importance' under Environment (Wales) Act 2016. The potential impact of the proposed project on the habitat is also discussed.

Table 5.1 Impact on habitat

Habitat Recorded	Habitat of Principal Importance (HPI)?*	Brief Discussion
Broadleaved woodland – semi-natural	yes	All woodlands are retained intact. The current plans suggest that the creation of an access road would come close to this woodland. Any impacts should be avoided, tree protection fencing used and the area should be enhanced by protection from grazing or trampling. All woodlands are retained intact.
Dense scrub	-	A good habitat for many species so replacement habitat will be required if removed. Scrub may need to be retained in order to provide habitat connectivity.
Scattered trees	-	Retain all trees where possible.
Neutral grassland – semi-improved	-	Better quality habitat than the main field but not HPI and a thin strip therefore re-survey or strict conservation measures not essential. Compensatory meadow creation will take place on the site.
Improved grassland	-	Low biodiversity value but contributes to green infrastructure.
Hardstanding	-	No biodiversity value
Intact hedge – native species-rich	yes	This should be protected from impacts from the development.
Intact hedge – species-poor Holly hedge	yes	The holly hedge at the north of the site is HPI and should be conserved.

Habitat Recorded	Habitat of Principal Importance (HPI)?*	Brief Discussion
Privet hedge	no	Removal of the privet hedge adjacent to Incline Cottage is acceptable if replacement habitat is provided. As this is a non-native species it is not HPI.
Wall	-	Low biodiversity value in its own right
Dry ditch	-	Low biodiversity value

Key:

* Habitat of Principal Importance under the Environment (Wales) Act 2016

5.3.1 Broadleaved woodland – semi-natural

This small area of woodland is a Habitat of Principal Importance under the Environment (Wales) Act 2016, forms part of Coed Cegin candidate Wildlife Site and has been included in the ancient woodland area to the north of the survey area. It appears that current plans for the construction of a road will come close to the trees, but there are no proposals as we understand it to remove trees. The works may impact the tree roots, and so these must be protected. The woodland, although small, is connected to some good quality woodland outside the site and should be retained and protected from the negative impacts from construction and post-construction. The ground flora was almost non-existent, although could regenerate if protected from grazing and trampling, this would also encourage more regeneration of trees and shrubs.

5.3.2 Scrub

The bramble scrub is a common habitat and not HPI but it provides habitat connectivity and is an important habitat for many species groups so should be retained at least on part of its current extent. Scrub should be conserved where necessary to continue habitat connectivity for bats or replaced with shrubs and trees. Where it is acceptable to be removed, compensatory habitats for birds and reptiles should be created on the site.

5.3.4 Scattered trees

Scattered trees at the south of the western boundary were connected via the canopy with Llandegai Estate Wildlife Site. These trees should be conserved to maintain the connectivity of habitat. Trees mapped as scattered trees along the northern boundary formed part of the Coed Cegin candidate Wildlife Site and ancient woodland and should be retained. All the scattered trees were mature native species and should be retained where possible. Other locally-native trees should also be planted, particularly to create connections between habitats.

5.3.5 Neutral grassland – semi-improved

The site was surveyed outside the grassland survey period so an accurate assessment was not possible. However it was noted to have a low occurrence of herbs that would be expected in a lowland meadow habitat and it was dominated by grasses such as cock's foot grass and

common herb species such as creeping buttercup and ribwort plantain which tend to be dominant in ranker, less diverse grassland swards. Therefore it is unlikely to fit with the 'lowland meadow' habitat of principal importance as listed under the Environment (Wales) Act.

The grassland strip will be lost to the planned development. This is undesirable but due to its small area and the low likelihood of it being classed as a habitat of principal importance, further survey or strict protection measures are not considered justified. Replacement meadow creation will take place.

5.3.6 **Intact hedge – native species-rich**

This is a habitat of principal importance and contained several native woody species. It was in good condition, without gaps, and at least two metres wide. It should be retained and impacts avoided. It connects woodland habitat on the site and also connects to the canopy of Llandegai Estate Wildlife Site and Coed Cegin candidate Wildlife Site and ancient woodland adjacent to the site. Hedgerows will also be discussed under bats in the Fauna Section 5.5.

5.3.7 **Intact hedge – species-poor**

The holly hedge at the north of the site is HPI and as it is continuous with the ancient woodland, should be conserved. Removal of the privet hedge adjacent to Incline Cottage is acceptable if replacement habitat is provided on the site but see also the section on bats, 5.5.3 which state the potential importance of a hedge in this location near to a potential bat roost.

5.3.8 **Wall**

This had dense ivy growing on it but appeared to have little biodiversity value in its own right. See also Fauna Section – Bats.

5.3.9 **Dry ditch**

This was dry despite recent rainfall and has low biodiversity value.

5.3.3 **The entire site is part of the local green infrastructure, in particular the hedges, woodland, scattered trees and semi-improved grassland that provide valuable habitats that link to other habitats outside the site. The improved grassland is also part of this green infrastructure, but a very common habitat and, unlike the strip of semi-improved grassland, has little diversity in terms of plants or structure so is the least valuable biodiversity habitat on the site.**

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 *Great crested newts*

Their presence on the site is unlikely and further survey or mitigation measures will not be required.

5.5.2 *Badger*

Parts of the site are suitable for badgers and they are present in the local area. In order to ensure that badgers have not started to use the site, a pre-construction walkover survey will be required.

5.5.3 *Bats*

Some of the mature trees may contain bat roosts so mitigation will be required should any work be required to the mature trees on or overhanging the site. Bats, including lesser horseshoe have been recorded foraging over the hedgerows and trees bordering the site, (Enfys Ecology, 2024) and bats have been recorded emerging from the adjacent Incline Cottage in 2021 so avoidance measures will be put in place to protect these important foraging and flightline routes. Lesser horseshoe bats have been recorded foraging close to the cottage in 2024 (Enfys Ecology, 2024) so the vegetation around the cottage should be retained. Enhancement measures for bats will also be followed.

5.5.4 *Birds*

The hedges, trees and scrub on the site would provide excellent nesting habitat for birds. The wall also provides potential nesting habitat for wrens and robins. Mitigation measures will be followed to prevent impacts on nesting birds.

Goshawks have been recorded behaving territorially between 400 to 900m away (exact location not available). Goshawks are listed under Schedule I of the Wildlife and Countryside Act, which gives them legal protection against disturbance at any time of year. They tend to choose conifer trees in dense woodland in remoter areas and it is thought unlikely that they would nest in trees on the site which are on the edge of the broadleaved woodland in this location. However, there is conifer and mixed woodland adjacent to the site. They are quite susceptible to disturbance.

Further avoidance measures will be put in place to reduce the risk of damage to nesting goshawks or their nests and the measures will incorporate steps to reduce the risk of disturbance to goshawks.

Swifts are known to forage over the site so enhancement measures will be followed to increase nesting habitat for swifts.

5.5.5 **Dormice**

Dormice have not been recorded in the local area and so are unlikely to be found on the site. No survey or mitigation will be required. This will be reviewed if the hedge along the eastern boundary is due to be removed.

5.5.6 **Hedgehog**

The site has good potential for hedgehogs and good connectivity to other suitable hedgehog areas and hedgehogs have been found within 1km of the site. Mitigation measures will be in place to minimise any impacts on hedgehogs. Enhancement measures will be also be taken.

5.5.7 **Otter**

As it is possible that otters may use the site as a lying up area, a pre-construction walkover by an ecologist will be required to ensure that otters are not using the site.

5.5.8 **Red squirrel**

It is possible that red squirrel use the broadleaved woodland or scattered trees on the site as they have been seen within 1km of the site. Mitigation measures will be in place.

5.5.9 **Reptiles**

It is considered possible that the site may provide habitat for a small population of reptiles in the broadleaved woodland, hedgerows, piles of rubble, corrugated iron, wall, semi-improved grassland or scrub. Mitigation will be given to minimise the risk of any impacts on reptiles encountered during the work.

5.5.10 **Other Species**

No specific mitigation is necessary for other protected species as none are expected to be present. General measures set out in section 6.3 should be followed, and will also minimise any potential impacts on any other small animals using the site.

5.6 **Invasive Non-Native Species (INNS)**

Cotoneaster was present on the wall (target note 5). It is an invasive non-native species and is a priority species for action in Wales. Although it is common in garden settings it is on the side of the site that is less developed and adjacent to open countryside so should be removed to reduce the risk of spread.

The rhododendron was outside the site boundary in the adjacent woodland to the north of the site. Although it may be outside of the control of the developer, opportunities should be sought to remove the rhododendron if possible.

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 The low risk of a potential impact on the designated sites within 1km of the site will be further reduced by minimising the risk of pollution entering the Afon Cegin.

- The Guidance for Pollution Prevention Works and maintenance in or near water: GPP 5 January 2017 will be followed.

6.2.2 Based on the ecological information set out in this Preliminary Ecological Appraisal, potential impacts on the following Habitats of Principal Importance for Wales from development should be avoided:

- All hedgerows should be retained as they provide flightlines and foraging routes for bats (Enfys Ecology, 2024), including the privet hedge as it is adjacent to a potential bat roost at Incline Cottage.
- Broadleaved woodland.

6.2.3 In addition, the following habitats provide a valuable contribution to the green infrastructure provided by the site, and, where possible, should be retained and protected during development:

- Semi-improved grassland
- Scattered trees
- A proportion of the scrub habitat
- The wall

6.2.4 The above recommendations will be considered in relation to the current development proposals, given in Figure 5.1, the Proposed Masterplan.

- The broadleaved woodland may be impacted by the proposed track. The location should be moved if necessary to avoid impacts.
- Retention of the hedgerows on the north and east of the site seems likely, however the plan does suggest that a small stretch of hedgerow on the western boundary will be removed. If unavoidable, this should be relaid in an alternative location. It is also possible that the privet hedge may be impacted as the Proposed Masterplan does not show a hedgerow in its current location.
- It is unlikely that the semi-improved grassland would be retained under current plans. This should be reconsidered and compensatory measures put in place if removal is necessary.
- Retention of the wall is likely. Retention of a proportion of the scrub habitat is achievable under current plans. Compensatory habitat creation should take place for any scrub removal.

6.2.4 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.

6.2.5 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.

6.2.6 All the boundaries of the current site, including the boundary with Incline Cottage must remain as 'dark corridors' to minimise impacts on the flightlines of bats.

6.2.7 General biosecurity measures which should be adopted as part of any development project and 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.

6.3.2 The following general mitigation measures 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.

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

6.3.4 **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 the broadleaved woodland, scattered trees and hedges within and adjacent to the study site.

6.3.5 **Badgers** – A pre-works badger walkover should be completed to ensure that badgers have not started to inhabit the suitable habitat areas within the site prior to the commencement of development. 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.**

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.**

- 6.3.6 **Bats** –Prior to carrying out any work to mature trees on or adjacent to the site, a survey for potential roosts must be carried out by an ecologist, including tree climbing if necessary. If a roost is suspected then reasonable avoidance measures must be followed. A licence may be required from Natural Resources Wales.

Dark corridors

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:

- Dense vegetation should be included in urban landscapes to protect against ALAN for open-space foraging bats in city landscapes, and provide potential longer-term roosting opportunities.
- 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.

- 6.3.7 **Hedgehogs** - Care must be taken regarding clearance of any piles of brushwood, rubble, plant material or other ‘habitat piles’ in the colder months due to the possibility of disturbing hibernating animals including hedgehogs. Such piles should not be disturbed between October and April or when daytime temperatures are below 10°C. Removal should then take place by hand.

- 6.3.8 **Nesting Birds** – All vegetation clearance during the nesting season (taken here to be February-September inclusive) may impact nesting birds including potentially goshawks, and so further survey may be required in order to establish if nests are present. The nesting season has been extended here to incorporate the usual goshawk nesting period. 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.**

In order to ensure that no goshawks are nesting adjacent to the site, and therefore potentially subject to disturbance from the work, which would be an offence, a goshawk survey will be carried out of the trees on and adjacent to the site prior to the commencement of work.

- 6.3.9 **Otter** - A pre-construction walkover by an ecologist will be carried out to ensure that otters are not using the site.
- 6.3.9 **Red Squirrel** – If any mature trees are due to be felled, the trees should be checked for red squirrel dreys. Any works within 50m of an occupied drey within the breeding season (February to September) may disturb the drey and may require a licence, therefore further surveys will be needed to establish if dreys are present.
- 6.3.10 If occupied or potentially occupied trees are proposed to be felled then a licence will also be required for the works. This may not be granted if alternative locations or methods are available which avoids the impact. Works within the stream are low risk to squirrels however as with other species RAMS must be followed at all times in order to prevent disturbance or harm to this species. It is possible that the local planning authority may require a red squirrel protection plan for the works.
- 6.3.11 **Reptiles** - Care must be taken regarding clearance of any piles of rubble (target note 2) or logs (target note 4) in the colder months due to the possibility of disturbing hibernating animals including amphibians and reptiles. Such piles should not be disturbed between October and April or when daytime temperatures are below 10°C. Removal should then take place carefully by hand. Should any sections of the stone wall be required to be removed then the same precaution applies.

The following mitigation aims to make the grassy areas unsuitable for reptiles prior to work commencing on the site. The steps below will be carried out in agreeable weather conditions under the supervision of an ecologist, preferably between September and October, in agreeable weather conditions, that is, the temperature should be over 15°C, dry and little to no wind. This may also be possible in early November dependent on weather conditions and in liaison with the ecologist. The semi-improved grassland and improved grassland in a 5 metre-wide buffer zone beside the scrub or wall on the eastern boundary, and the hedges on the northern and western boundary should be kept to below 10cm in the following manner:

- The grassy vegetation will be strimmed in a directional manner, moving in the direction of retained habitat or escape routes for the reptiles.
- The grass will be strimmed to a maximum of 10 cm and cuttings will be removed from the site immediately.
- After 24 hours, the vegetation will then be cut as low as possible to ground level and kept below 5cm.
- If any animals are seen, work should stop and they should be allowed to move to safety under the guidance of the ecologist.
- Scrub will be cut and removed under the ecologist's supervision.

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 Consideration of the development proposals for the site have identified that compensation for the loss of / damage to the following habitats may be required:
- Semi-improved neutral grassland
 - Scrub
- 7.1.3 Native trees and shrubs should be planted to compensate for the loss of the scrub within the site. This woody vegetation should be planted within gardens and across the public areas of the development. Examples of suitable species are given in Table 7.1.

Table 7.1: Recommended Native Tree and Hedgerow Species

Latin name	Common name
<i>Acer campestre</i>	Field maple
<i>Cornus sanguinea</i>	Dogwood
<i>Corylus avellana</i>	Hazel
<i>Crataegus monogyna</i>	Hawthorn
<i>Euonymus europaea</i>	Spindle
<i>Ilex aquifolium</i>	Holly
<i>Prunus avium</i>	Wild Cherry
<i>Prunus padus</i>	Bird Cherry
<i>Quercus petraea</i>	Sessile oak
<i>Rosa canina</i>	Dog rose
<i>Sorbus aucuparia</i>	Mountain ash/rowan
<i>Sorbus torminalis</i>	Wild service tree
<i>Viburnum lantana</i>	Wayfaring tree
<i>Viburnum opulus</i>	Guelder rose

- 7.1.4 Native wildflower grassland should be planted to compensate for loss of the semi-improved neutral grassland. New wildflower grasslands should be established across the public areas of the development and should comprise native species. The ground should be suitably prepared for the establishment of the seed mix and should be cut annually, with cuttings removed.
- 7.1.5 Any felling of trees or removal of hedgerow should be avoided but where unavoidable, replacement planting should take place with some of the native species listed in Table 7.1.
- 7.1.6 The cotoneaster on the wall (target note 5) should be removed.

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 at Enfys 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:

- Wildlife-friendly pond
- Protecting the woodland at the northern end of the site from trampling during and after construction. Permanent fencing will be required post-construction

7.2.3 In addition, the provision of additional features which could be used by bats, nesting birds, and hedgehogs should be incorporated into the scheme:

- Bat boxes
- Bird boxes
- Hedgehog highways

7.2.4 **Bats** - at least 8 bat boxes should be incorporated into the site's layout. Bat boxes should be erected onto or in-built into the new houses, located along potential commuting and foraging routes and away from busy roads such as along the eastern boundary. The boxes should be at least 3m above the ground and be placed on elevations facing preferably south, south-east and south-west and away from windows and lighting. 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.

At least 4 bat boxes should also be erected within the woodland. These should be placed in three groups of three, with the three boxes in a single group facing different directions such as south, south-east and south-west as agreed with an ecologist. The 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.

7.2.5 **Birds** - at least 12 bird boxes should be incorporated into the site's layout. Bird boxes should include:

- At least 2 swift boxes or swift bricks
- Boxes with a 32mm entrance (sparrow boxes)

- Boxes for smaller birds (25-28mm entrance)
- Boxes with 45mm opening (starling box)

The boxes should be placed near to and facing areas of trees and other vegetation such as gardens or the site boundaries. These boxes should be secured mounted on the trees using non-harmful nails (non-rusting, ideally aluminium). Alternatively the boxes should be installed on the buildings between 2-4m from the ground and facing north / north-east. The boxes should ideally be woodcrete or woodstone boxes rather than wooden boxes as they will last longer and with limited maintenance.

- 7.2.6 **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 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.

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 Ecological Considerations

Proposed work	Work Stage	Species	Constraint
Prior to work commencing	Pre-construction	Goshawks, badgers, otters	Survey for goshawk in adjacent woodland. Walkover survey for badger activity and setts or otter presence.
Any work to mature trees on the northern boundary in February to September or work to any other trees or scrub in March to September	Immediately prior to clearance, whenever this occurs	Nesting birds including goshawks	Nesting bird checks
Removal of stone wall sections (if this is proposed), rubble, logs or brash	All	Reptiles, hedgehogs	Should not be carried out between October and April or when daytime temperatures are below 10°C.
Any planned removal or work to mature trees.	Immediately prior to work, whenever this occurs	Bats, red squirrels	Trees should be surveyed for bat roosts or red squirrels.
Pre-construction	Pre-construction	Reptiles	Strim the grassland beside scrub, wall and hedges to make unsuitable for reptiles. Remove any scrub under the supervision of an ecologist.

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.

9.0 References

- Bat Conservation Trust. (2018). *Bats and artificial lighting in the UK - bats and the built environment series*. Available: www.bats.org.uk.
- CES Ecology, Land off Llandegai Road, Bangor, Preliminary Ecological Appraisal, June 2020.
- 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.
- Reason, P.F. and Wray, S. (2023). *UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats*, Chartered Institute of Ecology and Environmental Management, Ampfield.
- British Hedgehog Society and Peoples Trust for Endangered Species, *Hedgehogs and Development*, PDF. Available: <https://www.britishhedgehogs.org.uk/wp-content/uploads/2019/05/developers-1.pdf>. Accessed 02/11/2023.
- Enfys Ecology Ltd, 13th November 2024, Bat Activity Surveys of Incline Fields on Behalf of Williams Homes.
- French GCA, Wilkinson JW, Fletcher DH, and Arnell AP Amphibian and Reptile Conservation Trust (2014). *Quantifying the Status of Great Crested Newts in Wales*, Natural Resources Wales.
- 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/>
- Scottish Environment Protection Agency (SEPA), Northern Ireland Environment Agency (NIEA) and Natural Resources Wales (NRW), Guidance for Pollution Prevention Works and maintenance in or near water: GPP 5 January 2017, available at www.netregs.org.uk/environmental-topics/pollution-preventionguidelines-ppgs-and-replacement-series/ accessed 4/12/24

UK BAP (2007). *UK Biodiversity Action Plan Priority Habitat Descriptions, Lowland Meadows*.
<https://hub.jncc.gov.uk/assets/f0553254-1d47-474a-98e5-37fa163a28b5>

APPENDIX A Legislation and Planning Policy

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, injury 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.

Birds listed under Schedule 1, Part I

Birds and their young, for which it is an offence to intentionally or recklessly disturb at, on or near an 'active' nest.

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.

Red Squirrel

Red squirrels are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), for which the following are offences:

- Intentional taking, killing or injuring;
- Intentionally or recklessly damaging or destroying its place of shelter or protection;
- Intentionally or recklessly disturbing it whilst occupying its place of shelter or protection;
- Intentionally or recklessly obstructing access to its place of shelter or protection
- Sale, or offering or exposing for sale; or
- Possession.

This species is also listed on the WCA Schedule 6, which prohibits certain methods of capture and killing, which are specified in WCA Section 11. It is a further offence to use the following methods:

- Any trap or snare, electrical device or poisonous / stupefying substances;
- Any net;

- Any automatic or semi-automatic weapon;
- Any device for illuminating a target / sighting device;
- Any dazzling device;
- Any gas or smoke;
- Any sound recording as a decoy; or
- Any mechanically propelled vehicle.

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 helvetica**
- 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 helvetica*), 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.

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.

APPENDIX B Desk Study

Desk Study Data included as separate Appendix

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 surveyed.

English Name	Scientific Name
Ash	<i>Fraxinus excelsior</i>
Beech	<i>Fagus sylvatica</i>
Black knapweed	<i>Centaurea nigra</i>
Bramble	<i>Rubus fruticosus</i> agg.
Broad buckler fern	<i>Dryopteris dilatata</i>
Broad-leaved dock	<i>Rumex obtusifolius</i>
Buddleia/butterfly bush	<i>Buddleia davidii</i>
Chicory	<i>Cichorium intybus</i>
Cock's foot grass	<i>Dactylis glomerata</i>
Common bent	<i>Agrostis capillaris</i>
Common cat's ear	<i>Hypochaeris radicata</i>
Common nettle	<i>Urtica dioica</i>
Cotoneaster	<i>Cotoneaster</i> sp.
Creeping buttercup	<i>Ranunculus repens</i>
Crested dog's tail	<i>Cynosurus cristatus</i>
Dandelion	<i>Taraxacum officinalis</i>
Dog rose	<i>Rosa canina</i>
Elder	<i>Sambucus nigra</i>
Elm	<i>Ulmus</i> sp.
Foxglove	<i>Digitalis purpurea</i>
Grey willow	<i>Salix cinerea</i>
Ground ivy	<i>Glechoma hederacea</i>
Hart's tongue fern	<i>Asplenium scolopendrium</i>
Hawthorn	<i>Crataegus monogyna</i>
Herb robert	<i>Geranium robertianum</i>
Hogweed	<i>Heracleum sphondylium</i>
Holly	<i>Ilex aquifolium</i>
Ivy	<i>Hedera helix</i>
Meadow buttercup	<i>Ranunculus acris</i>
Perennial ryegrass	<i>Lolium perenne</i>
Privet	<i>Ligustrum ovalifolium</i>
Red fescue	<i>Festuca rubra</i>
Ribwort plantain	<i>Plantago lanceolata</i>
Sessile oak	<i>Quercus petraea</i>
Soft rush	<i>Juncus effusus</i>
Sycamore	<i>Acer pseudoplatanus</i>
Tormentil	<i>Potentilla erecta</i>

English Name	Scientific Name
White clover	<i>Trifolium repens</i>
Yarrow	<i>Achillea millefolium</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.