Cambrian Ecology Ltd
5 Tan y Bwlch
Maentwrog
Gwynedd
LL41 3YU

chris@cambrianecology.com
07765 254035 (Chris Hall)

Preliminary Ecological Assessment
Land at Maes Mona, Amlwch, Ynys Môn
Proposed Housing Development

17th April 2024

Report by: Chris Hall ACIEEM

Client: Isle of Anglesey County Council

Planning Authority: Isle of Anglesey County Council

Grid Reference: SH 43872 92974 (Approximate site centre)

CONTENTS **Page No**

Figure 1: Site Location

Preliminary Ecological Assessment
Land at Maes Mona, Amlwch, Ynys Môn
Proposed Housing Development

17th April 2024

1. Summary

A preliminary ecological assessment, (PEA) and reptile surveys were carried out by Cambrian Ecology Ltd on land at Maes Mona in Amlwch in 2020. It is intended to submit a planning application to develop the site for housing. The PEA was then repeated on 16th April 2024.

The surveys revealed that the site is divided into two distinct areas comprising of farmland on the part of the site adjoining Maes Mona, and a previously unmanaged area dominated by scrub on the part of the site adjoining Bull Bay Road to the north.

Habitats present on the site adjoining Maes Mona are broadleaved woodland, improved grassland, and scrub. There is also a drain just outside the western site boundary.

The part of the site adjoining Bull Bay Road, which was originally dense scrub, has since been subjected to a level of management with the scrub cut back and cleared under the supervision of Cambrian Ecology staff in 2022. This level of supervision was due to the potential presence of hedgehogs; (*Erinaceous europaeus*). No animals were found during the course of the works. The scrub is now beginning to regenerate but has been regularly managed to prevent future problems at the development stage.

Two 'Invasive Non-Native Species' (INNS) in the form of Montbretia; (*Crocosmia crocosmiflora*) and Spanish bluebell; (*Hyacinthoides hispanica*) were recorded on the site. These plants are listed under Schedule 9 of the Wildlife & Countryside Act and there are legal implications with regards to their presence.

The reptile surveys carried out on both parts of the site in 2020 were all negative.

No protected species were recorded during the survey although there is some potential for nesting birds and hedgehogs to be present in the areas of scrub that will be lost.

A biological records search was carried out with the Local Records Centre, (LRC) Cofnod as recommended in the guidance from the Chartered Institute of Ecology & Environmental Management, (CIEEM). This enables the proposed development site to be assessed in a wider context and a potential wider 'zone of influence' of the development to be taken into account.

The biological records search revealed that there are a large number of hedgehog records in the area which will need to be taken into account in the site design for this rapidly declining species, along with records of red squirrel; (*Sciurus vulgaris*).

There is a ditch just outside the western boundary of the site and while this is of little significance from an ecological point of view, watercourses such as this can act as a transmission vector for pollutants during the construction phase. This could then extend the 'zone of influence' of the proposals beyond the site boundary. Precautionary measures will be required to be in place to minimise the risk of this occurring.

Due to the limited assemblage of common plant species, no negative impact is anticipated from a botanical perspective. There is however a potential negative impact on nesting birds, hedgehogs, and red squirrels.

Under Chapter 6 of Planning Policy Wales 11, planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. Updated guidance relating to biodiversity enhancement also includes the requirement for enhancements to take into account 'ecosystem resilience' and 'green infrastructure' as an integral part of the enhancement strategy.

To satisfy this condition, the use of plants of benefit to biodiversity has been recommended for inclusion in any landscaping schemes, along with habitat enhancement and nest boxes for red squirrel, the provision of bat tubes and bee bricks as an integral part of the fabric of the buildings and the improvements to defunct hedges on the site (see Section 10).

Key Messages:

1. **There is the potential for nesting birds, hedgehogs, and red squirrels to be present for which mitigation measures will be required (see Section 9.2).**
2. **There is the potential for pollution of the watercourse if precautionary measures are not taken (see Section 9.1).**
3. **The Montbretia will be controlled with the aim to eradicate as part of the proposed works (see Section 9.1).**
4. **Enhancements are recommended in the form of new planting of benefit to wildlife, enhancements and nest boxes for red squirrels, improvements to existing hedges, bee bricks and new accommodation for bats (see Section 10).**

2. Introduction

Cambrian Ecology Ltd was commissioned by the client Trystan Evans of Isle of Anglesey County Council, (IoACC) to carry out an updated PEA of land at Maes Mona in Amlwch. It is intended to submit a planning application to develop the site for housing. The site had previously been surveyed by Cambrian Ecology in 2020 when a suite of reptile surveys had also been carried out.

The relevant planning authority is IoACC who require ecological surveys to be carried out as an integral part of the planning process.

The proposed development site is located at Grid Reference SH 43872 92974 (Approximate site centre).

3. Methodologies

3.1 Habitats

This latest habitat survey was carried out on 16th April 2024 by ecologists Chris Hall and Ben Box. The survey took the form of an extended Phase I survey and identified baseline ecological conditions, as well as any important or notable habitats. All habitats within the proposed development site were classified and species lists were drawn up for each habitat type identified and the habitat condition was assessed. In the context of this report, *important or notable habitats* are considered to be those which are of a sustainable size, and which meet any of the following criteria:

- Habitats which have a high intrinsic ecological value, i.e. they support a diverse range of vascular plant and/or faunal species.
- Mature or semi-natural habitats in built-up areas.
- Environment Wales Act priority habitats.
- Habitats considered having a significant extent and/or ecological interest.
- Invasive Non-Native Species, (INNS).

All habitats considered to have the potential to support rare, protected, or otherwise notable species of flora and fauna were noted, as were any direct signs of these species. Where possible, habitats were cross-referenced to any relevant UK/Wales priority habitats.

3.2 Reptiles

A suite of five reptile surveys was carried out in 2020 by Chris Hall and Kate Williamson, assisted by Natalie Parry, following the guidance of the Herpetofauna Workers Manual, (JNCC 2003). A total of 50 refugia were placed on the edge of scrub habitats on the site boundary. The refugia were bitumen felt sheets, 0.5m x 0.5m in size and were fixed in suitable sites using metal tent pegs to avoid problems of wind blow. After a 'settling in' period of a fortnight, they were then checked on five occasions between 2nd July 2020 and 27th August 2020. Any animals basking on top of or sheltering underneath the refugia were recorded, noting species, sex, and age class. These surveys were all conducted in appropriate environmental conditions, see Table 1 below.

Table 1: Environmental Conditions for reptile surveys in 2020

Date	**Temperature**	**Wind**	**Rain**	**Cloud Cover**
2nd July 2020	15.°C	Still	None	100%
12th July 2020	16°C	Light breeze	None	50%
16th July 2020	18°C	No breeze	None	0%
23rd July 2020	15°C	Light breeze	Occasional light drizzle	75%
27th August 2020	16°C	No breeze	None	50%

3.3 Other Protected Species

The site was assessed on its potential to support any other protected or important species. During this survey, a search was made for field signs of protected or notable species and assessments made of the potential of habitats to support these species. In the context of this report important or notable species are considered to be those that meet any of the following criteria:

- Species protected by British or international law.
- Environment Wales Act priority species or local BAP species.
- Nationally rare or scarce species.
- Species of Conservation Concern (e.g. JNCC Red List, RSPB/BTO Red or Amber lists).

3.4 Desk Study

The desktop study aims to collate existing information about priority species, habitats, and designated sites within 1km of the survey area. This information has relevance to the likelihood of priority species being present within the survey area, as well as giving context to any species and habitat records from the actual site.

A data search for all priority species, habitats and designated sites was conducted with Cofnod. The search parameters were 2km from the survey site area for protected species and a 10km radius for protected sites.

4 Survey Limitations

Field signs for protected and important species are often difficult to find or absent from a site. For this reason, the site and its habitats are assessed on their potential to support these species.

5 Results

The Phase I Habitat Maps can be found in Appendix 2.

5.1 Habitat

5.2 Site Adjacent to Maes Mona

The habitat on the proposed development site is dominated by improved grassland. There is also a strip of broadleaved woodland, areas of scrub, a minor ditch, and the remnants of a defunct hedge (see figure 2).

5.2.1 *Broadleaved Woodland*

The woodland is relatively young and comprises ash; (*Fraxinus excelsior*), sycamore; (*Acer pseudoplatanus*), elder; (*Sambucus nigra*) and hawthorn; (*Crataegus monogyna*).

The ground flora is very similar to the improved grassland in which the trees were planted but there is some incursion by bramble; (*Rubus fruticosus*) and foxglove; (*Digitalis purpurea*). There is evidence of garden waste being deposited over the boundaries of adjacent properties on the northern boundary where the INNS species Spanish bluebell is present.

5.2.2 *Defunct Hedge*

There is a defunct hedge along the southern site boundary growing against a stone wall which is now little more than occasional hawthorn bushes with some bramble growing in the gaps.

5.2.3 *Improved Grassland*

This is by far the most dominant habitat on the site and is currently heavily grazed by livestock. Grasses present include perennial ryegrass; (*Lolium perenne*), common bent; (*Agrostis capillaris*) and Yorkshire fog; (*Holcus lanatus*). Cock's foot; (*Dactylis glomerata*) is also present in places around the field margins. Broadleaved species include creeping buttercup; (*Ranunculus repens*), broadleaved dock; (*Rumex obtusifolius*), creeping thistle; (*Cirsium arvense*) and chickweed; (*Stellaria media*).

5.2.4 *Scrub*

There are areas of fairly dense scrub on the site. The scrub habitat on the woodland edge is a virtual monoculture of gorse; (*Ulex europaeus*) with bramble present as a relatively minor component.

The scrub habitat along the extreme western boundary on the bank of the watercourse is dominated by willow; (*Salix spp*), while the remainder of this habitat is primarily bramble with some hawthorn, occasional dog rose; (*Rosa canina*) and honeysuckle; (*Lonicera periclymenum*).

5.2.5 *Tall Ruderal*

There is a very small area of tall ruderal vegetation in the form of nettle; (*Urtica dioica*) just outside the boundary of one of the properties. This is likely to be as a result of nutrient enrichment from the deposition of garden waste.

5.2.6 *Watercourse*

There is a small ditch just outside the western boundary of the site. This watercourse appears to be ephemeral and held no water at the time of the survey. There is no specific aquatic vegetation associated with the ditch, which was choked with Yorkshire fog, bramble, and soft rush; (*Juncus effusus*).

Figure 2: Aerial Image of the land adjacent to Maes Mona

5.3 Land Adjacent to Bull Bay Road

The habitat on the land adjacent to Bull Bay Road includes broadleaved woodland, neutral grassland, scrub, tall ruderal, and trees (see figure 3).

5.3.1 *Broadleaved Woodland*

There is a small area of broadleaved woodland near the site entrance.

Sycamore is the most numerous species along with some wych elm; (*Ulmus glabra*), holly; (*Ilex aquifolium*) and hawthorn.

Ground flora includes herb Robert; (*Geranium robertianum*), foxglove, cleavers; (*Galium aparine*), hart's tongue fern; (*Asplenium scolopendrium*), bluebell; (*Hyacinthoides non-scripta*) and Spanish bluebell. This latter species is listed as an INNS under the Wildlife & Countryside Act.

5.3.2 *Neutral Grassland*

There is an area of grassland at the site entrance on Bull Bay Road which is very difficult to categorise as it doesn't fit into any of the standard 'Phase 1' habitats, it appears to have regenerated on the location of a former building. It has therefore been classified as 'Neutral Grassland'. There is evidence of the fly tipping of garden waste on the site.

Grasses present include common bent; (*Agrostis capillaris*), Yorkshire fog; (*Holcus lanatus*) and Cock's foot; (*Dactylis glomerata*).

Broadleaved species present include creeping buttercup; (*Ranunculus repens*), broadleaved dock; (*Rumex obtusifolius*), creeping thistle; (*Cirsium arvense*), hogweed; (*Heracleum sphondylium*), willow herb; (*Epilobium montanum*), bluebell and scarlet pimpernel; (*Anagallis arvensis*).

Due to the dumping of garden waste on the site, some exotic species are present including Montbretia and Spanish bluebell. These plants are listed as an INNS under the Wildlife & Countryside Act.

5.3.3 *Scrub*

There are extensive areas of scrub on the site which has been managed since 2022, allowing access throughout all parts of the site. The re-growth is dominated by hawthorn; (*Crataegus monogyna*), gorse; (*Ulex europaeus*), bramble; (*Rubus fruticosus*), willow; (*Salix spp*) and young sycamore. Butterfly bush; (*Buddleia davidii*) and elder; (*Sambucus nigra*) are also present in places as minor components.

Since the scrub was taken into a regular management regime, other species not recorded in 2020 are now more apparent. Bluebells are now present in places along with Alexanders; (*Smyrnium olusatrum*), foxglove, lesser celandine; (*Ficaria verna*), wild garlic; (*Allium ursinum*) and hedge bindweed; (*Calystegia sepium*).

5.3.4 *Tall Ruderal*

There are large areas of tall ruderal vegetation in the form of nettle; (*Urtica dioica*), rosebay willow herb; (*Chamaenerion angustifolium*) greater willow herb; (*Epilobium hirsutum*) and Alexanders.

5.3.5 *Trees*

There are a number of individual trees on the site, primarily sycamore with occasional holly and elder.

Figure 3: Aerial image of the part of the site which adjoins Bull Bay Road (A5025) to the north.

5.2 Reptiles

The reptile surveys carried out in 2020 were all negative.

5.3 Other Protected Species

The protected species survey was negative.

There is the potential for nesting birds (at the appropriate time of the year) and hedgehogs to be present in the areas of scrub which will be lost. This potential has however diminished since a scrub management regime was introduced.

The woodland on the northern boundary of the Maes Mona part of the site, and woodland edge on the southern boundary of the part of the site adjacent to Bull Bay Road have the potential to be used as flight paths and foraging areas by bats, although the trees are not yet of sufficient age to provide crevices for roosting.

5.4 Desk Study

5.4.1 *Protected Species*

The most relevant record received from the biological record search was that there are numerous records of hedgehog within the search area (see Figure 4).

There are also some records of red squirrels with eleven records within the 2km radius search area (see Figure 5), and records of five bat species.

Although the reptile surveys on the site were all negative, there are a large number of records of Herpetofauna (amphibians & reptiles) within the search area (see Figure 6).

The protected species records are summarised below in Table 2

Table 2- Summary of the protected species records returned in the data search.

Common Name	**Zoological Name**	**No. of Records**
Bat (unknown)	*Chiroptera*	1
Pipistrelle (species unknown)	*Pipistrellus spp*	5
Common pipistrelle	*P. Pipistrellus*	3
Soprano pipistrelle	*P. pygmaeus*	1
Hedgehog	*Erinaceous europaeus*	63
Red squirrel	*Sciurus vulgaris*	11
Adder	*Vipera berus*	3
Common frog	*Rana temporaria*	4
Common lizard	*Zootoca vivipara*	3
Common toad	*Bufo bufo*	2
Great crested newt	*Triturus cristatus*	10
Palmate newt	*Lissotriton helvetica*	3
Smooth newt	*L. vulgaris*	1

5.4.2 *Statutory Designated/Protected Sites*

With regards to statutory protected/designated sites, the nearest are the North Anglesey Marine Special Area of Conservation, (SAC) which is designated for its harbour porpoise; (*Phocoena phocoena*) population, and the Anglesey Terns Special Protection Area, (SPA) which lie just over 500m away to the north (see Figure 7).

5.4.3 *Non-Statutory Designated Sites*

There are seven Wildlife Sites within the search area, the closet being the Porth Llechog Wildlife Site just over 400m away to the north which is designated for its sea-cliff heath and grassland habitats (see Figure 8).

Maes Mona also lies within the B Lines Cymru. This is part of a national initiative to improve habitat connectivity for invertebrates which will then benefit a range of other taxa (see Figure 9).

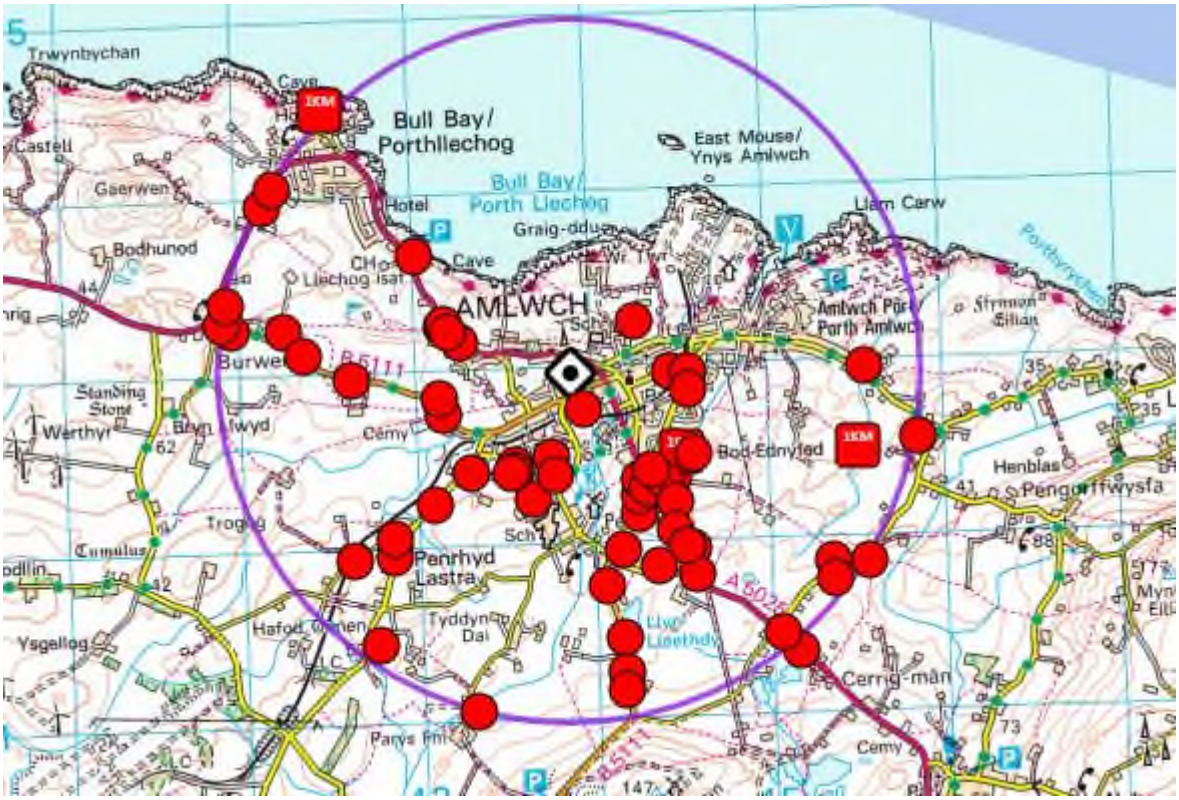

Figure 4: Location of hedgehog records

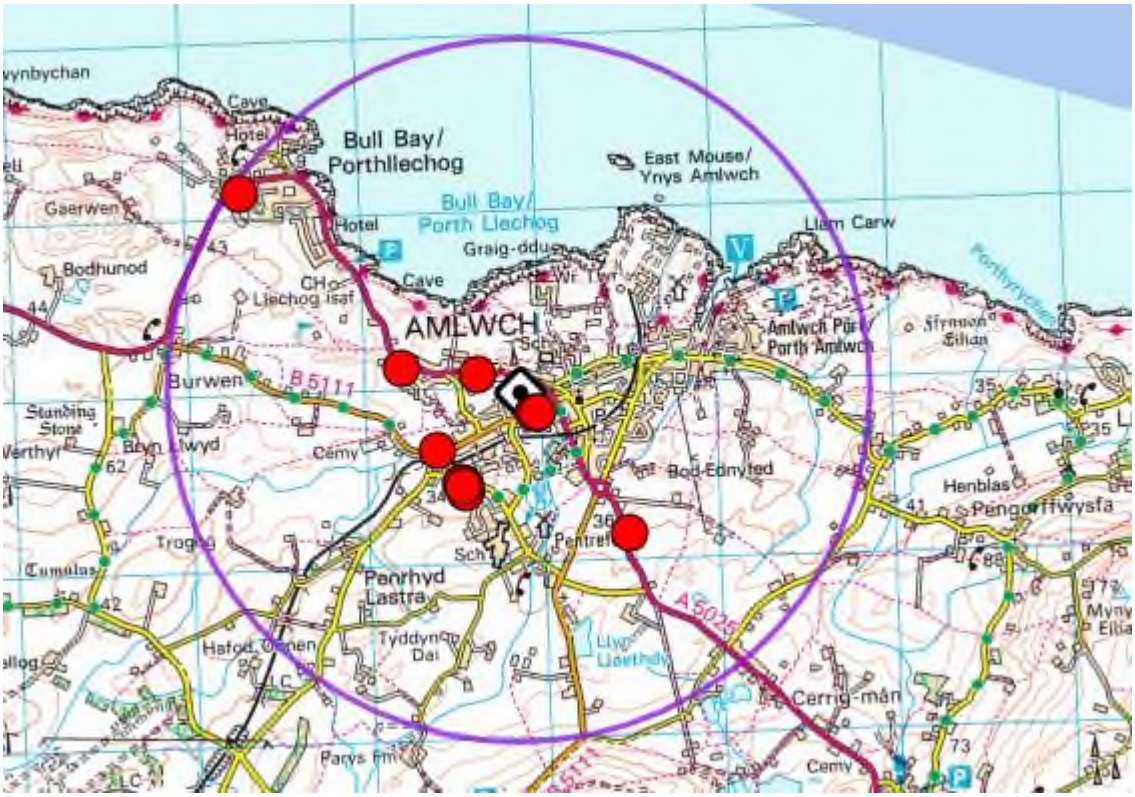

Figure 5: Location of red squirrel records

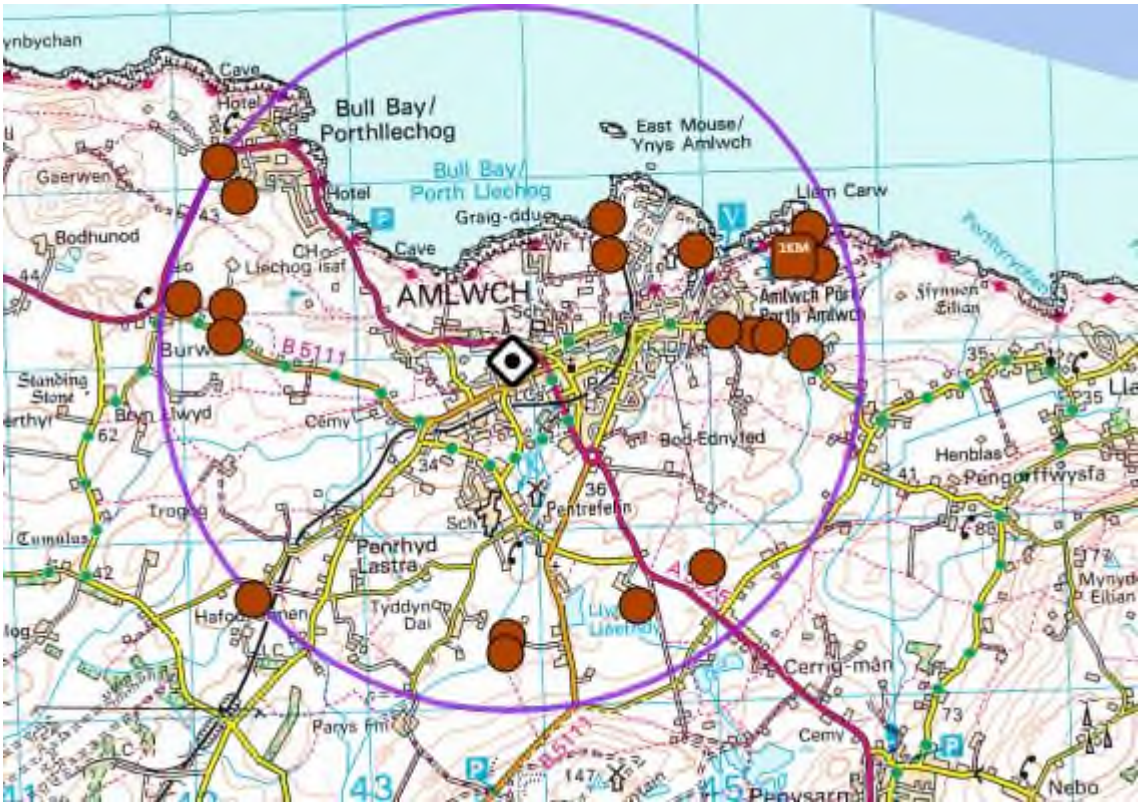

Figure 6: Location of Herpetofauna records

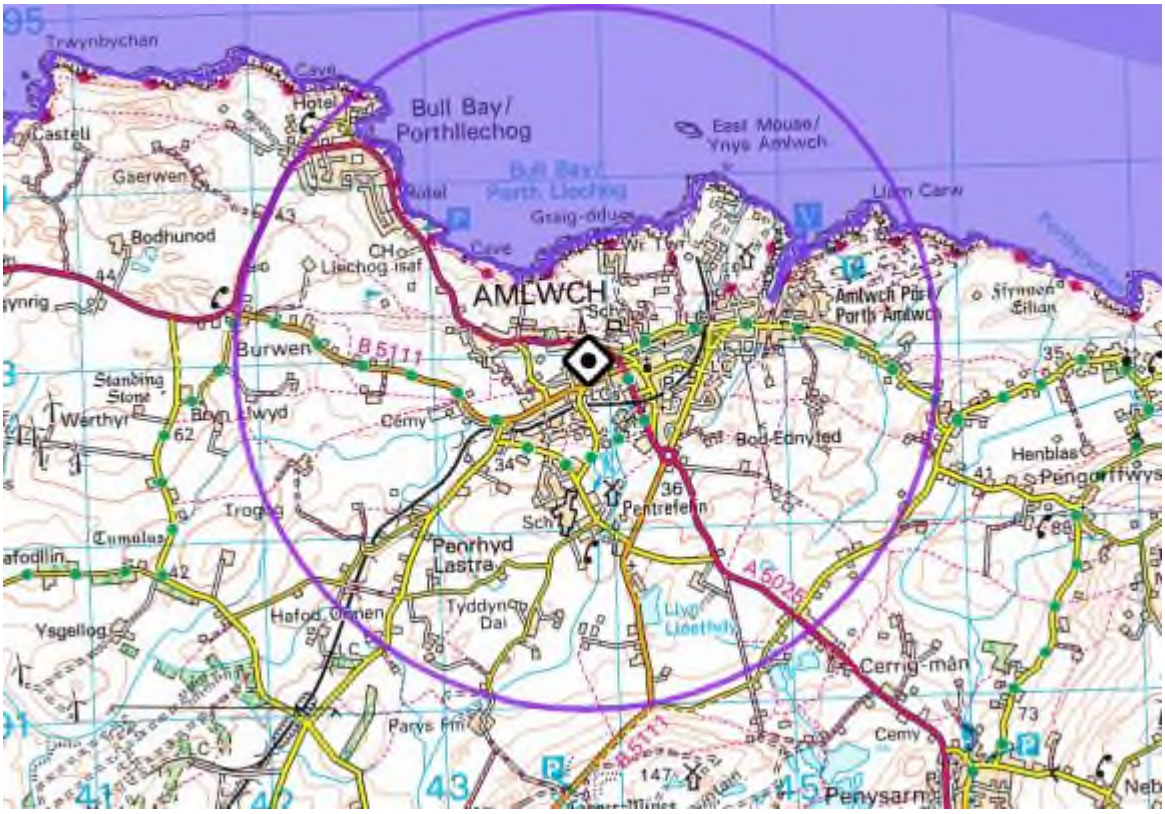

Figure 7: Location of protected/designates site: SAC/SPA

Figure 8: Location of Wildlife Sites

Figure 9: Location of the B Lines Cymru area

6 Habitat Evaluation & Impact Assessment

6.1 Broadleaved Woodland

Broadleaved woodland is a particularly valuable habitat for a range of species and taxa, due to the very nature of the habitat it takes a long time to replace once lost. Although this is only a relatively young woodland, this habitat becomes progressively more valuable to biodiversity as it ages. With time, dead wood and other defects on trees provide an even more diverse habitat. The loss of this habitat could have a negative impact at a local level, not only from a botanical point of view, but also from a perspective of the species that it supports such as nesting birds, foraging bats and potentially red squirrels.

It is understood from the Arboricultural Survey Report, (O'Connor 2022) that this woodland is to be retained to provide a screen between the development site and the properties on Bull Bay Road.

6.2 Defunct Hedge

The defunct hedge is currently of minimal value to biodiversity being little more than occasional hawthorn bushes. As a result this habitat feature does not contribute significantly to habitat connectivity. The loss of this habitat would therefore not have any negative impact at any level.

As a result there is the potential for a positive impact on biodiversity if this hedge is replanted with a wider diversity of species.

6.3 Improved Grassland & Neutral Grassland

The grassland has negligible ecological value being composed of a very limited range of common and widespread species of no conservation concern. The value is further diminished by the current management regime. No negative impact on biodiversity at any level is therefore anticipated as a result of the loss of this habitat.

There is however the potential for a positive impact on biodiversity as a result of the development if plants of benefit to wildlife are utilised in the landscaping schemes.

6.4 Scrub

The scrub habitats on the site currently lack diversity being composed of a limited range of common and widespread species. No negative impact on biodiversity at any level is anticipated as a result of the loss of this habitat. There are, however, potential protected species issues that will need to be taken into account in the form of nesting birds and hedgehogs.

6.5 Tall Ruderal

No impact at any level is anticipated as a result of the loss of tall ruderal vegetation. The species present are all common and widespread and of no biodiversity or conservation concern.

6.6 Trees

Although the arboricultural report, (O'Connor 2022) states that some individual trees throughout the site can either be removed or retained, the architect's drawings show these trees are to be retained.

No negative impact as a result of tree loss is therefore anticipated.

6.7 Watercourse

Although dry at the time of the survey, this watercourse has the potential to act as a transmission vector for any siltation/pollution incident during wetter periods of the construction phase. This could then extend the 'zone of influence' of the proposals beyond the site boundary.

Due to the very heavily vegetated condition of the dry watercourse, there are also potential protected issues in the form of nesting birds and hedgehogs.

7 Species Evaluation & Impact Assessment

7.1 Bats

7.1.1 *Roost Loss*

Although there are records of bats within the 2km search radius, there are no potential roosts on the site that could be impacted by the proposals. No negative impact as a result of roost loss will therefore occur.

Due to the lack of potential roosts within the site boundary, there is the potential for enhancement for this species to satisfy the Planning Authority's obligations under the Environment Wales Act (2016) (see Section 10.1).

7.1.2 *Habitat Fragmentation*

The broadleaved woodland strip on the northern boundary of the site is to be retained and the woodland to the south of the site is outside the site boundary and will be unaffected. There will therefore be no physical habitat fragmentation. Inappropriate exterior illumination can however have a similar negative impact on bat movements to physical fragmentation and can cause a 'light barrier' effect in some species, in particular, *Rhinolophus, Plecotus* and *Myotis* species, all of which are known to be present in the area from the results of the data search.

Even species such as *Pipistrellus* can be discouraged from flying across brightly lit spaces and any illumination of roost entrances could result in the abandonment or failure of uptake of a roost.

Key flight paths identified in studies, (BCT 2018) include hedgerows, woodland edges, and river corridors.

The habitat fragmentation caused by inappropriate exterior illumination can potentially result in a negative impact at a regional level as the impact can also extend to roosts some distance from the proposed development site.

Recommendations are made in Section 9.2.1. to ensure that no impacts occur.

7.2 Hedgehogs

The scrub habitats on the site provide potential foraging opportunities for hedgehogs in addition to secure day-time concealment.

There is the potential for the killing and/or injury of hedgehogs during the removal of the scrub habitat on the site if this is carried out in an insensitive manner. This could result in a negative impact on hedgehogs at a local level.

There is also the potential for the killing/injury of animals during the construction phase if simple precautionary measures are not in place. The entrapment of animals in open excavations is the primary risk.

There is also the potential for a loss of foraging habitat if the garden boundaries of the new properties prevent freedom of movement for hedgehogs between the gardens.

The hedgehog is a priority species across North Wales including Anglesey and as a result of this conservation status, any negative impact must be avoided.

7.3 Nesting Birds

Nesting birds will potentially be present in the scrub habitats on the site. Any disturbance during the nesting season resulting in the failure of the brood could have a negative impact at a local level.

All birds with the exception of some ‘pest species’ which can be controlled under licence, are protected while nesting. This factor must be taken into account in the mitigation strategy.

There is also the potential for a negative impact at a local level as a result of the loss of nest sites and as a result of a reduction in foraging habitat.

7.4 Red Squirrels

There will be no loss of woodland/tree habitats as a result of the proposals. No negative impact on red squirrels is therefore anticipated.

7.5 Reptiles & Amphibians

The proposed development site appears to offer potential herpetofauna habitat with a combination of scrub, grassland, and open areas for basking. The reptile surveys were however all negative, despite a fairly intensive survey effort. Although the surveys were carried out in 2020, it is not considered

feasible that the site could have been colonised in the intervening period due to the nature of the habitats surrounding the site which are largely unsuitable for reptiles.

No negative impact on reptiles is therefore anticipated as a result of the proposed development.

Although there are records of great crested newts within the 2km radius data search area, the nearest record of this species is 1.3km away and there are no ponds on, or in close proximity to the site. The closest breeding record is over 1.5km away.

8 Protected/Designated Sites Impact Assessment

Due to the location of the protected/designated sites in relation to the proposed development site, it is not considered feasible that there could be any negative impact as a result of the proposals.

9 Mitigation Measures

9.1 Habitats

9.1.1 *Broadleaved Woodland & Trees*

The strip of broadleaved woodland along the northern site boundary is to be retained, it is understood that this is feasible as it provides screening between the site and the properties on Bull Bay Road.

The architect's drawing also show the retention of the trees on the site although the diseased ash trees on the boundary of the Maes Mona and Bull Bay Road sections of the site may be lost.

It is vital that the root protection zones, and other measures detailed in the arboricultural report, (O'Connor 2022) are adhered to in order to prevent any tree loss as a result of root damage.

9.1.2 *Defunct Hedge*

No mitigation measures are required from a habitat point of view for the loss of the defunct hedge.

There are however potential protected species issues relating to the removal of habitat in the form of hedgehogs and nesting birds.

It is recommended that the hedge is replanted as part of the landscaping proposals as detailed in Section 10.1.

9.1.3 *Improved Grassland & Neutral Grassland*

Due to the very limited range of common and widespread species associated with this habitat, no mitigation measures for habitat loss are required.

9.1.4 *INNS*

There is the potential for the spread of Montbretia and Spanish bluebell particularly during the site clearance phase when large volumes of material will require removal from site, and during the initial ground-works phase, when there will be excavations for footings, services etc. Montbretia rarely produces seed, and the usual transmission vector is human activity moving the corms around during excavations etc. The corms are very persistent in the soil, and this must be taken into account to avoid the risk of committing an offence.

Spanish bluebell on the site will however produce seeds, in addition to the presence of bulbs in the soil but this species should be less of a problem as it is located in areas where excavation should not be necessary.

The timescale of the project is not known but there are two potential approaches to the biosecurity risk posed by the presence of Montbretia and Spanish bluebell. This could either take the form of pre-works eradication treatment if time allows, or a 'containment strategy' to allow the development to commence prior to eradication taking place.

Option 1: Pre-Works Eradication

It is recommended that the Montbretia and Spanish bluebells on the site are treated with an appropriate herbicide prior to ground-works commencing which could result in the dispersal of the plant. This treatment must be carried out between March and the end of May in the case of Montbretia, when the plant is actively growing but before it starts flowering in early June for the treatment to be effective. Applications in May are most effective for Spanish bluebells. A 'systemic' herbicide such as *Glyphosate* must be used to ensure that the roots are killed, not just the foliage. The disadvantage of this approach is that further treatments may be required in subsequent years as on occasions, corms may have become detached from the parent plant which prevents the translocation of the herbicide. Due to the presence of native bluebells on the site, any herbicide use must be undertaken by a suitably experienced person.

Option 2: Containment Strategy

If the works programme does not allow sufficient time for a pre-works eradication to be carried out, there is the option of containing the problem to prevent corms of Montbretia and bulbs and seeds of bluebells being dispersed in either demolition material or in soil etc during the ground works phase.

- For this to be effective, the plant must be excavated to a depth of a minimum of 75cm and a minimum of a 75cm radius from the plant to ensure that all corms have been removed.
- This material must then be deposited in an area of the garden where it will be unaffected by the proposed works.
- This area must be clearly defined, and an exclusion zone set up and enforced.
- The legal implications of allowing or causing the plant to spread must be covered in any site inductions.

- Once the plant has been contained, a decision can be made regarding whether or not to initiate an eradication programme as it is not illegal to grow the plant in a garden situation. It is however recommended that it is eradicated as the plant can easily spread beyond garden boundaries.

9.1.5 *Scrub*

No mitigation measures are required for the loss of areas of scrub habitat due to the limited range of common and widespread species present. Again, there are potential protected species issues that will need to be taken into consideration during the site clearance phase, in particular nesting birds, and hedgehogs.

A large area of this scrub on a rocky outcrop on the site is also to be retained as part of the proposals.

9.1.6 *Watercourse*

In the case of the watercourse, due to the potential for any pollution incidents to have a negative impact in the wider landscape, extending the 'zone of influence' of the proposals outside the site boundaries, precautionary measures will be required to be in place.

To minimise the risk of a pollution incident occurring during the course of the works, the current guidance for working in proximity to watercourses must be adhered to. This can be found at:

https://www.netregs.org.uk/media/1418/gpp-5-works-and-maintenance-in-or-near-water.pdf?utm_source=website&utm_medium=social&utm_campaign=GPP5%2027112017

Due to the heavily vegetated nature of the watercourse, there are potential protected species issues that will need to be taken into consideration, in particular nesting birds and hedgehogs.

9.2 Protected Species

9.2.1 *Bats*

No bats or bat roosts will be lost, damaged, or disturbed as part of the proposals. No mitigation measures are therefore required.

It is however recommended that the opportunity to enhance the habitat for bats is taken by providing new roosting opportunities as detailed in Section 10.1.

9.2.2 *Habitat Fragmentation*

The following recommendations are made with regards to any installation of exterior lighting in relation to the potential habitat connectivity issues regarding the retained woodland strip on the northern site boundary and the retained woodland outside the southern site boundary, which conform to current guidelines, (BCT, 2018). These are also the two locations recommended for the inclusion of new bat roosts in the fabric if the buildings.

- All exterior lighting on these elevations will be 'low level' and will be movement activated.
- The illumination used will be 'Light Emitting Diodes' (LEDs).
- The illumination will be directional and downward facing to avoid illumination of the wider area, or the entrances to the new bat tubes. This is easily achieved when using LEDs.
- There must be no upward illumination in any direction where it could inhibit bat movements.
- There must be no illumination of the tree lines to the north and the woodland outside the southern boundary.
- The aim of any lighting plan must be for there to be no illumination in excess of 0.5 Lux within one metre of these two habitat features.
- All luminaires will lack any UV component.
- Luminaires with a 'warm white' spectrum should be used, (ideally <2700 Kelvin) to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the light component most disturbing to bats.
- The location of exterior lights must be clearly shown on the architect's drawings submitted with the planning application.

9.2.3 *Hedgehogs*

To prevent the killing or injury of hedgehogs, it is recommended that the scrub habitat is initially cut by hand under the supervision of a site ecologist. Any animals found during this operation can then be moved to a place of safety prior to machinery commencing work on the site.

To prevent hedgehogs, and other animals becoming trapped, any excavations left open overnight must be fitted with escape ramps.

To allow hedgehogs to move freely post-development, the new garden boundaries must be permeable to hedgehogs. This involves creating small holes in fencing or walls (13cm x 13cm) at ground level or using permeable fencing/hedging. These are easy to include for most fencing contractors and both wooden and concrete hedgehog-friendly boards can be purchased from some supplier's ready-made.

9.2.4 *Nesting Birds*

Any vegetation removal in habitats where nesting birds may be present must take place outside the nesting season, recognised as 1st March – 31st August to avoid potential disturbance to nesting birds.

To minimise the loss of foraging, it is recommended that plant species of benefit to birds are included in the landscaping scheme, with particular attention given to species which produce fruit and berries. The following species are considered appropriate:

Hawthorn; (*Crataegus monogyna*)
Blackthorn; (*Prunus spinosa*)
Holly; (*Ilex aquifolium*)

Elder; (*Sambucus nigra*)
Dog rose; (*Rosa canina*)
Guelder rose; (*Viburnum opulus*)
Rowan; (*Sorbus aucuparia*)
Whitebeam; (*Sorbus aria*)
Cherry; (*Prunus avium*)
Bird cherry; (*Prunus padus*)
Cherry plum; (*Prunus cerasifera*)
Crab apple; (*Malus sylvestris*)

It is difficult to compensate for the loss of nesting habitat in dense scrub as this habitat will be used by a range of species, including migrants. These species are likely to be different from the species which use nest boxes, as nest boxes tend to replicate small tree hollows. The provision of nest boxes is however seen as beneficial and can be used to target certain species of conservation concern. In this case it is recommended that, due to the conservation status of the species, that colony nest boxes for house sparrows; (*Passer domesticus*) are provided. Models are available that are intended to be an integral part of the fabric of a new building, and as a result, these boxes are permanent. It is recommended that a minimum of 15 boxes are provided, and that the location of the boxes is clearly shown on the architect's drawings following consultation with the site ecologist.

It is recommended that 'woodcrete' products such as the 1SP Schwegler Sparrow Terrace (see Figure 10) are used due to woodcrete's favourable insulative properties and weather resistance.

Figure 10: Example of a house sparrow colony box.

9.2.5 *Red Squirrels*

Due to the retention of the woodland habitats, no mitigation measures for red squirrels are required.

9.2.6 *Reptiles & Amphibians*

No mitigation measures for reptiles and amphibians are required.

10 Biodiversity Enhancement & Green Infrastructure Statement

Under Chapter 6 of Planning Policy Wales 11, planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. It is also a priority for developments in Wales to consider ecosystem resilience and green infrastructure in the development of enhancement schemes. To satisfy this requirement, a green infrastructure statement must be submitted to accompany all planning applications.

The location of all biodiversity enhancements must be clearly shown on final plans for the development.

10.1 Biodiversity Enhancement

10.1.1 *Red Squirrels*

The following species are recommended for inclusion in the landscaping scheme to provide additional high value food sources for red squirrels.

- Oak; (*Quercus petraea*)
- Sweet chestnut; (*Castanea sativa*)
- Hazel; (*Corylus avellana*)
- Cherry; (*Prunus avium*)
- European walnut; (*Juglans regia*)

The enhancement of connectivity of the woodlands, especially arboreal linkage between the retained woodland strip on the northern boundary and the woodland outside the southern boundary would provide a significant biodiversity gain. Red squirrels spend around 70% of their time in the canopy and do not like to have to cross open areas. This could also be particularly valuable due to the potential for new residents to own domestic cats which can predate on squirrels. The provision of tree canopy links would help to minimise the risk of squirrel fatalities (see figure 11).

Figure 11: Red squirrel habitat connectivity

A study in 1994–1997 in a coniferous forest in Lancashire, UK (Shuttleworth, C. 1999) found that red squirrels *Sciurus vulgaris* used all and bred in some nest boxes. Red squirrels used all boxes within the first three months of placement and used 16-26% of boxes for breeding each year.

There is therefore the potential to enhance the site for red squirrels via the provision of nest boxes (see figure 12).

It is recommended that at this stage, two boxes are provided on trees in the retained woodland strip on the northern boundary of the Maes Mona section of the site. As squirrels are territorial, this number would probably be adequate and providing more boxes wouldn't necessarily result in more squirrels.

Figure 12: Example of a red squirrel nest box.

10.1.2 *Bat Roosts*

It is also recommended that new bat accommodation is built into the new properties. There are a number of 'Bat Tubes' available which would be ideal for this purpose as they are built into the fabric of the buildings. These are very discreet as they are rendered over leaving only the small access point exposed. It is recommended that one bat tube is built into the northern elevation of each building facing the northern site boundary with the retained woodland strip, and on the southern elevations of the properties facing the woodland outside the southern site boundary. These locations should be unaffected by lighting, and where the surrounding habitat provides connectivity. This will result in the provision of a minimum of 16 bat tubes. These bat tubes must be clearly shown on the architect's drawings in suitable locations following consultation with the site ecologist.

10.1.3 *Bee Bricks*

A total of thirty-five bee bricks should be included in the fabric of the new properties (see figure 13). These features should be installed as high up as possible (at least 1m above ground level) on a south-facing elevation.

These products only attract solitary bees and do not therefore cause any problems to the householder. Solitary bees have no queen or honey to protect and as a result are non-aggressive and won't sting.

Many solitary bees have undergone a serious decline in recent years and the provision of bee bricks could be a valuable aid to their recovery, in addition to contributing to the value of the B Lines Cymru area in which the Maes Mona site lies.

The location of the bee bricks must be clearly shown on the architect's drawings.

Figure 13: Examples of bee bricks.

10.1.4 *Hedges*

It is recommended that this opportunity is taken to replant the defunct hedge on the site boundary and that the diversity of species is increased.

The following species are considered appropriate:

Hawthorn; (*Crataegus monogyna*)
Blackthorn; (*Prunus spinosa*)
Holly; (*Ilex aquifolium*)
Hazel; (*Corylus avellana*)
Elder; (*Sambucus nigra*)
Dog rose; (*Rosa canina*)
Guelder rose; (*Viburnum opulus*)
Rowan; (*Sorbus aucuparia*)
Whitebeam; (*Sorbus aria*)
Cherry; (*Prunus avium*)
Bird cherry; (*Prunus padus*)
Cherry plum; (*Prunus cerasifera*)
Crab apple; (*Malus sylvestris*)

10.1.5 *Ornamental Planting*

In some cases, such as landscaping within the gardens of the houses, it may be more appropriate to utilise exotic/ornamental species. Advice on beneficial species can be obtained from the North Wales Wildlife Trust at: https://www.northwaleswildlifetrust.org.uk/take-action/wildlife-gardening

There are however a number of plant species to avoid in any planting scheme for the site, as they can become invasive and/or cause long-term problems. The *Cotoneaster* genus is a prime example. Almost all of this species produce a profusion of flowers in spring which attract an equally profuse quantity of pollinating insects, particularly bees. The plant then produces a large crop of berries, which are eaten by birds and most 'wildlife gardening' sources heartily recommend the planting of *Cotoneasters.* The problem however lies with this attractiveness of the berries to birds. There is no way of controlling the spread of *Cotoneaster* into the wild via seeds deposited in bird's droppings. This spread can be over vast distances.

As a result, five *Cotoneasters* are listed as INNS under the Wildlife & Countryside Act. While it is not illegal to grow these plants in a garden situation, it is recommended that they are avoided due to this lack of control over the spread of the species into the wild. The five to avoid are *C. horizontalis, C. simonsii, C. integrifolius, C. Bullatus & C. microphyllus.*

Provided that these five are avoided, the planting of this species can be very beneficial to biodiversity in a garden situation.

The planting of *Buddleia* is also widely recommended in many sources. Again, care should be taken with regards to cultivar/species selection. While not listed as 'invasive' it is recommended that the planting of *B. davidii* is avoided. There are however some *Buddleias* worthy of consideration. Their common name of 'butterfly bush' is deserved and *B. x weyeriana* is a hybrid that is worth consideration along with *B. fallowiana alba.*

10.2 Green Infrastructure Statement

Details regarding how each biodiversity enhancement measure improves ecosystem resilience and green infrastructure are given below-

- Habitat improvements for red squirrels: The proposed measures will improve habitat connectivity for this species in what is currently a fragmented landscape. This has the potential to allow the expansion of this species for which Ynys Môn is a national stronghold.
- The native tree planting will also provide a valuable food source for a variety of taxa. The profusion of flowers and fruit produced by the species recommended will provide a food source for invertebrates, helping to improve connectivity for this taxon. The increase in invertebrate populations supported by these trees will provide a food source for swifts and bats as well as other birds. Fallen fruit will attract invertebrates which will provide a food source for hedgehogs. Tree planting will improve connectivity for a wide range of taxa and provide valuable habitats features such as nesting opportunities for birds.

- Nest boxes for red squirrels: These features have the potential to improve breeding productivity and population recruitment for red squirrels by providing secure nest sites in an area where the trees are too young to yet have developed safe nesting cavities.
- Bat tubes: These features are to be installed in a minimum of 16 new properties, providing roosts for bats in a situation where there is currently no roosting potential. These features will improve connectivity for crevice-dwelling bat species by acting as a 'stepping stone' and allowing the species to radiate into wider habitats. The provision of new roosting opportunities as well as the improvement of habitat connectivity via hedge planting will hopefully greatly improve the value of the site for bats.
- Bee bricks- these features will improve connectivity by offering nesting sites which will act as 'stepping-stones' for solitary bee species, allowing radiation into wider habitats. Many solitary bee species have shown a significant decline over recent years.
- Hedge Planting – The main purpose of the hedge planting is to improve connectivity across the site. The new cover provided by the hedge planting will enable taxa such as hedgehogs, and invertebrates to safely cross the site and so commute between habitats present in the local area. Linear features such as hedgerows are often used as navigational aids for bat species, meaning that this hedge planting will also improve connectivity for bats within the wider landscape. As with the tree planting, this hedge planting will also increase foraging opportunities for an array of taxa as well as provide a very valuable habitat and habitat features such as nesting opportunities for birds.

Table 3 below shows how the 'stepwise' approach has been implemented in order to achieve the goals of chapter 6 of the planning policy Wales (Updated 2023).

Table 3- How the stepwise approach will be implemented on this development.

Stepwise Step	**How the step has been implemented**
1- Avoid	Any negative impact on bat roosts will be avoided as there is no potential for any roosts to be impacted. Any negative impact on hedgehogs will be avoided via the supervision of clearance works, RAMs during the construction/ground-works phase and the provision of hedgehog permeable garden boundaries. Any negative impact on nesting birds as a result of disturbance will be avoided via the timing of any clearance works. Any negative impact on habitats in the wider landscape will be avoided via the adoption of pollution prevention measures. Any negative impact on protected/designated sites will be avoided due to their distance from the site and lack of connectivity
2 – Minimise	Any negative impact on bat movements will be minimised by adhering to the guidance relating to exterior lighting.

	Any negative impact on retained trees will be minimised by the adherence to the root protection zones detailed in the arboricultural report. Any negative impact due to the presence of INNS will be minimised via the adoption of an eradication programme.
3 – Mitigate	Loss of nesting habitat for birds will be mitigated for by the provision of nest boxes and loss of foraging habitat will be taken into account in the new planting scheme.
4 – Onsite compensate	N/A
5 – Offsite compensate	N/A

11 Legal Implications

11.1 Hedgehogs

The hedgehog is a priority species across North Wales, including Anglesey and is included in Section 7 of the Environment Wales Act (2016) as a species of importance to the maintenance and enhancement of Biodiversity in Wales.

11.2 Nesting Birds

Under the Wildlife and Countryside Act 1981, all nesting birds and their nests are protected. Once a bird places a single piece of material then it constitutes a nest. It is then an offence to cause damage to the bird, nest, eggs or chicks and immediate habitat which is likely to result in damage by causing the bird to desert its nest. This covers all bird species, with a small number of exceptions (pest species which can be controlled by special license.

In 2000, the Countryside and Rights of Way Act (CROW Act) was made law, strengthening the legal protection for many species, and introducing a 'reckless disturbance' offence. Planning Authorities are also obliged to take nesting birds into account in relation to planning decisions following guidance from the Welsh Government detailed in Technical Advice Note (TAN) 5.

11.3 Red Squirrels

The red squirrel is classified as near threatened by the IUCN on the Red List and is listed under Appendix III of the Berne Convention. It is threatened in the UK and protected under Schedules 5 & 6 of the Wildlife & Countryside Act (as amended).

They are also a 'Priority BAP Species' listed under what is now Section 7 of the Environment Wales Act (2016) which places an obligation on all Competent Authorities to consider these species in all of their activities, including planning and development issues.

12 References

Bat Conservation Trust (2018) Bats and artificial lighting in the UK.

Cambrian Ecology (2020) Ecological Assessment, Land at Bull Bay Road, Amlwch

Cambrian Ecology (2020) Preliminary Ecological Assessment & Reptile Surveys, Land at Maes Mona, Amlwch.

Environment (Wales) Act 2016

O'Connor, L. (2022) BS.5837/2012 Tree Impact Assessment, Maes Mona, Amlwch

Wildlife and Countryside Act (1981)

Shuttleworth C.M. (1999) The use of nest boxes by the red squirrel *Sciurus vulgaris* in a coniferous habitat. *Mammal Review*, 29, 61-66

13 Appendices

13.1 Site photographic record

The grassland habitat by the Bull Bay Road entrance.

Spanish bluebells near the Bull Bay Road entrance.

Montbretia.

The scrub habitats which are now regularly managed.

A combination of scrub and tall ruderal habitats.

Native bluebells.

Tall ruderal vegetation dominated by rosebay willow-herb.

Dense bramble scrub.

Diseased ash trees on the boundary between the Maes Mona and Bull Bay Road sections of the site.

Dense gorse and the retained broadleaved woodland on the Maes Mona section of the site.

Above & below: The interior habitat of the retained broadleaved woodland.

Spanish bluebells in the broadleaved woodland.

The improved grassland of the Maes Mona section of the site.

The watercourse which was dry at the time of the surveys.

Willow scrub along part of the dry watercourse.

13.2 Phase 1 Habitat Map: Maes Mona Section

Key

- Broadleaved Woodland
- Defunct Hedge
- (I) Improved Grassland
- Scrub
- Tall Ruderal
- Watercourse
- Spanish Bluebells
- *Ue* *Ulex europaeus*
- *Sx* *Salix spp*

Key

	Broadleaved Woodland
N	**Neutral Grassland**
	Scrub
	Tall Ruderal
	Tall Ruderal/Scrub Mosaic
	Trees
	Montbretia
	Spanish Bluebells

13.3 Review Table

Name	**Task**	**Date**
Chris Hall	Author	17.04.2024
Kate Williamson	Review	25.04.2024
Heaven Kyriacou	Proof Reading	28.04.2024