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

chris@cambrianecology.com
07765 254035 (Chris Hall)

Preliminary Ecological Assessment Report
Ardagh Metal Packaging
Proposed New Building Extension and Tank Construction

18th November 2025



Report by: Heaven Kyriacou

Client: Andy Clarke (on behalf of TACP Architects)

Planning Authority: Wrexham County Borough Council

Grid Reference: SJ 37900 49770 (approximate site centre).

CONTENTS **Page No**

1. Summary 3
2. Introduction 5
3. Methodologies 6
4. Survey Limitations 7
5. Results 7
6. Habitat Evaluation & Impact Assessment 15
7. Species Evaluation & Impact Assessment 15
8. Protected Sites Impact Assessment 17
9. Mitigation Measures 17
10. Legal Implications 24
11. References 25
12. Appendices 25

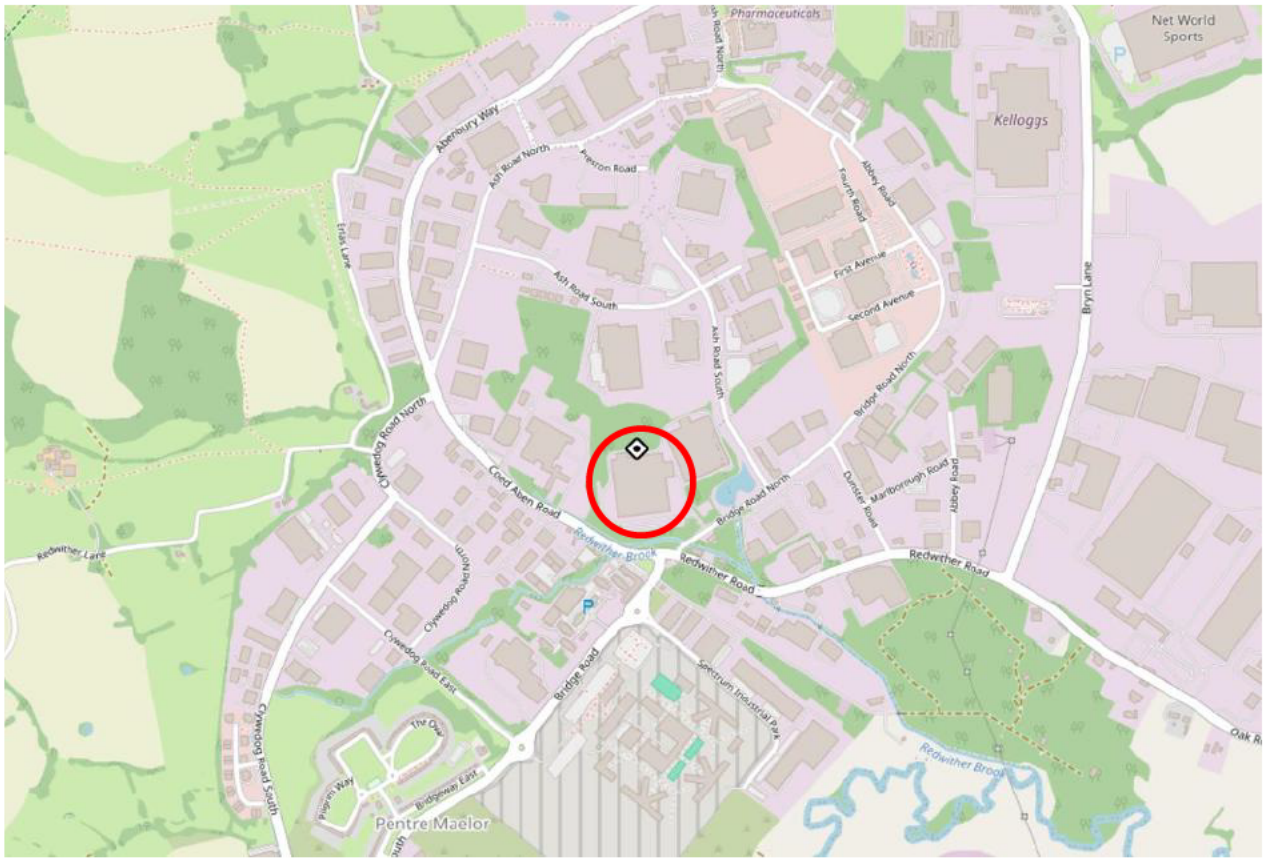


Figure 1: Site Location.

Preliminary Ecological Assessment Report
Ardagh Metal Packaging
Proposed New Building Extension and Tank Construction

18th November 2025

1. Summary

A Preliminary Ecological Assessment (PEA) was carried out by Cambrian Ecology on 11th November 2025 of land at Ardagh Metal Packaging, Bridge Road, Wrexham LL13 9PS. It is proposed to extend the current packaging plant and construct two 40,000 litre external tanks (see Figure 2). The scheme is currently only schematic with plans yet to be produced with this survey being part of a larger feasibility study.

The survey revealed that the habitats which will be impacted by the proposals are an area of amenity grassland with scattered trees and ornamental planting for the tank construction, and an area of amenity grassland, dense scrub and immature broadleaf woodland for the extension.

The building to be extended does not have any signifciant potential to support roosting bats or nesting birds.

Within the grassland areas the species present are mostly common and widespread, although what is believed to be bee orchids; (*Ophrys apifera*) were recorded within the grassland. Bee orchids are legally protected under the Wildlife and Countryside Act (1981), further survey work within the botanical survey period when orchids are in flower (June) will be required to establish the species presence and abundance (see Section 9.1.1). The number of trees to be lost has not been established. Further survey work including an Arboricultural survey and a Preliminary Roost Assessment (PRA) will be required prior to the works commencing to establish the extent of the tree loss and investigate if any bat Potential Roosting Features (PRFs) are present on any trees. Any trees due to be removed during the course of the works will require mitigation for their loss (see Sections 9.1.2). No invasive non-native species (INNS) were recorded onsite.

The woodland habitat provides suitable terrestrial foraging and hibernation habitat for great crested newts (GCN); (*Triturus cristatus*) which are known to be abundant within 500m of the site based on the data search results. Due to the fact that GCN along with their habitats are protected by law, a European Protected Species, (EPS) Licence will need to be obtained from Natural Resources Wales, (NRW) prior to the works taking place (see Section 9.2.3).

A biological records search was carried out as recommended in the guidance for PEAs by the Chartered Institute of Ecology & Environmental Management (CIEEM). This enables the potential impact of a development to be assessed in the context of the wider landscape and enables the ‘zone of influence’ to be taken into account.

The survey for protected species was negative, but this survey did identify the potential for bats to be commuting and foraging throughout the woodland. Some precautionary measures have therefore been recommended in relation to exterior lighting in relation to bats (see Section 9.2.1).

The data search identified a number of other protected species to be present within the search area including badgers; (*Meles meles*), hares; (*Lepus europaeus*), hedgehogs; (*Erinaceous europaeus*), herpetofauna; (reptiles and amphibians) species and polecats; (*Mustela putorius*). There is also some potential for nesting birds to be present within the dense scrub and trees to be cleared. Some 'Reasonable Avoidance Measures' (RAMs) are given in Sections 9.2.2, 9.2.3 & 9.2.4 to ensure there is no negative impact on these taxa.

There are ponds and watercourses located within 200m of the site with the closest pond located 60m away. Due to this, guidance is given in Section 9.2.3 to ensure there is no negative impact on this pond and potentially associated species, including otter; (*Lutra lutra*) and GCN as the result of a pollution incident.

Under Chapter 6 of Planning Policy Wales 12, 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 also consider ecosystem resilience and green infrastructure in the development of enhancement schemes. In this case biodiversity enhancements will be established and a Green Infrastructure Statement produced once plans have been finalised.

Key Messages:

1. **The habitats which will be impacted by the proposal are amenity grassland with scattered trees and ornamental planting, and an area of amenity grassland, dense scrub and immature broadleaf woodland.**
2. **The building to be extended has no significant potential to support roosting bats or nesting birds.**
3. **Further survey work will be required on the amenity grassland in June with relevance to orchids and on the woodland to establish tree loss and the potential presence of PRFs (see Section 9.1.1). Any trees due to be removed during the course of the works will require mitagtion for their loss (see Section 9.1.2).**
4. **Due to the presence of GCN and suitability of this habitat as foraging and hibernation habitat for this species, a licence will be required from NRW to allow the works to proceed (see Section 9.2.3).**
5. **No INNS were recorded onsite.**
6. **Recommendations are provided regarding the erection of any exterior lighting in order to prevent a negative impact on bat species through habitat fragmentation (see Section 9.2.1).**
7. **Recommendations have been made in Sections 9.2.2, 9.2.3 & 9.2.4 to avoid any impact on terrestrial fauna and nesting birds during the works.**
8. **Recommendations have been made in Section 9.2.3 to avoid any negative impacts on the adjacent ponds and watercourses and associated species as the result of a pollution incident.**

9. **Biodiversity enhancements will be established and a Green Infrastructure Statement produced once plans have been finalised.**

2. Introduction

Cambrian Ecology Ltd was commissioned by Andy Clarke (on behalf of TACP Architects) to carry out a PEA of land at Ardagh Metal Packaging, Bridge Road, Wrexham LL13 9PS.

It is proposed to extend the current packaging plant and construct two 40,000 litre external tanks (see Figure 2). The scheme is currently only schematic with plans yet to be produced with this survey being part of a larger feasibility study.

The relevant Planning Authority is Wrexham County Borough Council, which requires ecological survey reports to be submitted as an integral part of the planning application.

The proposed location of the development is in an urban location within the Wrexham Industrial Estate at Grid Reference: SJ 37900 49770 (approximate site centre).

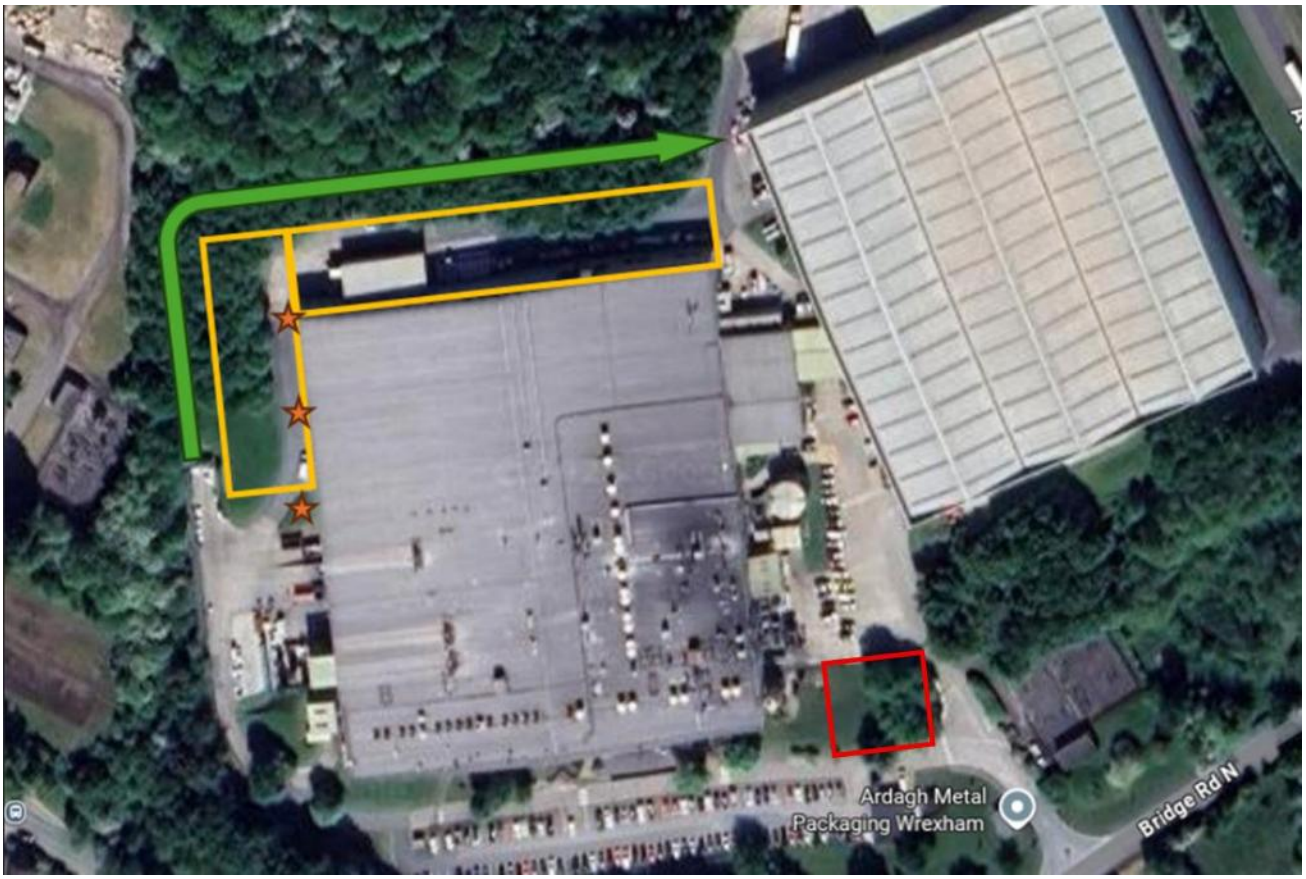


Figure 2: Proposed area for extension (yellow) and proposed area for the new tanks (red).

3. Methodologies

The surveys were carried out on 11th November 2025 by ecologists Ben Box (Bat Licence No.: S095274/1) and Heaven Kyriacou. Ben is a qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM), holds a bat survey licence from NRW and has been working with Cambrian Ecology since 2022. Prior to holding his own bat licence, he was an accredited agent on the bat licence of Chris Hall (S095271/1). Chris has been working as an independent ecologist for 16 years and has held a bat licence from CCW/NRW for 28 years. He is an associate member of CIEEM. Heaven is also a qualifying member of CIEEM and holds a great crested newt licence from NRW (No: S094756/1). Heaven is also an accredited agent on the bat licence held by Chris Hall.

3.1 Other Ecological Issues

In accordance with the guidelines from CIEEM, the presence of any other protected species was also recorded along with any potential biosecurity issues such as the presence of INNS.

3.2 Desk Study

The desktop study aims to collate existing information about priority species, habitats, and designated sites. 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 biological records search was carried out with Cofnod for all priority species, habitats, and designated sites as recommended in the guidance from 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 search parameters were 2km from the survey site area for all protected sites and species and 10km for any protected sites with specific relevance to bat species.

3.3 Habitats

The survey took the form of an extended Phase I survey, which identified baseline ecological conditions, as well as any important or notable habitats. All habitats within the proposed development site were classified, 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 as having a significant extent and/or ecological interest.
- Invasive Non-Native Species (INNS).

All habitats considered as having 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.

3.4 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 were 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.
- Nationally rare or scarce species.
- Species of Conservation Concern (e.g. JNCC Red List, RSPB/BTO Red or Amber lists).

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.

This survey was carried out later than the recognised botanical survey period, therefore further botanical surveys have been recommended.

5 Results

5.1 Desk Study

5.1.1 *Statutory Protected/Designated Sites*

The biological records search carried out with Cofnod revealed there are no relevant statutory designated sites within the 2km search area.

There are also no relevant statutory designated sites within the 10km search radius with specific relevance to bats.

5.1.2 *Non-Statutory Designated Sites*

There are three relevant non-statutory sites within the 2km search area in the form of Wildlife Sites (see Figure 3). The closest is the Wrexham Industrial Estate site which sits 0.2km away and is designated for its unmanaged grassland, ancient broadleaf woodland, species-rich grassland and complex mosaic of scrub, grassland and tall herb. The next closest is the Cefn Park site which sits 0.9km away and is designated for its fen and semi-natural broadleaf woodland. The last is the Peter's

Dingle site which sits 1.8km away and is designated for its ash/oak woodland along a brook and semi-natural broadleaf woodland.

The site also lies within a Welsh B-Lines area. These areas comprise a network of linear sites deemed of greater importance for pollinator habitat connectivity (see Figure 4).

The site also lies 0.6km from the Northeast Wales Important Invertebrate Area. These areas are specific locations identified as being nationally or internationally significant for invertebrate populations and their habitats (see Figure 5).

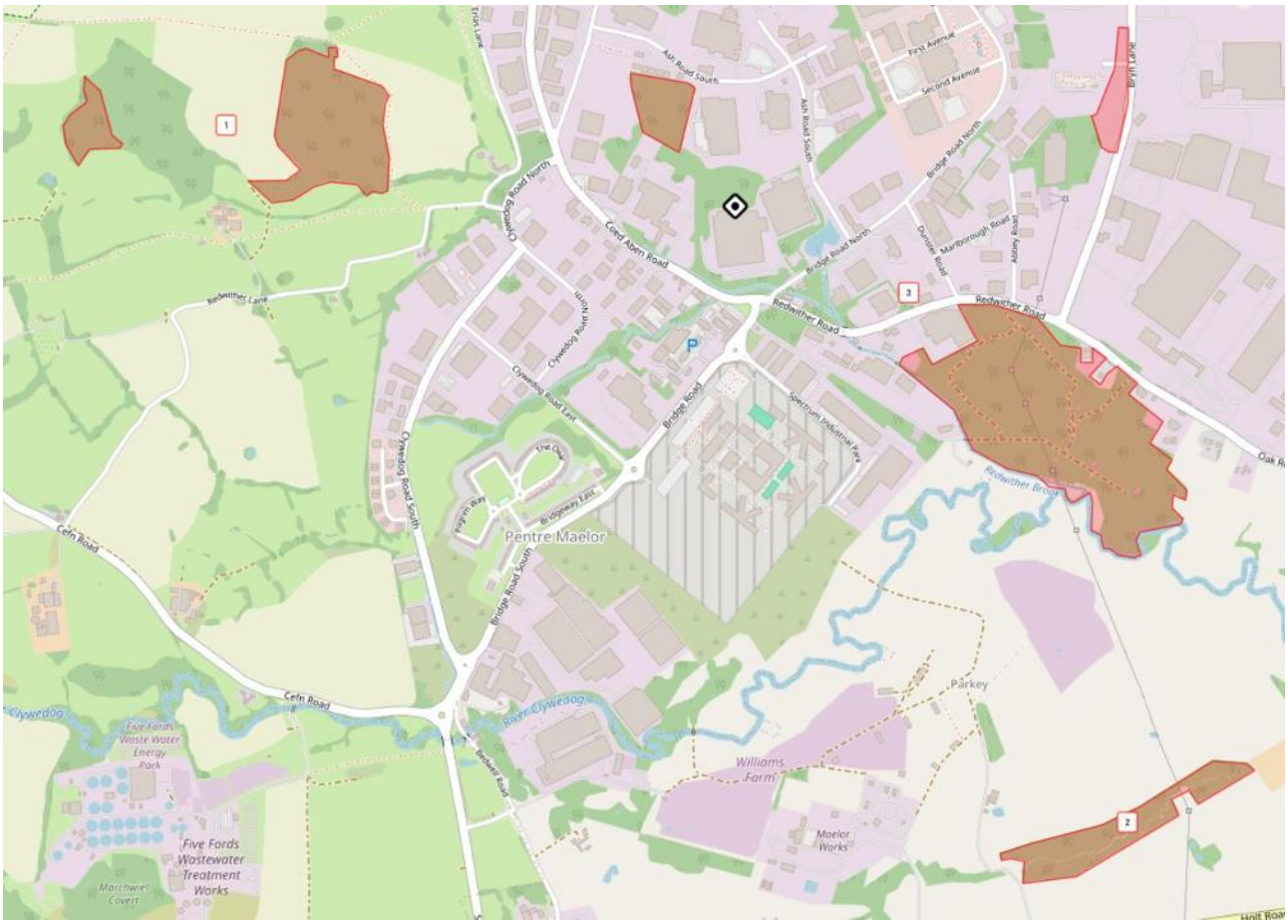


Figure 3: The location of the survey site in relation to the Wildlife Sites (red) including the Wrexham Industrial Estate site (3), the Cefn Park site (1) and the Peter's Dingle site (2).



Figure 4: The location of the B Lines Cymru site (black).

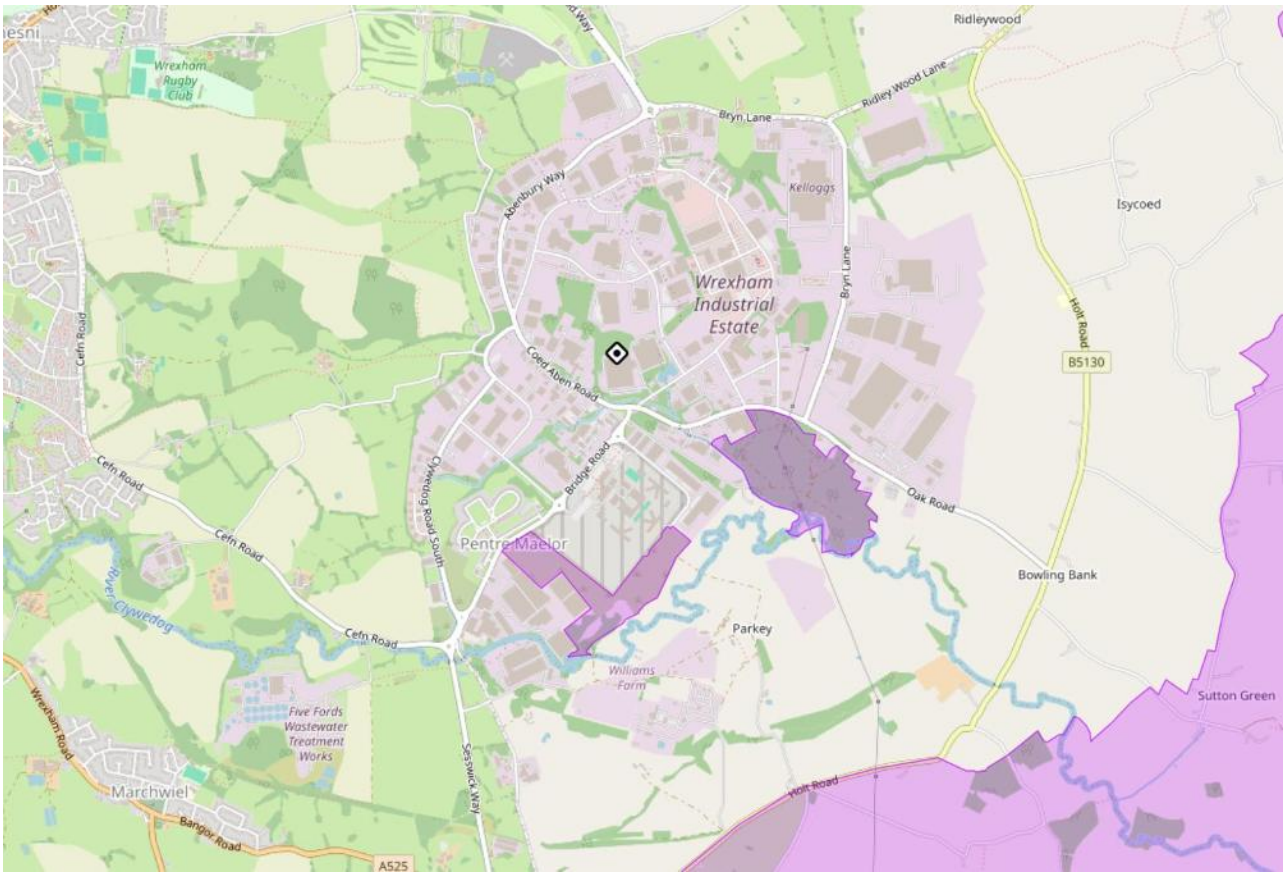


Figure 5: The location of the Northeast Wales Important Invertebrate Area (Purple).

5.1.3 *Protected Species*

There are a number of relevant protected species records within the data search radius which are presented in Table 1 below. Most relevant are the very high number of great crested newt records, these likely arise from surveys carried out prior to the industrial estate being constructed and the monitoring of mitigation ponds provided as a result of the development of the industrial estate.

Table 1: Protected species within the 2km radius search area.

Common Name	**Zoological Name**	**No of Records**
Adder	*Vipera berus*	2
[redacted]	[redacted]	[redacted]
Bat (species unknown)	*Chiroptera spp*	3
Brown long-eared bat	*Plecotus auritus*	5
Common frog	*Rana temporaria*	43
Common lizard	*Zootoca vivipara*	1
Common toad	*Bufo bufo*	28
Common pipistrelle	*Pipistrellus pipistrellus*	11
Daubenton's bat	*Myotis daubentonii*	2
Grass snake	*Natrix helvetica*	1
Great crested newt	*Triturus cristatus*	204
Hare	*Lepus europaeus*	1
Hedgehog	*Erinaceous europaeus*	5
Lesser Horseshoe bat	*Rhinolophus hipposideros*	2
Lissotriton newt (species unknown)	*Lissotriton*	50
Myotis bat (species unknown)	*Myotis*	2
Natterer's bat	*Myotis nattereri*	1
Noctule bat	*Nyctalus noctula*	5
Otter	*Lutra lutra*	5
Palmate newt	*Lissotriton helveticus*	13
Pipistrelle bat (species unknown)	*Pipistrellus*	1
Polecat	*Mustela putorius*	4
Smooth newt	*Lissotriton vulgaris*	90
Slow worm	*Anguis fragilis*	2
Soprano pipistrelle	*Pipistrellus pygmaeus*	3
Whiskered/Brandt's bat	*Myotis mystacinus/brandtii*	7

5.2 Habitat

The proposed development site is within a large active industrial estate. The site is made up of the packaging plant which is surrounded on the north, west and south elevations by grassland and stands of immature woodland with the largest to the north of the site where the new extension is proposed. The industrial estate as a whole is dotted with woodland and grassland which is not always well connected. Ponds and watercourses are also spread around the estate with many within 200m of the site (see Figure 6).

The area for the proposed new tanks includes amenity grassland with scattered trees and ornamental planting. The trees may need removing for the new tanks to be put in place, but this is yet to be confirmed. This site is directly next to roads and parking. The main building for the proposed extension is the metal packaging centre which is metal clad with no significant bird nesting or bat roosting potential. This building is surrounded by amenity grassland, immature broadleaf woodland and some areas of scrub (see Figure 2).

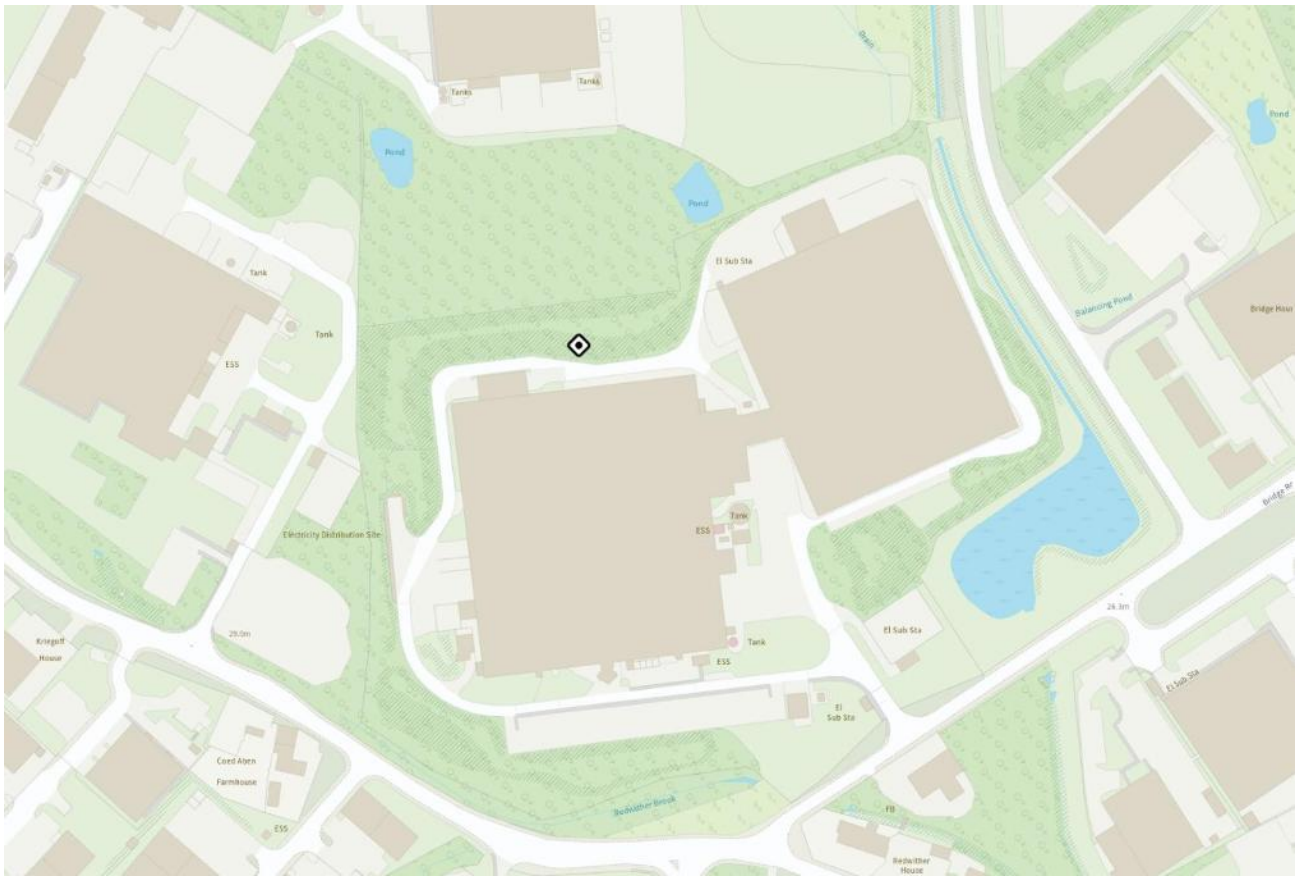


Figure 6: The location of the closest ponds and watercourses to the site (white diamond).

5.2.1 *Proposed New Tanks*

Amenity Grassland

Species in this habitat include white clover; (*Trifolium repens*), perennial ryegrass; (*Lolium perenne*), yarrow; (*Achillea millefolium*), creeping buttercup; (*Ranunculus repens*), common sorrel; (*Rumex acetosa),* common cats-ear; (*Hypochaeris radicata*), hoary plantain; (*Plantago media*), common daisy; (*Bellis perennis*) and orchid; (*Orchidaceae spp*) which could potentially be bee orchid, although it is not possible to get a positive ID outside of the active growing season. There are a number of records of this species within the data search radius (see Figure 7).

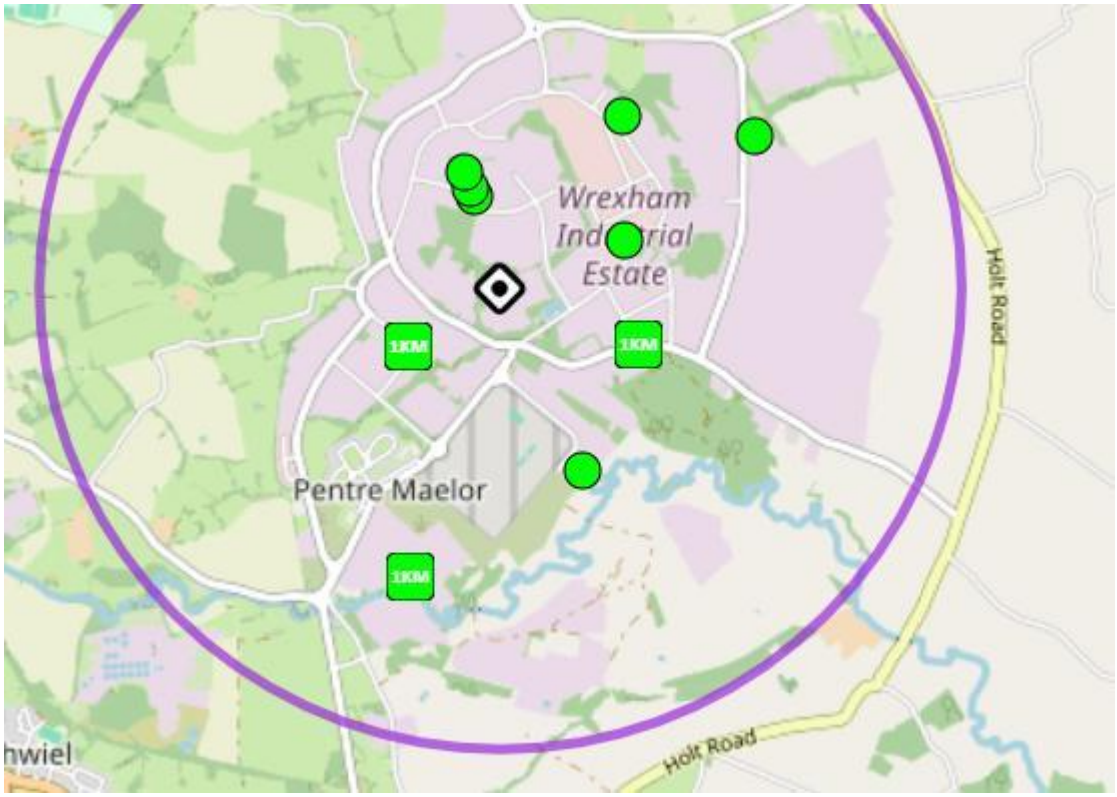


Figure 7: Location of bee orchid records

Scattered Trees

Species in this habitat include Scots pine; (*Pinus sylvestris*), wild cherry; (*Prunus avium*) and northern red oak; (*Quercus rubra*).

5.2.2 *Proposed New Extension*

Amenity Grassland

Species in this habitat include Yorkshire fog; (*Holcus lanatus*), creeping buttercup, yarrow, dandelion; (*Taraxacum officinale*), ribwort plantain; (*Plantago lanceolata*), creeping thistle; (*Cirsium arvense*), oxeye daisy; (*Leucanthemum vulgare*), white clover, common vetch; (*Vicia sativa*), black knapweed; (*Centaurea nigra*), red clover; (*Trifolium pratense*), bush vetch; (*Vicia sepium*), cleavers; (*Galium aparine*) and primrose; (*Primula vulgaris*).

Immature Broadleaf Woodland and Scrub

Species in this habitat include bramble; (*Rubus fruticosus)*, sessile oak; (*Quercus petraea*), wild cherry, common nettle; (*Urtica dioica*), broadleaf dock; (*Rumex obtusifolius*), hawthorn; (*Crataegus*

monogyna), silver birch; (*Betula pendula*), ash; (*Fraxinus excelsior*), field maple; (*Acer campestre*), dog rose; (*Rosa canina*), hazel; (*Corylus avellana*), holly; (*Ilex aquifolium*), garden privet; (*Ligustrum ovalifolium*) and old man's beard; (*Clematis vitalba*).

5.2.3 *Surrounding Habitat*

The immediate surrounding area consists of the industrial estate, amenity grassland, dense scrub, semi-natural broadleaf woodland and standing water (see Figure 8).

The wider landscape consists of more of the above habitats along with ephemeral/short perennial vegetation, and semi-improved neutral grassland (see Figure 9).

Connectivity to the site is good with treelines and hedgerows around the site connecting to other areas of woodland but many of these woodlands are isolated.



Figure 8: Aerial photograph of the immediate surrounding area.



Figure 9: The proposed development site (red) in relation to the wider landscape.

5.3 Protected Species

5.3.1 *Bats*

As the trees potentially due for removal are currently unknown, they could not be effectively inspected for bat PRFs. Therefore, the potential impact on bat roosts within the scope of the proposals could not be assessed. The packaging plant to be impacted by the works has no bat PRFs.

There is the potential for bats to be commuting or foraging around the area on occasion with areas of habitat considered optimal for some bat species such as stands of woodland present in the surrounding landscape.

5.3.2 [redacted]

5.3.3 *Herpetofauna*

There was no evidence of the presence these species on the site although there is a high potential for them to be present on occasion as records were listed within 2km on the Cofnod database. The probability of presence is increased due to the potential hibernacula onsite including deep cracks in the soil creating underground crevices. Broad-leaved woodland is known to support higher densities

of GCN with their need for underground crevices, tree root systems, mammal burrows and thick ground cover such as leaf litter and dead wood (Froglife, 2001). There are 204 records of GCN within 2km and the closest record within 100m from the site boundary. The presence of several nearby waterbodies further increases the likelihood of amphibian presence on the site.

5.3.4 *Nesting Birds*

There is some potential that the dense scrub, woodland and scattered trees could support nesting birds at the appropriate time of the year; however, no evidence of bird nesting was recorded during the survey.

5.3.5 *Otters*

There is potential for otters to be using the nearby waterbodies and watercourses for foraging and commuting.

5.3.6 *Other Protected Species*

There was no evidence of any other protected species during the surveys.

6 Habitat Evaluation & Impact Assessment

6.1 Amenity Grassland, Scrub & Ornamental Planting

Loss of these habitats would have no significant negative ecological impact. These habitats show an impoverished species assemblage with the species present mostly being common and widespread. Issues regarding protected species potentially utilising this feature will need to be considered. The use of this habitat by GCN will require consideration (see Section 9.2.3) along with the potential presence of bee orchids (see Section 9.1.1).

6.2 Immature Broadleaf Woodland and Scattered Trees

Loss of any scattered trees onsite could have a negative impact at a local level due to their value as a habitat and connective feature for some protected species. Issues regarding protected species potentially utilising these trees will also need to be considered. The loss of immature broadleaf woodland has the potential to have a significant negative ecological impact at a local level depending on the scale of habitat loss. Any losses will be required to be mitigated for with the use of compensatory new planting as detailed in Section 9.1.2.

7 Species Evaluation & Impact Assessment

7.1 Bats

7.1.1 *Roost Loss/Disturbance*

As the number and condition of trees due for removal is currently unknown, they could not be effectively inspected for bat PRFs. Therefore, the potential negative impact on bats as a result of roost loss/disturbance could not be assessed as it is not yet known if any potential roosts will be lost or damaged or disturbed as a result of the proposals.

7.1.2 *Habitat Fragmentation/Exterior Lighting*

Habitat fragmentation can have a negative impact on bats, particularly species which are heavily reliant on linear landscape features. Any interruption/severing of flight paths, either physical or due to inappropriate lighting, can not only result in the bats being unable to access foraging areas but also cause the abandonment of roosts as a result (BCT 2018). The impact is primarily on the slower-flying *Rhinolophus,* as well as *Myotis* and *Plecotus* species. Even species such as pipistrelles can be inhibited from flying across very open, illuminated areas.

Provided the recommendations with regard to lighting are adhered to, any negative impacts as a result of inappropriate lighting will be avoided (see Section 9.2.1).

7.2 Badgers, Hares, Hedgehogs and Polecats

There is some minor potential for these taxa to be present on the site on occasion. The primary risk to these taxa on construction sites comes from entrapment within excavations and/or pipelines left open overnight. Entrapment could result in the death or injury of individual animals, which could have a negative impact on the species affected at a local level.

Additionally, the dense scrub and woodland understorey present has the potential to support daytime concealment by hedgehogs and other terrestrial fauna. The insensitive clearance of vegetation has the potential to result in the injury or death of individual animals and so have a negative impact on the species affected at a local level.

7.3 Herpetofauna Including GCN

These taxa face the same risk of entrapment in open excavations as mentioned in section 7.2 above.

Herpetofauna also face the risk of death or injury of individual animals whilst taking refuge in building material left onsite during the development stage if commuting across the site.

Additionally, the dense scrub and woodland present offers potential foraging and hibernation habitat for amphibian species. The insensitive clearance of this vegetation has the potential to result in the injury or death of individual animals and an overall reduction in hibernacula opportunities and so have a negative impact on the species affected at a local level.

There is also the potential for a pollution incident to occur on site and impact on ponds and watercourses in close proximity to the site. This could result in the direct mortality of amphibian species which are particularly vulnerable to pollution due to the permeable nature of their skin. This

in turn could result in a reduction in prey biomass for grass snakes. Any negative impact on freshwater habitats and any associated protected species would be directly proportional to the scale of any pollution incident to occur.

Additionally, higher activity levels on the site could have the potential to result in the disruption or injury of commuting amphibian species in their terrestrial phase.

7.4 Nesting Birds

It is likely that the dense scrub, woodland and scattered trees could support nesting birds at the appropriate time of the year. Many of these potential nesting features will be lost as a result of the proposed works and there is a risk of the disturbance of active nests which could have an impact on the affected species at a local level. Any such negative impact would be only minor and restricted to a local level.

7.5 Otter

There is also the potential for a pollution incident to occur on site and impact the nearby ponds and watercourses. If this were to occur, this could result in a reduction in prey biomass for otters. Any negative impact would be directly proportionate to the scale of any pollution incident to occur.

7.6 Other Protected Species

There is no potential for any other protected species to be present or impacted by the proposals.

8 Protected Sites Impact Assessment

8.1 Peter's Dingle Wildlife Site

Due to the proximity of Redwither Brook and ponds to the site, there is the potential for any pollution to occur to have a negative impact on the above site if pollutants enter the ponds and watercourse. Some basic precautionary measures for working close to water are given in Section 9.2.3 to ensure no negative impact occurs.

8.2 Other Protected Sites

Due to the lack of any other potential pathways of influence, it is not anticipated that there will be any negative ecological impacts on any other sites.

9 Mitigation Measures

9.1 Habitats

9.1.1 *Amenity Grassland*

Loss of this habitat would have no significant ecological impact. Due, however, to the potential presence of orchids which are believed to be bee orchids and that this species is legally protected under the Wildlife and Countryside Act (1981), further survey work of the amenity grassland habitat within the botanical survey period when orchids are in flower (June) will be required to establish the species present and abundance. If it is established that these are a protected species, the orchids may need translocating to a suitable area onsite which will not be impacted by the works prior to the works commencing.

9.1.2 *Scrub & Ornamental Planting*

Loss of these habitats would have no significant ecological impact, therefore no mitigation measures will be required. There are however protected species issues which will be required to be taken into consideration, in particular GCN (see Section 9.2.3) and nesting birds (see Section 9.2.4).

9.1.3 *Immature Broadleaf Woodland and Scattered Trees*

An arboricultural survey will be required prior to the works commencing to establish the extent of the tree loss and potential root protection zones.

A PRA will also be required (see Section 9.2.1).

The extent of any tree loss is currently not known but loss of any trees would have a negative impact at a local level due to their value as a habitat feature for some protected species. To compensate for the loss of trees, planting must take place on the site replacing each tree on a three to one basis. New tree planting should take place in concentrated areas and not spread broadly across the site in order to mitigate for the loss of woodland habitat.

9.2 Protected Species

9.2.1 *Bats*

Roost Loss/Disturbance

Due to the number and condition of trees due for removal being unknown, the potential negative impact on bats as a result of roost loss/disturbance could not be assessed. Due to this, a PRA must take place following the completion of the arboricultural survey of all trees confirmed to require removal. This survey must take place within the winter when trees have dropped their leaves making PRFs more visible.

Habitat Fragmentation/New Exterior Lighting

To prevent any ‘light barrier’ impact and problems associated with lighting with a high UV component, the following measures will be implemented with regard to any exterior lighting on the site, which are compliant with the current guidelines (Bat Conservation Trust, 2018):

- New exterior lighting should avoid illumination of the scattered trees and woodland onsite.
- Any new exterior illumination will be movement activated.
- The illumination used will be 'Light Emitting Diodes' (LEDs).
- The illumination will all be directional and downward facing which is easily achieved when using LEDs. There must be no upward illumination.
- 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.

9.2.2 *Badgers, Hares, Hedgehogs and Polecats*

Development sites are hazardous places for hedgehogs and other terrestrial fauna with the potential for animals to become trapped in open excavations and exposed pipe systems such as storm drains, sewage pipes etc. The simple precautionary measures below have therefore been recommended.

- Escape ramps must be fitted to any excavations left open overnight to allow animals to escape.
- These excavations must be checked for the presence of animals prior to work commencing each morning.
- Any exposed pipe systems must be capped at the end of each working day and never left open overnight.
- Site hygiene with regard to food waste must be enforced to reduce the chances of animals being tempted to stray onto the construction site overnight.

In order to avoid injury or death of individual animals during clearance of dense scrub and woodland understorey it is recommended that any clearance of these habitat features are carried out in accordance with the 'Precautionary method of working for reptiles, common toads, hedgehogs, badgers and nesting birds' (Biodiversity Specification #1, Building with Nature, 2022) which is given in Section 13.1.

9.2.3 *Herpetofauna*

Due to the likelihood of occasional GCN presence on the site, prior to any works commencing, an EPS development licence from NRW will need to be acquired. The below mitigation measures will be required to be included within the conditions of any such licence.

The guidance given in Section 9.2.2 above will ensure there is no negative impact on herpetofauna including GCN as a result of entrapment in open excavations or insensitive habitat clearance.

In order to remove the risk of death or injury of individual animals during the translocation of building materials, all building materials must be stored either off the ground, indoors or on pallets.

Any spoil removed during excavations should either be kept onsite long-term, immediately removed from the site or stored in skips until it is removed.

Once it is established what exact area will be impacted by the extension a thorough search of the area will be conducted to determine any hibernacula and refugia features present onsite. Once the trees have been cut down the stumps that are left are considered as features as GCN will use the underground root systems. It is recommended that removal of any of these features including the grinding/removal of the tree stumps should take place outside of the herpetofauna hibernation period (31st October – 31st March) to prevent potential disturbance of hibernating herpetofauna species. The clearance of these features should be carried out using hand tools wherever possible and under the supervision of the site ecologist, and materials should be used to form a separate wood pile elsewhere on the site to ensure no long-term reduction in potential hibernacula and refugia for these taxa. All of these features able to be moved will need translocating prior to any vegetation clearance and one-way exclusion fencing installation.

Clearance of scrub and woodland understorey must be phased to avoid any potential negative impact on these species. The taller sections of the scrub can be cut first with the lower sections removed under supervision by an appropriately experienced ecologist outside of the herpetofauna hibernation period. Any soil stripping and must be supervised by a site ecologist to ensure there is no inadvertent harm to any protected species that may be present.

Once all potential hibernacula and refugia features that can be moved have been translocated. Temporary one-way exclusion fencing will be required to prevent GCN from entering the areas due for development. One-way amphibian fencing should be installed separating the areas of the site to be developed from the surrounding habitats and the rest of the site. This fencing should remain in place and be maintained in a functional condition until the completion of the works. ‘One-way’ fencing should be used to allow newts to cross into safe areas (outside of construction zones), whilst preventing dispersal back into the development sites (see Figure 10). The following guidelines should be followed (English Nature, 2001):

- Fencing installation should be instructed by, and if necessary carried out under the supervision of, an appropriately experienced and licenced amphibian worker.
- Engaging the services of an experienced amphibian fencing contractor, who can fine-tune construction methods to cope with the different problems associated with different soil types, is strongly recommended.
- The proposed fence-line should first be searched and cleared of amphibians if it is likely that they are present. If clearance of the fence-line is required, vegetation can be cut back, taking care to avoid damage to any resting amphibians.
- The fencing design must avoid gaps through which newts could pass, thus avoiding capture.
- The fence should be installed to the correct height and depth and with an adequate ‘under-lap’ to prevent newts from passing underneath.
- The backfill should be placed turf downwards in the trench (to suppress re-growth of grass) and well compacted to eliminate any lumps or gaps. Backfill must not remain un-compacted overnight, and all fence trenches must be filled the same day as they have been dug, as amphibians may seek shelter within any un-compacted soil or turf.

- Exclusion fencing should have an overhang or ‘top curl’ on the side facing away from the development area to prevent newts from climbing over the fence.
- The fencing membrane should be of a type that will not break down or become brittle under exposure to the elements, notably UV light. ‘1000 gauge’ transparent polythene sheeting works well in many situations, as do woven polypropylene and black polythene DPC. Ensure that the sheet width is sufficient to permit the forming of the ‘under-lap’ and ‘top-curl’ (1m is sufficient for most fences).
- The fencing membrane should be as taut as possible without noticeable creases or folds which could allow newts to climb the fence. The use of too heavy a gauge of plastic may make it difficult to remove the creases and folds, and this could be a problem on uneven ground.
- The fence should ideally be secured to the supporting posts by pads and nails or staples (not battens, which may allow newts to scale the fence).
- One-way fencing should be sloped at an angle of between 45° and 40°. This may allow amphibians to climb over into the receptor area, but prevent them from escaping back into the clearance area.
- Any joins in the membrane must be ‘curl-joined’ and well secured to a post with pads and nails. This jointing method should continue underground as well as above. Adhesive taped joins are not normally acceptable for long-term repairs to important parts of the fence, as they are not durable.
- A record of fence inspection and damage repair work should be kept by the licence holder as evidence that the newt-proof barrier has been properly maintained.
- Newts may seek refuge in the shrinkage cracks that will occur between the fence and the backfill; therefore special care needs to be exercised when removing fencing. Should any fencing need replacement (including any that has to be replaced due to faulty installation), or during the final fence removal process, then all backfill should be removed carefully by hand under the supervision of the licence holder or an agent, if it is thought likely that newts are present. This will minimise the risk of damaging or killing any amphibians that may be sheltering in the back-fill along the fence line.
- It is sometimes necessary to control the vegetation along the fence-line to prevent the fence becoming overgrown, which helps the newts to breach the fence. This is best achieved by the careful application of an approved herbicide which is licensed for aquatic use to a narrow strip (50cm) on whichever side(s) of the fence newts are being prevented from climbing. Cutting the vegetation using a strimmer may be undertaken but care should be exercised to prevent damage to newts or to the fence.
- The removal of the fencing after works are complete must be done under the supervision of an appropriately experienced and licenced amphibian worker.

Usually with exclusion fencing, pitfall trapping would be required although in this case as all of hibernaculum/refugia features that are able to be moved will be translocated prior to any vegetation clearance and one-way exclusion fencing installation, all vegetation clearance must be phased, and soil stripping supervised, pitfall trapping is not seen as necessary in this case.

For any areas which will require road access for the development into fenced off areas, a newt grid must be installed over the road connecting to the exclusion fencing (see Figure 11). Newt grids are specialised structures designed to allow vehicles to cross a newt fence barrier while preventing amphibians and reptiles from passing through. Due to the channel's design, the newts can only exit the grid at either end, on the correct side of the fence, effectively preventing them from crossing the road or path.

To prevent any pollutants, from entering the adjacent drainage ditch and waterbodies and so impacting on herpetofauna, all works must be carried out in accordance with Guidance for Pollution Prevention (GPP 5) which 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

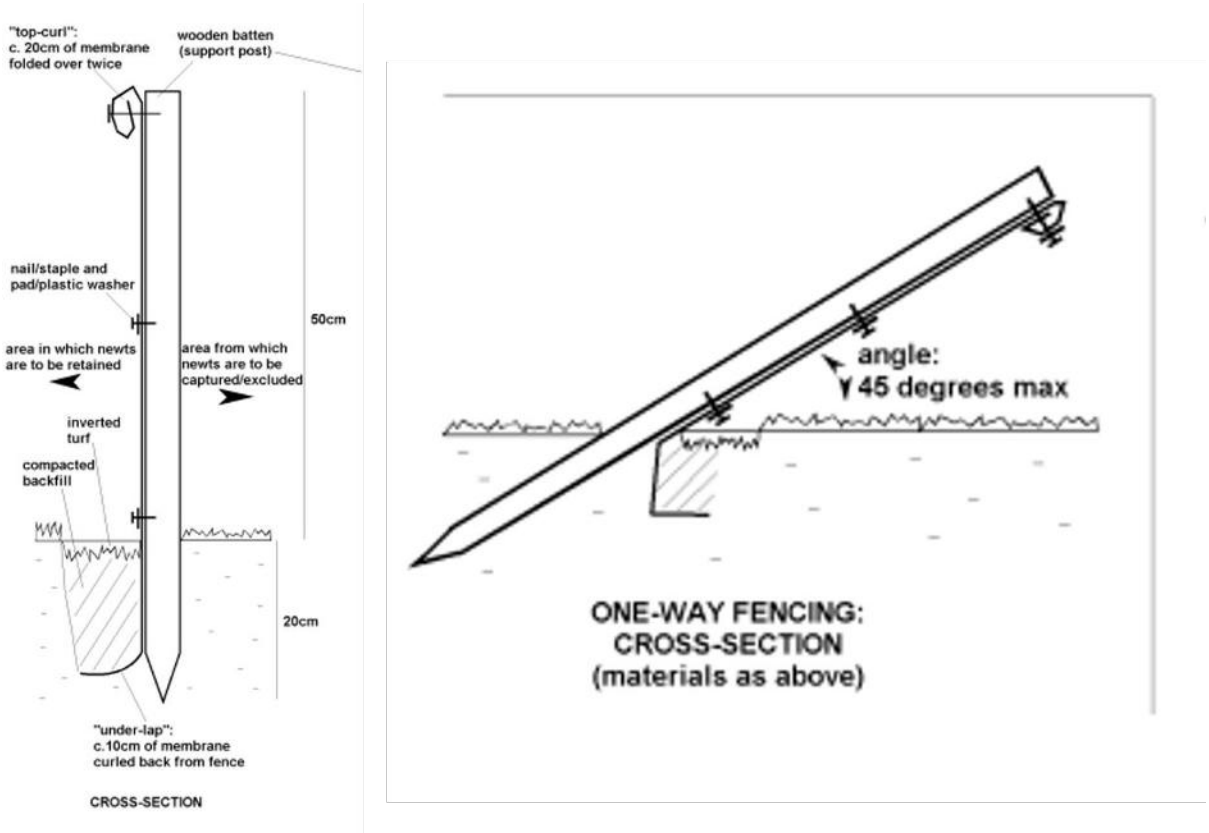


Figure 10: Recommended design for exclusion fence with straight fencing design for details and one-way fencing design for placement.



Figure 11: Example design of the newt grid.

9.2.4 *Nesting Birds*

To prevent potential disturbance to nesting birds, it is recommended that the removal of the dense scrub, scattered trees and woodland on the site occurs outside of the bird nesting season, usually recognised as 1st March – 31st August. If this is not possible, a survey must be carried out by a suitably experienced ecologist of the vegetation to be removed immediately prior to works commencing and all clearance works must be supervised by the site ecologist. If any active nests are found to be present during this search, work must be delayed until such time as the young have fledged.

The proposed compensatory planting to replace any trees lost will also provide potential new nest sites.

9.2.5 *Otter*

The guidance given in Section 9.2.3 above will ensure there is no negative impact as a result of a pollution incident.

9.3 Protected Sites

The guidance given in Section 9.2.3 in relation to pollution prevention will ensure that there is no negative impact on any of the protected sites in the area.

10 Legal Implications

10.1 Bats

Bats are protected under UK law by the Wildlife and Countryside Act 1981 (as amended) and also under European law by the Conservation of Habitats and Species Regulations (2021). Under these laws it is an offence to deliberately kill or injure a bat, to disturb a bat or to damage, destroy or block access to a roost. Bat roosts are protected under these laws whether the animals are present at the time of survey or not. NRW are empowered to issue licences to carry out work on bat roosts for reasons of overriding public interest.

10.2 Badgers,

Badgers and their setts are protected by the Protection of Badgers Act 1992. Under this Act it is an offence to damage, destroy or obstruct access to a badger sett, and also to disturb a badger whilst it is occupying a sett.

Undertaking an activity within 30 metres of a badger sett, which could result in damage to the sett, obstructing access to it or disturbance of any occupying badgers, may constitute an offence. This distance may be extended to 100 metres if the activity involves blasting or pile-driving.

NRW, the statutory conservation authority, are empowered under the 1992 Act to issue a licence permitting potentially damaging or disturbing activities to be undertaken within 30 metres or 100 metres of a badger depending on the nature of the activity undertaken as part of a local authority consented development.

10.3 Hares, Hedgehogs and Polecats

These are priority species across North Wales and are included in Section 7 of the Environment Wales Act (2016) as species of importance to the maintenance and enhancement of Biodiversity in Wales.

10.4 Herpetofauna

All native reptiles, with the exception of smooth snakes (*Coronella austriaca*), are priority species across North Wales, including Anglesey, and are included in Section 7 of the Environment Wales Act (2021) as a species of importance to the maintenance and enhancement of Biodiversity in Wales.

All British herpetofauna receive limited legal protection under Schedule 5 of the Wildlife & Countryside Act which protects the animals and their spawn from sale. Great crested newts are given full protection under the ‘Conservation Regulations 1994 (the Habitats Regulations) as amended in 2017.

Great crested newts are also protected under European law by the Habitat and Species Regulations 2021. Under these laws it is an offence to deliberately kill or injure a great crested newt, to disturb a great crested newt or to damage, destroy or block access to a breeding place.

10.5 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 the exception of a small number of '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) 6.

10.6 Otters

Otters are protected under UK law by the Wildlife and Countryside Act 1981 (as amended) and under European law by the Habitat and Species Regulations (2010). Under these laws it is an offence to deliberately kill or injure an otter, to disturb them or to damage, destroy or block access to their place of shelter. Under both laws NRW are empowered to issue licences to disturb them and disturb or destroy their habitat for reasons of overriding public interest.

11 References

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

Environment Wales Act (2021)
Wildlife and Countryside Act (1981)

Planning Policy Wales v12 (2023)

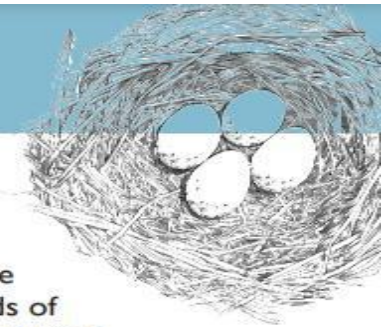
English Nature (2001) Great Crested Newt Mitigation Guidelines

Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), Great Crested Newt Conservation Handbook, Froglife, Halesworth

12 Appendices

12.1 Guidance for Sensitive Habitat Clearance

Precautionary method of working for reptiles, common toads, hedgehogs, badgers and nesting birds **Biodiversity Specification #1**



This is a summary document to outline the precautionary working practices for protected species (reptiles, common toads, badgers, hedgehogs and nesting birds), on sites where there is a low risk of the species being present and when the local planning authority (LPA) considers the precautionary measures to be applicable. This is not a legal document and does not include all information on wildlife protection and legislation.

The purpose of this document is to set out a method of working for sites where:

- Suitable features (such as rough grassland, hedgerows, trees, scrub and previously developed sites) for reptiles, common toads, badgers, hedgehogs and nesting birds are present, but are very limited in extent, and are likely to be affected by development, or;
- The risk of reptiles, common toads, hedgehogs, badger and nesting birds being present and affected by development proposals is unlikely but cannot be ruled out.
- Reptiles, common toads, hedgehogs, badgers and nesting birds can be found in a range of habitats. Where the LPA considers it appropriate, developers must adhere to the following specific requirements, depending on the suitability for particular species/ species groups.

Precautionary measures:

1. The site owner/site manager will ensure that anyone (including sub-contractors) undertaking construction, demolition and landscaping (both creation and management), is made aware of the potential for the site to support protected species, where to expect them, their protected status and the procedure to follow in the unlikely event that protected species are discovered during works. Where applicable, this advice will be given through site inductions, tool box talks (such as CIRIA toolbox talks) or similar. A copy of this Precautionary Method of Working will be kept on site and available for inspection at all times.

2. Should any protected species (i.e. common toads, reptiles, birds, hedgehogs and badger) be discovered during construction or other works on site, which are likely to be affected by the development, works will cease immediately. The owner/ site manager will then seek the advice of a suitably qualified and experienced ecologist and works will only proceed in accordance with the advice they provide. The Chartered Institute of Ecology and Environmental Management (CIEEM) provides further guidance and advice on finding a suitably qualified ecologist.



In implementing the planning permission and related works, the following methods of working will be adopted:

3. Any vegetation clearance (i.e. removal of trees, scrub, hedgerows) or works to buildings shall not commence until a careful check for nesting birds has been completed, particularly during the main breeding season (months of March to August). If bird nests are found then works in the area must stop until the chicks have fledged the nest.

4. All clearance works (i.e. clearance of log piles, debris, rough grass etc.) will be undertaken when common reptiles and amphibians are likely to be fully active i.e. during the April to September period.

5. Clearance of dry stone walls, logs, brash, stones, rocks or piles of similar debris will be undertaken carefully and by hand.

6. Clearance of tall vegetation will be undertaken using a strimmer or brush cutter with all cuttings raked and removed the same day. Cutting will only be undertaken in a phased way which may either include:

Cutting vegetation to a height of no less than 30mm, clearing no more than one third of the site in any one day or;

Precautionary method of working for reptiles, common toads, hedgehogs, badgers and nesting birds **Biodiversity Specification #1**



Cutting vegetation over three consecutive days to a height of no less than 150mm at the first cut, 75mm at the second cut and 30mm at the third cut;

7. Following removal of tall vegetation, using the methods outlined in point 5, remaining vegetation will be maintained at a height of 30mm through regular mowing or strimming to discourage common reptiles and amphibians from returning.

8. Ground clearance of any remaining low vegetation (if required) and any ground works will only be undertaken following the works in point 5) above.

9. Any trenches left overnight will be covered or provided with ramps to prevent animals falling into the trenches and being trapped. Excavations left overnight should be checked prior to filling. Any open pipes left overnight will be covered.



10. Any building materials such as bricks, stone etc. will be stored on pallets to discourage reptiles from using them as shelter. Any demolition materials will be stored in skips or similar containers rather than in piles on ground.



For further information on the relevant protected species and legislation, please refer to the website links below:

https://www.arc-trust.org/legislative-protection-for-the-uks-herpetofauna

https://www.rspb.org.uk/birds-and-wildlife/advice/wildlife-and-the-law/wildlife-and-countryside-act/

https://www.mammal.org.uk/species-hub/full-species-hub/discover-mammals/species-hedgehog/

https://www.gov.uk/guidance/badgers-protection-surveys-and-licences

Further information about protected species and development including their ecological requirements, protection and the planning development system can be found at:

https://www.gov.uk/government/organisations/natural-england



Building with Nature

Helping create better places for people and wildlife in line with the BwN green infrastructure standards. http://buildingwithnature.org.uk/

COTSWOLD DISTRICT COUNCIL

Forest of Dean DISTRICT COUNCIL

WEST OXFORDSHIRE DISTRICT COUNCIL

12.2 Site photographic record

12.2.1 *Proposed New Tanks Habitat*



Amenity grassland.



Ornamental planting.



Potential bee orchids.

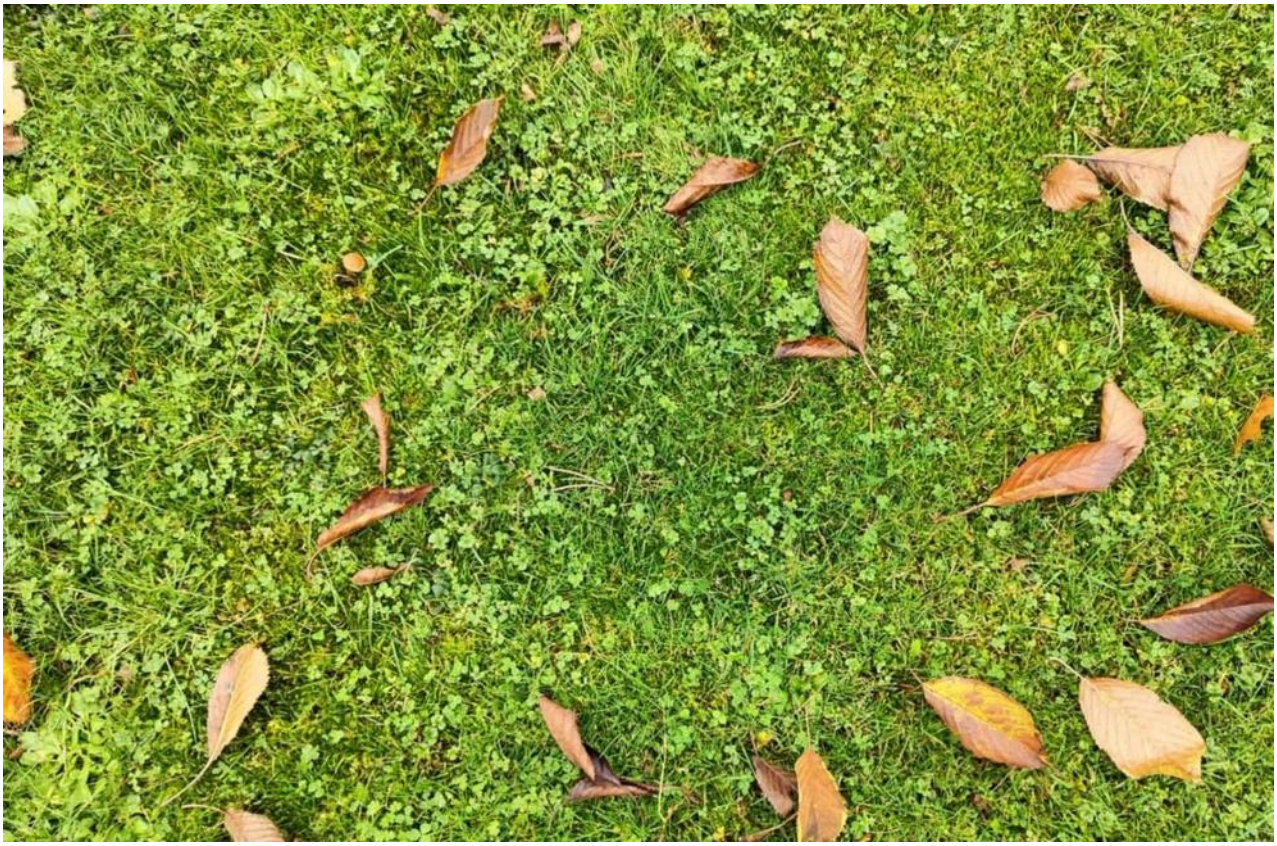


Scattered tree onsite potentially to be removed.



Above and below: scattered tree onsite potentially to be removed.





Amenity grassland sward.

12.2.2 *Proposed New Extension Habitat*



Amenity grassland.



Above and below: amenity grassland.





Crack within soil which is potential GCN hibernacula.



Amenity grassland sward.



Above and below: immature broadleaf woodland.





Above and below: immature broadleaf woodland.





Above and below: immature broadleaf woodland with grassland.





Immature broadleaf woodland



Dense scrub.



Above and below: affected building elevations.



12.3 Review Table

Name	**Task**	**Date**
Heaven Kyriacou	Author	18.11.2025
Ben Box	Reviewing	24.11.2025
Chris Hall	Proofreading	27.11.2025