



Hydro Aluminium Deeside, Wrexham Industrial Estate

Ecological Addendum

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1 Introduction

1.1 Background

A set of Ecology Surveys have been completed at Hydro Aluminium Deeside, located on Bridge Road, Wrexham Industrial Estate, LL13 9QS (National Grid Reference SJ 3750 4927).

Ecology surveys have been undertaken in order to support a planning application to provide a new hardstanding storage area for finished aluminium goods. The proposed storage area would measure approximately 68m x 40m in area.

Previous ecology surveys were undertaken in 2019 by Susan Worsfold BSc ACIEEM. Full findings of this assessment can be found in the associated ecological report (*Ecological Impact Assessment at Hydro Aluminium Deeside Limited, Bridge Street, Wrexham, Susan Worsfold, 29th August 2019*).

This previous report assessed the site in August 2019. This report concluded that *'the impacts of the proposed development would be low with respect to birds, great crested newts, badgers, bats and dormice'*.

1.2 National Resources Wales Comments

National Resources Wales (NRW) have commented on this report and requested further information for the site, specifically with regards to great crested newt. This additional information requested includes further consideration of:-

- (i) The overall national importance of the population of great crested newts present within in the environs of the Wrexham Industrial Estate
- (ii) The significance of the component local population located to the south of the application site
- (iii) Dispersal distances of the species (up to 1.2 kms)
- (iv) The functional role of the overall site for connectivity purposes

Notwithstanding the above, NRW consider that the proposal is not likely to be detrimental to the maintenance of the favourable conservation status of the local population of great crested newt provided any subsequent consent requires the submission and implementation of an approved conservation scheme.

NRW also consider biosecurity (In this case, biosecurity issues concern invasive non-native species (INNS) and diseases) to be a material consideration owing to the nature and location of the proposal.

In order to address the above concerns, NRW recommend attaching conditions to the consent comprising of the following:-

Condition 1: No development shall commence until a site species/habitat Conservation Plan has been submitted to and approved in writing by the Local Planning Authority. The Conservation Plan should include:

- The submission of amphibian avoidance measures;
- The submission of a scheme that identifies the provision and management of a corridor for long term conservation purposes;
- The submission of measures designed to prevent the accidental capture/killing of newts post construction. This is essentially the design and construction of an amphibian friendly surface water management system;
- Ecological Compliance Audit, including key performance indicators.

Condition 2: No development with the potential to impact on invasive species, shall commence until a biosecurity Risk Assessment has been submitted to and approved in writing by the Local Planning Authority. The risk assessment shall include measures to control, remove or for the long-term management of invasive species both during construction and operation. The Biosecurity Risk Assessment shall be carried out in accordance with the approved details.

Following on from NRW's comments, Kingdom Ecology have conducted an update site visit and further assessment of the site along with consideration for the great crested newt population within the wider Wrexham Industrial Estate. These further works will aim to examine concerns with regards to great crested newt and to provide initial guidance with regards to a future conservation plan for the site.

The update site visit and assessment has been completed by Richard Roe (BSc, MSc, MIEEM, CEnv). Richard has extensive experience of undertaking habitat and protected species surveys as a professional ecological consultant with over nineteen years' experience. Richard has provided ecological input into several developments across the Industrial Estate. Richard holds NRW and Natural England great crested newt licenses and has held numerous European Protected Species Licenses for great crested newt.

2 Further Site Assessment

2.1 Status of Great Crested Newt in Wrexham

2.1.1 Overview

Northeast Wales, including the County Borough of Wrexham and parts of neighbouring Flintshire, is one of the strongholds of the great crested newt within the UK (Jehle et al 2011¹). Due to the soil type, underlying geology and historical farming practices, lowland parts of Wrexham have a particularly high density of suitable ponds and the pondscape of northeast Wales has been identified as being of European importance. The high density of suitable ponds means that great crested newts are widespread across the county (Russell et al. 2017²).

Despite the prevalence of suitable ponds within the county, the decline of great crested newts within Wrexham has been acknowledged and a Great Crested Newt Species Biodiversity Action Plan was produced by Wrexham Borough Council in 2003 in order to maintain and enhance the status of the species within the county.

2.1.2 Great Crested Newt at the Industrial Estate

Wrexham Industrial Estate itself also supports important populations of great crested newt. Figure 2 in the Appendix shows historic pond records as provided by COFNOD for great crested newt in relation to the development site and the wider Industrial Estate.

This Figure shows a ring of occupied great crested newt ponds extending around the boundaries of the Industrial Estate with further populations located within the Industrial Estate itself including good populations around HMP Berwyn (to the south of the proposed development site); around Erlas Black Wood at the centre of the Industrial Estate and along Bryn Lane at the East of the Industrial Estate.

The Industrial Estate infrastructure of roads, industrial units and areas of hardstanding has resulted in some isolation and fragmentation of the pond clusters located within the industrial estate itself.

¹ Jehle R Thiesmeier B and Foster J. 2011. *The Crested Newt -A Dwindling Pond Dweller*. Laurenti-Verlag, Bielefeld, Germany

² Russell L, Starnes T and Wilkinson J (2017). *Spatial Action Plan for Great Crested Newts in Wrexham, A Manual for Achieving Favourable Conservation Status*. NRW Science Report Series. Report 77 pp 69, NRW, Bangor.

This means that the potential dispersal corridors that remain are of prime importance to the continuing function of the wider Wrexham Industrial Estate great crested newt metapopulation.

With regards to dispersal distances, great crested newt have been recorded travelling up to 1.3km in relatively unfragmented rural landscapes. However, such long-range migrations are typically rare with most studies indicating that shorter dispersal distances are more usual. Nevertheless, long-range dispersals are likely very important in maintaining local geneflow and allowing metapopulations to persist (Jehle et al 2011).

Potentially valuable wildlife corridors at the Industrial Estate are likely to include various blocks of broadleaved woodland and unimproved grassland habitats. Such habitats in proximity to the proposed development site include the belt of woodland along the southwest boundary of the site, the band of woodland located immediately to the north of the site; grassland habitats around Pentre Maelor housing estate and the 'Ecology Area' located to the south and east of HMP Berwyn.

The potential value and function of these habitats as wildlife corridors has been recognised by Wrexham Borough Council who have provided a Green Network Plan for the Industrial Estate. Figure 5 shows this plan in relation to the proposed development area. This figure shows that the existing block of plantation woodland along the southwest boundary of the Hydro site is identified within the Green Network Strategy.

2.1.3 Great Crested Newt at HMP Berwyn

The Hydro Site is located opposite HMP Berwyn Prison Complex (see Figure 3 in the Appendix).

The prison was constructed in 2017 on the former Firestone Factory site which closed down in 1994. The Firestone site was cleared and left undisturbed as brownfield land until works to construct a new prison were started in 2015. The site had developed into a mosaic of species-rich, neutral grassland habitats interspersed with areas of scattered and continuous scrub with further areas of tall ruderal vegetation.

As part of the planning application for the prison site, great crested newt surveys were undertaken of waterbodies present.

Although the original surveys only recorded a low population of great crested newt within water bodies present, works to capture great crested newt during site clearance recorded just less than 500 individuals.

As part of the prison development an Ecology Mitigation Area was provided. This comprises of the retention of an approximate 18.7ha area of scrub and grassland which is managed for its conservation benefit around the southern and eastern edges of the prison site.

The Prison Site Ecology Area also supports a number of mitigation ponds. Moderate numbers of great crested newt have been recorded at the site during recent, follow-on monitoring works. The closest mitigation pond is located approximately 270m to the south of the Hydro site.

The GCN population at the prison complex is likely to form an important component of the wider Wrexham Industrial Estate great crested newt metapopulation.

Habitat corridors linking the HMP Berwyn pond cluster to other wider GCN populations are likely to extend east from the prison site along the River Clywedog Corridor.

Another potential dispersal route is along habitats either side of Clywedog Road East (including within the Hydro site) to the band of woodland to the north of the Hydro Site. This woodland in-turn then joins with woodland along Redwither Brook which links to the pond cluster at Erlas Black Wood.

However, this dispersal route would require newts to cross several roads including Bridge Road, Clywedog Road East and Coed Aben Road, all of these roads have steep curbs and gully pots and so are likely to provide at least partial barriers to amphibian movements. Potential dispersal routes are shown on Figure 4 in the Appendix.

Notwithstanding the potential barriers to newt dispersal north from HMP Berwyn, development proposals at the Hydro Site will seek to retain a suitable corridor of land alongside Clywedog Road East.

This proposed corridor of land would be managed and protected solely for its nature conservation benefit. This corridor extends beyond that identified by Wrexham Borough Council's green network to provide a corridor which is approximately 30m in width (the identified green network along the existing band of plantation woodland is approximately 10m in width (see Figure 5)).

3 Update Ecology Walkover

3.1 Current Site Conditions

An update ecology walkover survey of the site was undertaken on the 1st April 2020.

A habitat map is shown with Target Notes on Figure 1 in the Appendix. Photographs of habitats present are also presented in the Appendix.

In summary, the proposed works area and adjacent habitats comprise of an area of recently profiled and cleared land located at the southwestern end of the main Hydro Aluminium works.

The proposed storage aluminium storage area (red line boundary and Target Note 1 on Figure 1) comprises of an area of gravel hardstanding on level ground. The boundaries of the proposed storage area are marked with wooden planking and overlaid with steel mesh (in preparation for concreting to provide the final storage area). This area of land is considered to be of negligible conservation value. The storage area measures approximately 70m x 40m in area.

An access track with storage bays and a passing place runs from the area's main entrance on Bridge Road up to the proposed storage area and into the main Aluminium works.

Habitats to the east of the access track comprise of an earth embankment (Target Note 4) which leads up to a wood panel fence. The embankment was created approximately 20 years ago. Vegetation has been allowed to naturally colonise and develop on the embankment.

The site visit was undertaken in early April, this is a poor time of year to carry out grassland assessments as many of the species have died back and may be missed by survey. However, it was possible to discern that the embankment supports a likely herb-rich, unimproved neutral grassland habitat. Species identified included false oat-grass, cock's foot, black knapweed, ox-eye daisy, agrimony, teasel, ribwort plantain, creeping buttercup and wild carrot. There is encroaching bramble scrub plus small stands of hawthorn and young oak trees.

The area to the west of the embankment and access track has been cleared and levelled with some reprofiling to create extended terraced bunds, adding to the existing landscaped earth bund that forms the south-western boundary of the site

The base of the bunds comprises of level, bare ground. Whilst the terraces (Target Note 2) comprise of an approximate 4m wide slope leading up to a level 3-4m wide terrace followed by another 3-4m wide slope leading to an approximately 12m wide flat terrace. The slopes of the earth bunds have begun to re-vegetate whilst the level faces of the terraces comprise principally of bare earth.

Soils at the site were observed to be clay-rich with rubble and buildings materials present mixed within the soil. The soils are likely to be relatively nutrient-poor and have not undergone any agricultural improvement.

The slopes of the terraces have begun to develop a similar species composition to that identified on the opposite, older embankment at Target Note 4. Species present recorded along the slopes included ribwort plantain, black knapweed, prickly sow-thistle, ox-eye daisy, broadleaved dock, great willowherb, agrimony, coltsfoot, creeping cinquefoil, bird's-foot trefoil, wild carrot, hedge mustard, creeping thistle, bramble, and creeping buttercup.

The west face of the earth embankment slopes steeply down towards the southwestern boundary of the site on Clywedog Road East. This face of the embankment supports a band of plantation woodland (Target Note 3) which is approximately 20 years old. The plantation comprises of a mixture of silver birch, sycamore, Scots pine, hawthorn, blackthorn and dog rose with an understorey of ivy, bramble and nettles with occasional lords and ladies and cowslip.

There is a band of mature broadleaved woodland located immediately to the north of the Hydro site and within an adjacent area of land (Target Note 6 on Figure 1).

The woodland is located either side of a watercourse. The woodland comprises mostly of young/semi-mature self-seeded hawthorn, sycamore, hazel, elder and ash with occasional mature white poplar which are likely to be of plantation origin.

The woodland field layer comprises principally of ivy with dog's mercury plus occasional wood avens, herb Robert, male fern, wood meadow-grass and hairy wood-rush. The woodland is unmanaged and consequently dense and scrubby.

The woodland and watercourse form part of a more-or-less unbroken corridor of semi-natural vegetation which runs from the southwestern edge of the Industrial Estate, through the estate itself, before joining Redwither Brook approximately 500m to the east of the site. Redwither Brook eventually flows into the River Clywedog at the south-eastern edge of the Industrial Estate. The woodland and its associated watercourse is likely to function as a wildlife corridor through the industrial estate and is identified on the council's Green Network Plan (Figure 5).

3.2 Habitat Evaluation and Recommendations

Habitats within the immediate development site are considered to be of negligible biodiversity value (habitats comprise of hardstanding).

Adjacent habitats have largely been recently modified with the land cleared, levelled and reprofiled, creating the terraced, sloping bunds along the sites south-western boundary.

Habitats currently comprise of extensive areas of bare ground with some regenerating plant communities on the spoil bunds.

Although the site is currently of relatively low biodiversity value, the site offers opportunities for habitats to develop into features of greater value.

The soils already support a diverse seedbank comprising of neutral grassland species. This is evidenced by the diversity of regenerating vegetation on the slopes of the earth bunds. The soil present is likely to be relatively nutrient-poor and has not undergone any agricultural improvement. This is likely to promote plant species diversity in the future.

The modified embankments offer the opportunity for a mosaic of habitats to develop and re-colonise the site. With differing soil conditions offered by the compacted earth on the tops of the embankments compared with looser soil substrate on the slopes.

The band of woodland along the southwestern boundary of the site offers a further habitat niche within proximity to the embankments.

The site is likely to develop into a range of sparse, neutral grassland habitats which will likely be rich in herbs with patches of bare ground and occasional stands of scrub. Small areas of such habitat are already present on the west facing embankment at Target Note 4.

Outline recommendations for habitat mitigation/management proposals are provided below. Full habitat management prescriptions would be provided in order to satisfy part of the 1st planning condition recommendation as suggested by NRW (See Section 1.2).

3.3 Butterfly Habitats

The Wrexham Industrial Estate is acknowledged as maintaining important populations of the dingy and grizzled skipper butterfly. Both of these butterflies are 'Species of Principal Importance' as listed under Section 7 of the Environment (Wales) Act 2016.

A review of existing data did not record the presence of either of these butterflies at the Hydro site however they have been recorded at habitats to the north and south of the site (including a good population at HMP Berwyn).

Although neither species has been recorded at the Hydro site (possibly due to lack of historical survey), the adoption of appropriate habitat management has the potential to enhance existing butterfly habitats, to provide additional resources and to contribute to the maintenance and enhancement of the butterfly and other invertebrate populations within the Wrexham Industrial Estate.

3.4 Outline Conservation Plan

As recommended by NRW, an additional Conservation Plan would be secured by planning condition.

As previously described, aspects of this Planning Condition will include:-

1. The submission of amphibian avoidance measures;
2. The submission of a scheme that identifies the provision and management of a corridor for long term conservation purposes;
3. The submission of measures designed to prevent the accidental capture/killing of newts post construction. This is essentially the design and construction of an amphibian friendly surface water management system;
4. Ecological Compliance Audit, including key performance indicators.

With regards to the Conservation Plan, the risk of harming any amphibians during construction is considered to be relatively low owing to the nature of existing habitats within the works areas (solely hardstanding). However, this risk will be further reduced by the implementation of standard avoidance measures.

Items 2-4 are considered to be of greater importance. As part of the Conservation Plan, it is recommended that the areas of embankment are retained and managed for their conservation value (both the east and west facing slopes as shown as Areas 1-4 on Figure 4).

This will retain a 30m wide corridor of semi-natural habitat that will run for 250m along the southwest boundary of the site that will link to the larger block of woodland immediately to the north of the site (Target Note 6 on Figure 1) plus it will manage and conserve a further block of southwest facing neutral grassland habitat (Area 2 on Figure 4).

This proposed corridor of land would be managed and protected solely for its nature conservation benefit. As previously described, this corridor extends beyond that identified by Wrexham Borough Council's green network to provide a corridor which is approximately 30m in width (the identified green network along the band of plantation woodland is currently approximately 10m in width (see Figure 5)). This corridor will retain a potential great crested newt dispersal route along the southwest boundary of the hydro site.

The final habitat management plan would be designed around the following key principles and aims:-

- Where possible, retain blocks of interlinked habitat as opposed to isolated pockets of habitat;
- Maximise the biodiversity value of retained habitats at the site;
- Promote botanical interest within grassland habitats;
- Where possible include suitable habitat for notable invertebrate species;
- Provide appropriate habitat for great crested newt (both wetland and terrestrial habitat)
- Ensure the long-term viability of the proposed ecology site by appropriate, long-term management and long-term protection of the sites;
- Allow for a flexible and iterative process with regards to the management of the habitats through an annual monitoring of the habitats present, with appropriate performance indicators to guide the management plan and allow biodiversity opportunities to be explored and promoted.

Detail on areas of management prescriptions and timetabling would be provided within detailed Habitat Management Method Statements to be produced as part of the future Conservation Plan.

With regards to the final design and construction of the proposed hardstanding storage area, this will be designed to avoid trapping and capturing any newts. The area will be designed without sheer curbs and gully pots, with rainwater intercepted and diverted to an existing balancing pond to the north of the west of the Hydro site. Further detail would be provided within the final Conservation Plan.

Appendix

PHOTOGRAPHS

Photograph 1- Slope on west boundary looking northwest



Photograph 2- Regenerating vegetation on east facing slope



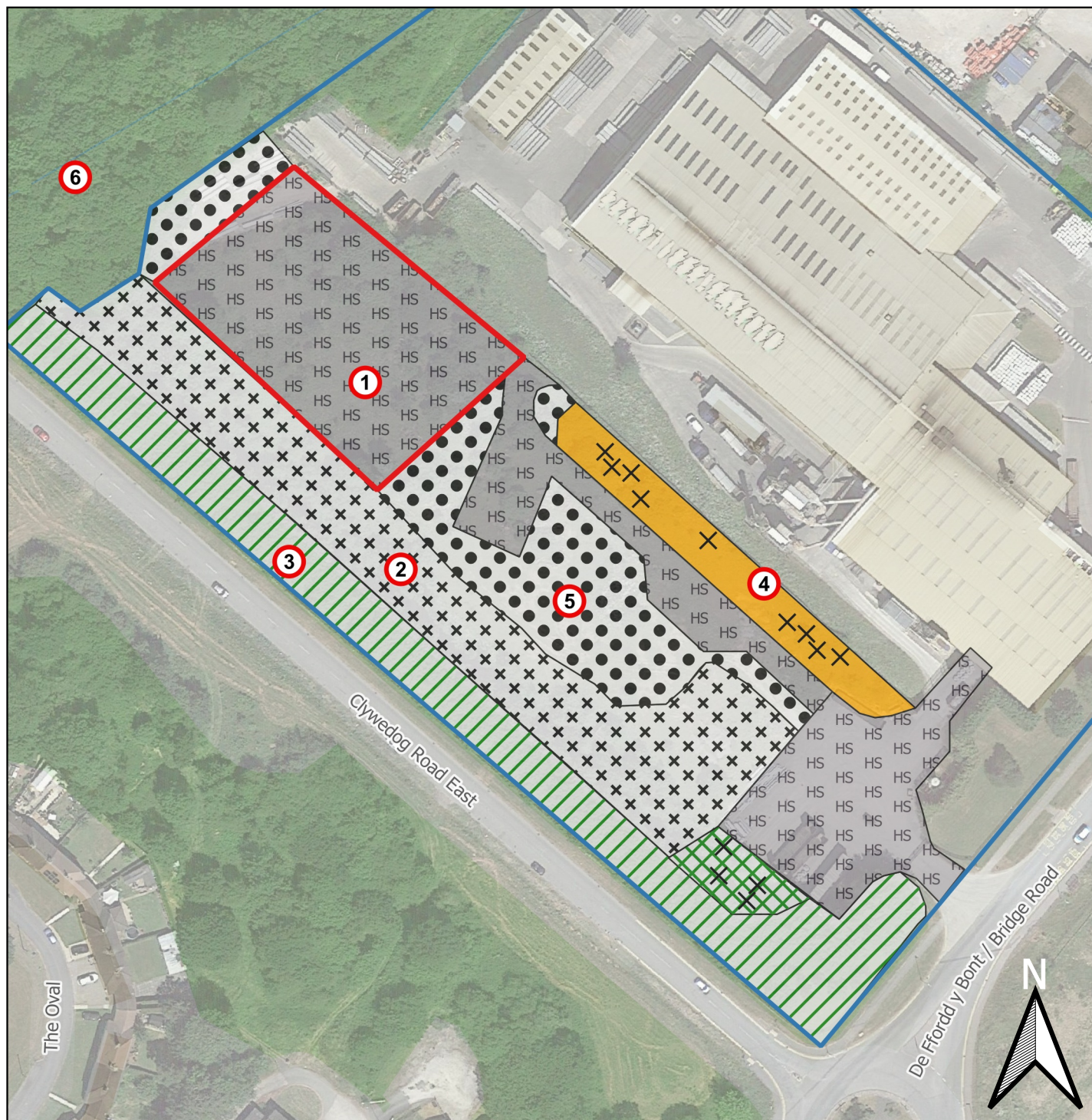
Photograph 3- Habitats at proposed development area on left side of Photograph



Photograph 4- Existing grassland habitats on west facing slope (TN4)



FIGURE 1- Habitat Map



-  development boundary
-  Blue line boundary
-  Target Note
-  Scattered scrub
-  Broadleaved plantation woodland
-  Scrub - dense/continuous
-  Neutral grassland- unimproved
-  Disturbed land - short perennial
-  Bare ground
-  Hardstanding

Map data ©2020 Google

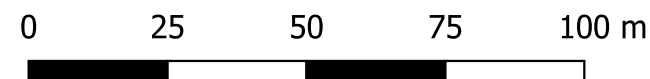
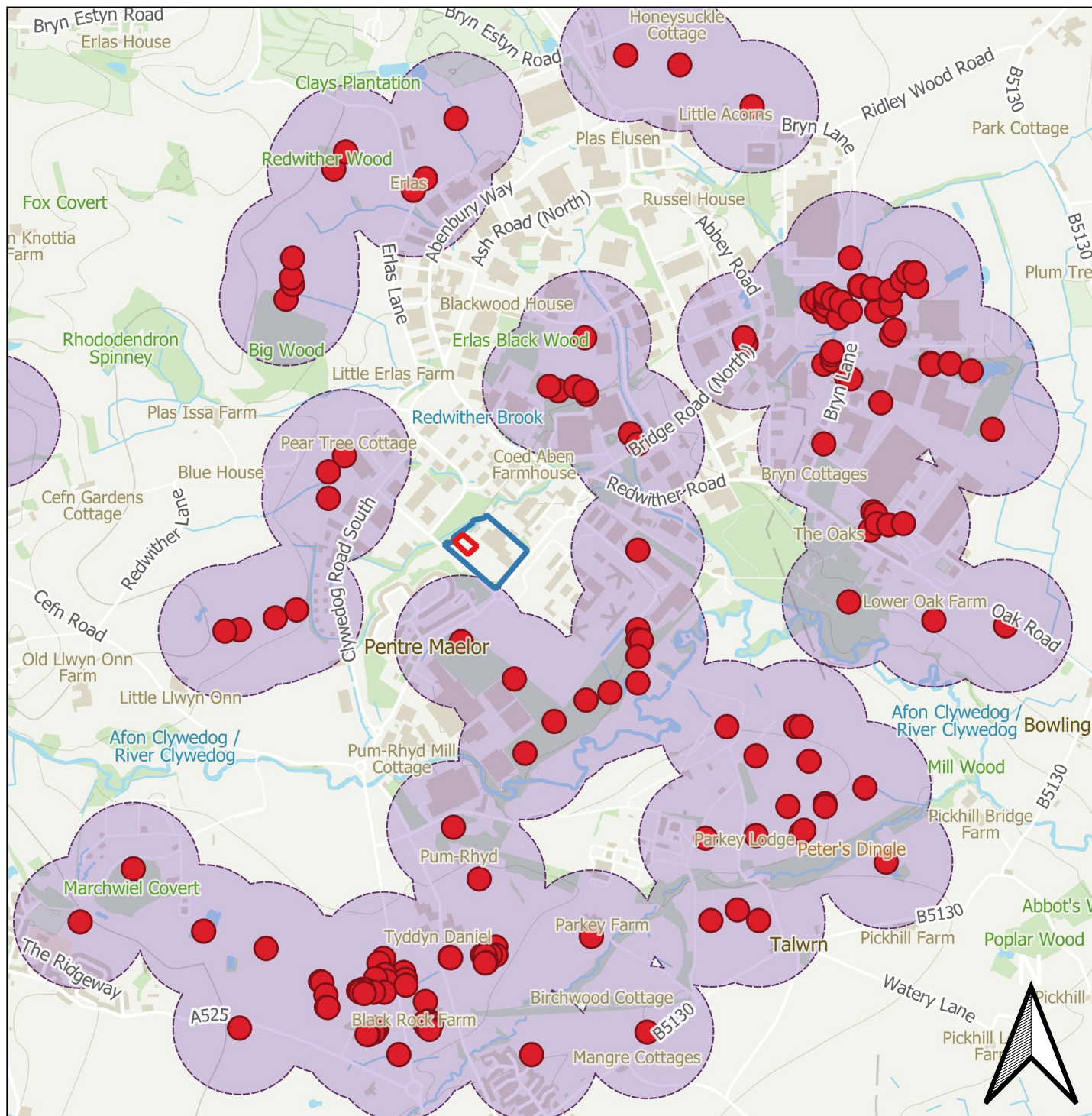
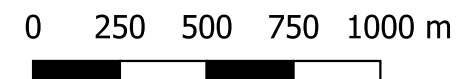


FIGURE 2- Surrounding Great Crested Newt Records



- development boundary
- Blue line boundary
- Great Crested Newt Pond
- 250m Buffer around Pond



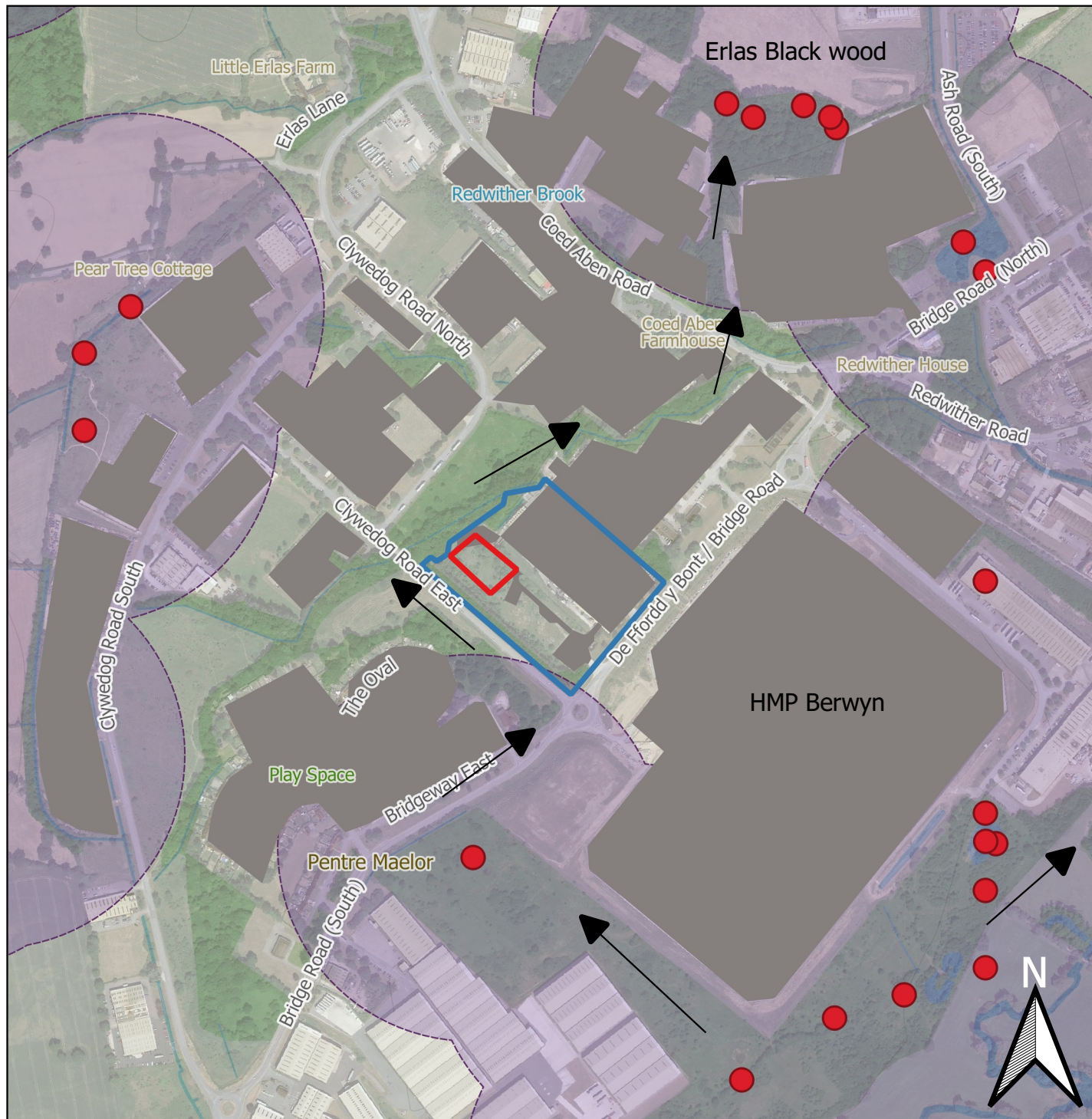
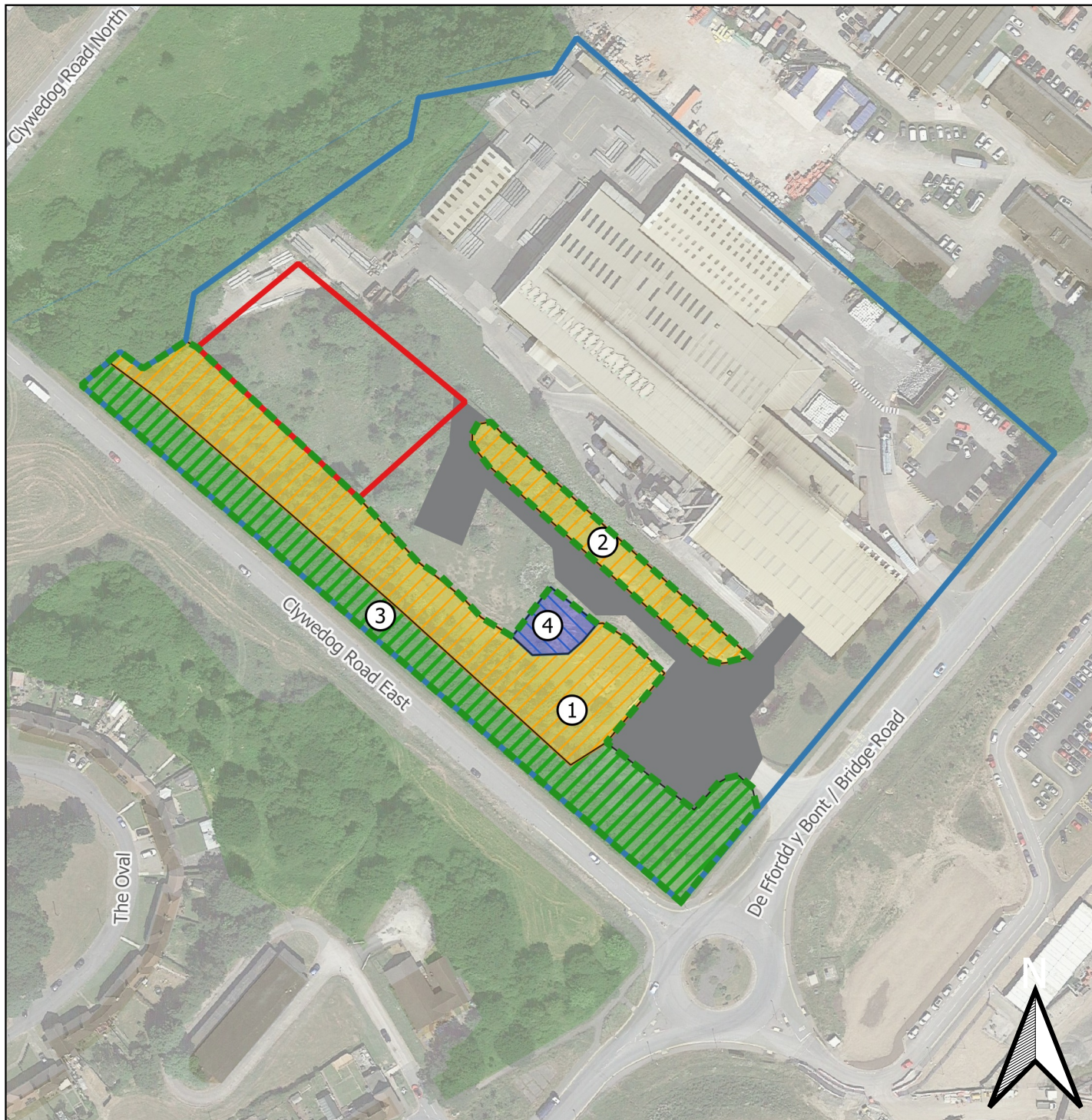


FIGURE 3- Potential GCN Barriers and Dispersal Routes

- development boundary
- Blue line boundary
- Great Crested Newt Pond
- 250m Buffer around Pond
- Hardstanding/Building
- Potential GCN dispersal route

FIGURE 4- Habitat Management Areas

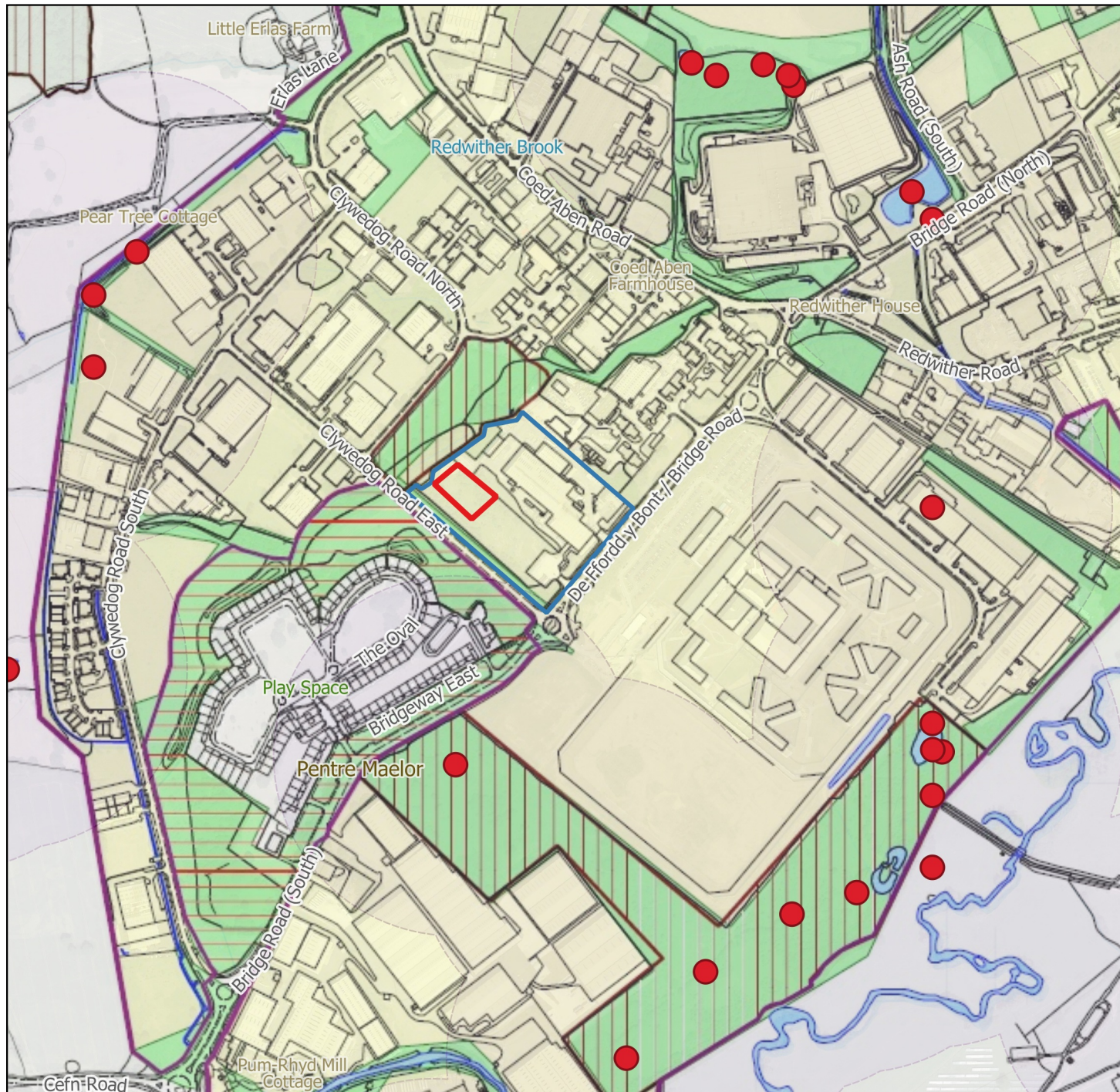


-  development boundary
-  Blue line boundary
-  Hardstanding
-  Habitat Target Note
-  Ecology Area
-  Grassland managment
-  Wetland management
-  Woodland management

0 25 50 75 100 m



**FIGURE 5- Wrexham
Council Green Network**



- Development boundary
- Blue line boundary
- Great Crested Newt Pond
- Green network

0 100 200 300 400 m

