



ETIVE ECOLOGY Ltd

**Plot 1A + B, Bryn Lane, Wrexham
Industrial Estate
Proposed Commercial Development
Preliminary Ecological Appraisal**

Produced for:



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Quality Assessment Record

Report Version	Written by	Date	Reviewed by	Date
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2.0	Russell Grey	03 April 2023	Maddy Warriner	03 April 2023

1 INTRODUCTION

1.1 The Scheme

- 1.1.1 Etive Ecology Ltd was commissioned by Portal Construction NW Ltd to undertake an ecological appraisal of Plots 1A and 1B off Bryn Lane, Wrexham Industrial Estate (WIE). The application site boundary comprising both plots is centred on National Grid References SJ 3903 5015.
- 1.1.2 The proposed scheme is to develop the existing site for industrial use, including two large warehouse units, offices and storage, with associated parking and landscaping. Full details of the proposed scheme are given in Section 4.1 and are shown on Figure 2.

1.2 Scope of this Report

- 1.2.1 The ecological appraisal of the proposed scheme is broadly based upon the *Guidelines for Preliminary Ecological Appraisal* (Chartered Institute of Ecology and Environmental Management, 2017).
- 1.2.2 The aim of the assessment is to obtain information on the existing ecological composition and value of the site, and to conduct a preliminary assessment of the likely significance of ecological impacts. To achieve this, the following steps were taken:
- The field survey area and the 'zone of influence' of the scheme, have been identified
 - A desk study has been undertaken, using freely available sources of ecological and biological data.
 - Baseline information on the site and surrounding area has been recorded through an 'extended Phase 1 survey', including a Phase 1 habitat survey (JNCC 2010) and consideration of notable and/or protected habitats and species (IEA 1995)
 - The ecological features found to be present have been evaluated (CIEEM, 2016)
 - Invasive plant and animal species (such as those listed on Schedule 9 of the Wildlife & Countryside Act [WCA]) have been identified
 - Potential constraints to the proposed development and potentially significant ecological impacts have been identified
 - Recommendations for further survey have been made, where appropriate
 - Mitigation recommendations have been provided based on current information.
- 1.2.3 A Phase 1 Habitat Map of the survey area is presented in **Appendix A**. Habitats, features and protected species potential are described within the main body of the report text and located by Target Notes on the Phase 1 Habitat Map. Photographs taken during the survey are presented in **Appendix B**.

2 METHODOLOGY

2.1 Desk Study

- 2.1.1 A desk study was undertaken to identify any nature conservation sites within 1km of the site. The desk-based exercise also considered the potential for protected and/or notable species of fauna to be found within 1km of the site.
- 2.1.2 The following sources of information were utilized:

- MAGIC website (<http://www.magic.gov.uk/MagicMap.aspx>)
- Wrexham County Borough Council website (<http://www.wrexham.gov.uk>)
- Natural Resources Wales website (<https://naturalresources.wales/>)
- Wales Biodiversity Partnership (<https://www.biodiversitywales.org.uk/>)

2.1.3 A data request was not made to the North Wales Environmental Information Service (COFNOD), at this stage. The ecological sensitivities of the site location are already well known and understood. A review has been undertaken of previous ecological studies relating to the site and adjacent sites, to further inform the ecological baseline.

2.1.4 An initial consultation has been carried out with Natural Resources Wales (NRW) and Wrexham CBC, with regards to potential impacts on GCN as a result of the scheme and the requirements for protected species licensing, mitigation and compensation.

2.2 Extended Phase 1 Habitat Survey

2.2.1 The site visit was made on 12th February 2021.

2.2.2 The survey comprised an extended Phase 1 Habitat Survey. This survey method follows the habitat assessment and classification procedure outlined by the Handbook for Phase 1 Habitat Survey (JNCC, 2010), whereby all habitats are identified, described and mapped using a standard classification.

2.2.3 The extended component of the survey is developed from the methodology described in Guidelines for Baseline Ecological Assessment (IEA, 1995). All habitats and features within the survey area are assessed for their potential to support legally protected or notable species (nationally or locally).

2.2.4 These species include:

- **Amphibians:** ponds within 250m of the site were considered for their suitability to support a range of amphibians, including great crested newts (GCN).
- **Reptiles:** the site was assessed for suitable habitats including rough grassland, cloddiau, brownfield sites and habitat edges in general which would provide cover, basking and foraging habitat for reptile species.
- **Otters:** watercourses within 100m of the site were checked for signs of otter and assessed for their suitability to support the species.
- **Water voles:** watercourses on site were checked for signs of water vole presence and assessed for their potential to support the species.
- **Bats:** all trees and structures on site were assessed as to their suitability to support roosting bats at any point during the year. Trees and structures were then categorised for their potential to support roosting bats as per the *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J., 2016).
- **Birds:** the site was assessed for suitable habitats for nesting birds, including habitats suitable for ground-nesting species.
- **Badgers:** all habitats within 30m of the site were surveyed where possible to identify the presence of any setts or signs of badger activity.
- **Red squirrel:** the site was assessed for any habitats suitable to support red squirrel and an initial search of any suitable trees for dreys was undertaken.

- **Invasive plant species:** this assessment does not constitute a full Schedule 9 species survey. The potential for any Schedule 9 species was assessed and any species that were encountered were mapped and noted.

2.3 Assessment of Ecological Value

2.3.1 The value and sensitivity of ecological features was determined based on the guidance given in *Guidelines on Ecological Impact Assessment* (CIEEM, 2018). Individual ecological receptors (habitats and species that could be affected by the development) were assigned levels of importance for nature conservation in one of the following categories:

- International
- UK
- National
- County
- District;
- Local, or
- within the immediate zone of influence or site only.

2.3.2 For a given receptor, determination of value includes consideration of the size, secondary or supporting value/function, conservation status and quality of the species or feature.

2.4 Limitations

2.4.1 The initial Phase 1 Habitat survey was undertaken outside of the recommended survey season. Therefore, it was not possible to identify all species of flora. However, it was still possible to ascertain habitat types accurately during the survey effort and given the current land use and management of the site, no notable species of flora were considered likely to be present.

2.4.2 Access was permitted to all land within the proposed development footprint. Access beyond the site boundary was restricted but much of the adjacent land was at least visible to the surveyor. Weather conditions during the habitat survey were clear and cold.

2.4.3 There are considered to be no significant limitations to the undertaking or accuracy of the survey work.

3 RESULTS

3.1 Desk Study

Designated Sites

3.1.1 There are no statutory designated nature conservation sites located within 1km of the site.

3.1.2 There is one non-statutory designated nature conservation site within 1km of the site:

- Wrexham Industrial Estate Wildlife Site (WS); comprising a series of land parcels within the wider industrial estate which include unmanaged grassland at Bryn Road and on Cefn Park land and ancient broadleaved woodland, Erlas Black Wood. The WIE is also recognised to support a Nationally significant population of GCN

3.1.3 There are no Priority Habitats shown on the site and the nearest such habitats are small blocks of woodland <250m to the north, west and southwest of the site.

Species Records

3.1.4 The following species are known to be present locally, based on local surveyor knowledge and a review of other ecological survey reports within the public domain:

- Amphibians; great crested newt.
- Bats; Pipistrelle species and whiskered bat.
- Birds; numerous bird species including notable species such as house martin, linnet, spotted flycatcher, house sparrow, tree sparrow, dunnoek, bullfinch, starling, whitethroat, redwing, song thrush, fieldfare, mistle thrush and barn owl.
- Invertebrates; latticed heath, small heath, dingy skipper, grizzled skipper and cinnabar.
- Mammals; badger, polecat
- NNIS; Indian balsam, Japanese knotweed.
- Reptiles; slow worm, adder

Environment (Wales) Act 2016

3.1.5 Section 7 of the Act replaced the 'Biodiversity duty' in Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, which requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'Biodiversity duty'.

3.1.6 The Section 7 list is now used to identify those habitats and species of Principal Importance in Wales under the Environment (Wales) Act. The following relevant habitats and species are found on this list:

Table 3.1.1 Relevant Section 7 Habitats/Species

Habitats	Species
Lowland mixed deciduous woodland	Slow worm
Open mosaic habitats on previously developed land	Various bird species
Lowland meadow	Various bat species
Pond	Common toad
	Great crested newt
	Various invertebrate species

Wrexham LPG Note 29 – Wrexham Industrial Estate

- 3.1.7 Wrexham CBC's Local Planning Guidance 29 (LG29) relates specifically to WIE and identifies the site as not only one of the largest industrial estates in Europe, but also comprising "an important network of wildlife habitats that supports a diverse range of animals and plants which help make the Estate an attractive place to work and which contribute to the quality of life of people in the County Borough".
- 3.1.8 The document clearly outlines the process for obtaining planning consent with regards to ecology; undertaking all relevant ecological surveys in advance of the application submission, submitting a Concept Plan or Method Statement for the proposed works, and submitting a Management Plan to cover the long-term management of mitigation areas.

3.2 Extended Phase 1 Habitat Survey

- 3.2.1 The walkover survey was undertaken by Russell Grey (BSc, MCIEEM, CEnv). The survey was undertaken on an overcast and chilly day, with no constraints to the survey of any part of the red line application site.
- 3.2.2 The proposed development site is located on the eastern side of Bryn Lane, which marks the eastern side of the Wrexham Industrial Estate (WIE). The site is sandwiched between Bryn Lane to the west and an existing industrial site to the east, with an access road and amenity grassland to the north and a storage yard (caravans) to the south. The site comprises an area of raised ground that has become naturalised by scrub, ruderals and self-seeded broadleaved trees, over a grassland sward. In the wider context, the site is surrounded by industrial sites with associated landscaping and corridors of semi-natural habitat in between. There are numerous ponds across WIE and there is open farmland approximately 100m to the northeast of the site.

Habitats

- 3.2.3 The habitat arrangement on site, as well as all notable features, are described in the Target Notes below. These include land adjacent to the south of the Site, referred to as Plot 1B.

Target Number	Target Note	Ecological Receptors / Potential
1	Site access off Bryn Lane, comprising a herras panel fence and large concrete blocks as security. The area is bare ground and stone chippings.	
2	Development footprint of previous scheme on Plot 1B. The area comprised levelled ground that has been prepared for development and comprises bare ground (stone chippings).	
3	Levelled ground immediately surrounding the stone-chippings, comprised of a fine stone substrate which has become colonised by pioneer species including mosses, rushes and dock, classified as ephemeral/short perennial vegetation .	
4	Dense/continuous scrub comprised of blackthorn and bramble, with young self-seeded willow.	Nesting Birds
5	Rough and tussocky neutral grassland wrapping around the southern edge of the previously	

Target Number	Target Note	Ecological Receptors / Potential
	developed land. Species include cocksfoot, broadleaved dock and soft rush. Classified as neutral semi-improved grassland .	
6	Hard-standing covering the southeast corner of Plot 1B. The original newt fence runs across this area, secured to the chain-link boundary fence and with sand-bags to form a seal with the ground.	
7	Block of semi-natural broadleaved woodland , comprising a number of mature crack willows, semi-mature silver birch and an under-storey of elder, hawthorn and bramble. The newt fence runs through this woodland block.	Habitat of Principal Importance. Nesting Birds Roosting Bats GCN
8	Rough and tussocky neutral grassland wrapping around the northern edge of the previously developed land. There is a steep slope from the developed area up to the original ground level, upon which is a heras panel fence and the newt fence. Species include cocksfoot, false oat-grass and creeping thistle. Classified as neutral semi-improved grassland .	
9	Line of mature broadleaved trees (poplars) along the western edge of the site, bordering Bryn Lane. Beneath the trees is a block of dense/continuous scrub dominated by bramble.	Nesting Birds Roosting Bats GCN
10	Tall ruderal vegetation covering the west-facing embankment rising from Bryn Lane. The sward is dominated by rosebay willowherb, with frequent creeping thistle and occasional broadleaved dock.	Nesting Birds GCN
11	Dense/continuous scrub on the north-facing embankment at the northern end of the site, rising from the pond. The scrub comprises semi-mature hawthorn to a height of 3m, with dog rose and bramble forming a dense under-storey. A mammal pathway leads into this scrub block from the south, with a badger latrine noted alongside the pathway at the edge of the scrub.	Nesting Birds Badger GCN
12	Rough and tussocky neutral grassland extending across the central portion of Plot 1A. The sward is interspersed with scrub and ruderal species but is dominated by coarse grassy species such as cocksfoot and false oat-grass.	GCN
13	Standing water (Pond 1) on the northern edge of Plot 1A. The pond is 20 x 5m in footprint, surrounded by scrub to the south and mature trees to the north, with common reed and soft rush in the margins. The pond appears to be fed by surface water runoff from the site and other surrounding land.	GCN
14	Semi-natural broadleaved woodland dominated by young blackthorn, hawthorn, oak and willow. The young trees form a dense and closed canopy, resulting in a minimal ground flora.	Nesting Birds GCN

Target Number	Target Note	Ecological Receptors / Potential
15	Caravan storage yard adjacent to the south of Plot 1B.	
16	Woodland, scrub and amenity grassland habitats adjacent to the southeast of Plot 1B, managed for their amenity value by the adjacent landowner/occupier.	Nesting Birds Roosting Bats GCN
17	Standing water (Pond 2) located adjacent to the northeast of the site. The pond is elongated and narrow in shape, extending 50m or more with a width of 2-3m. The pond is edged by woodland to the west and open marginal vegetation to the east. The pond appears to be fed by surface water runoff from the site and other surrounding land.	Nesting Birds GCN
18	Mature broadleaved trees (poplars) on a strip of amenity grassland edging the access road to the industrial unit adjacent to the east of the site. A badger pathway runs through this area from the western side of Pond 1 and appears to cross the access road heading northwards.	Nesting Birds Roosting Bats Badger
19	Land adjacent to the north of the site and the access road, comprising amenity grassland, scrub and a ditch .	Nesting Birds GCN Badger
20	A mosaic of grassland, scrub and woodland, with a number of ponds, forming an integral element of the WIE WS for GCN.	Nesting Birds GCN
21	Standing water (Pond 3) located 20m to the east of Plot 1B and within the grounds of the adjacent industrial unit. The pond was not accessible but from aerial imagery it appears to be surrounded by amenity grassland and managed primarily for its amenity value.	Nesting Birds GCN

3.2.4 In summary Plot 1A comprises a raised central area of neutral semi-improved grassland, surrounded by tall ruderal and scrub, woodland along its eastern boundary and a mature tree-line along the western boundary. There are ponds immediately adjacent to the north and east and evidence of badger activity in the form of a pathway and a latrine. Plot 1B to the south comprises an area of land where development was commenced but not completed. There is extensive bare ground, surrounded by a narrow strip of rough grassland and pockets of woodland and scrub, within an existing newt fence.

Protected Species

3.2.5 The following text summarises the suitability of the survey area to support various legally protected species, based on the descriptions provided in the above target notes.

Amphibians

3.2.6 Pond 1 is located within the red line site boundary. Pond 2 is located immediately adjacent to the east of the red line boundary. Pond 3 is located 20m to the east of Plot 1B.

- 3.2.7 Ponds 1 and 2 are considered to offer suitable habitat to support GCN. Pond 1 is likely to be an ephemeral feature, holding water in the early spring but potentially drying out in most years, therefore it is unlikely to be a high value breeding pond. Pond 2 is a much larger and more permanent feature, with a large area of marginal vegetation given its elongated shape, with the potential to support fish. Pond 2 is therefore considered to be a potential breeding site. Pond 3 is on private land and was not even visible to the surveyor to assess. However, based on aerial imagery, it appears to be an ornamental pond (potential fish presence and wildfowl impacts) surrounded by amenity grassland – of low potential value to GCN.
- 3.2.8 Plots 1B has already been subject to trapping and translocation of all amphibians, under a previous GCN licence (67880:OTH:EPS:2015). The exclusion barrier fencing in place at the time of survey was considered to be intact and functional as a barrier to GCN dispersal onto the site. Thus, GCN are considered to be absent from the low value habitats present within Plot 1B. Plot 1A is comprised of high value terrestrial habitats for GCN and other species of amphibian, being relatively undisturbed having been allowed to naturalise in recent years to form a rough and tussocky sward. These high value habitats connect directly to Ponds 1 and 2. Pond 3 is more isolated on the far side of a site access road. The known GCN population on the opposite (west) side of Bryn Lane is also partially isolated from the site given that Bryn Lane is a busy access route around WIE.
- 3.2.9 As noted, WIE is an important site for GCN and the land immediately on the opposite (west) side of Bryn Lane is known to support the species. Although no specific survey work has been undertaken for Ponds 1 – 3, it is reasonably *likely* that GCN are present in Ponds 1 and 2 and *unlikely* that GCN are present within Pond 3. It is therefore considered likely that GCN will be present within the development footprint of Plot 1A and all other areas outside of the exclusion fence around Plot 1B.

Badgers

- 3.2.10 The mosaic of semi-improved grassland, dense scrub, woodland and tall ruderal vegetation found in Plot 1A offers high value habitat for badger foraging. Evidence of badger was found on site at Target Note 11, in the form of an established pathway running north-south. The pathway was marked by a badger latrine at TN11. No further evidence of badger, such as any sett, was found during the walkover survey. Although it is noted that the scrub at TN11 could not be fully accessed by the ecologist for inspection due to the density of the vegetation.
- 3.2.11 There are records of badgers within 1km of the site. It is therefore considered that badgers are present within the locality and use the site as a foraging resource.

Bats

- 3.2.12 There are numerous semi-mature poplar trees along the western (Target Note 9) and northern site boundaries (Target Note 18), each with **Low Bat Roost Potential** (BRP¹) as a result of ivy cover and/or small numbers of potential roost features (holes/cracks/splits). The woodland to

¹ **High** = structures with one or more potential roost sites suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time. **Medium** = structures with one or more potential roost sites that could be used by bats but unlikely to support a roost of high conservation status. **Low** = structures with one or more potential roost sites that could be used by individual bats opportunistically, but are not suitable to be used on a regular basis by larger numbers of bats. **Negligible** = negligible features likely to be used by roosting bats (Collins, J., 2016).

the east of Plot 1B also contains a number of semi-mature crack willows with a small number of PRFs and therefore Low BRP. There are no buildings or structures present within the site boundary with the potential to support roosting bats.

3.2.13 The site is considered to be of moderate value as a foraging or commuting resource to bats. Plot 1A is comprised entirely of semi-natural habitats, including a mosaic of habitat type and structure, meaning that they are likely to support good numbers of insect prey. The north, east and west boundaries also offer linear features that could be locally important commuting corridors. The surrounding land-use and likely level of artificial lighting and disturbance also detracts from the likely value to and usage of the site by bats, but WIE does have sufficient dark corridors for bat usage.

3.2.14 There are records locally for pipistrelle and whiskered bats and it is therefore considered likely that the site is used by foraging/commuting bats. There is also the potential for roosting bats to be present within mature and semi-mature trees.

Birds

3.2.15 There are good opportunities for nesting birds across much of Plot 1A, most notably within the dense scrub, woodland and broadleaved trees, but also associated with the rough grassland and tall ruderal vegetation. Birds recorded whilst on site were limited to common and widespread species such as magpie, robin, blue tit, blackbird, wren and black-headed gull.

3.2.16 Records for the area include a number of passerines and migratory songbirds. Overall, the site is considered to be of moderate value to nesting birds and to foraging and wintering birds.

Reptiles

3.2.17 The mosaic of semi-improved grassland, ruderal vegetation and scrub, along with standing water and areas of woodland, offer excellent habitat for reptiles such as grass snake or slow worm. However, Plot 1A is relatively isolated with Bryn Lane to the west, the main access for a major industrial unit to the north and east, and an area of land (Plot 1B) that has been subject to trapping and capture of amphibians (and any reptiles that were also present).

3.2.18 There are records of reptiles within 1km of the site. However, despite the suitability of the habitats present, the barriers that surround the site mean that reptiles are considered to be likely absent from the site.

Riparian Mammals

3.2.19 There are no main watercourses within the site boundary and none within 200m. However, there is a network of ditches and drains shown on the OS plan within 100m to the west, as well as a ditch that runs northwards into open countryside. The terrestrial habitats within the site boundary are of low value to otter as they lack extensive cover and are in close proximity to existing industrial units and busy roads – major sources of disturbance.

3.2.20 There are no records of water vole or otter within 1km of the site. It is therefore concluded that this group of species is absent from the site and from immediately surrounding areas.

3.3 Notable Species

- 3.3.1 The site is considered to be potentially suitable to support hedgehog but is too heavily disturbed and close to industrial activities to be of value to brown hare or any other priority mammals. The mix of semi-natural habitats does provide an abundance of opportunities for a range of invertebrates.
- 3.3.2 No notable or locally rare species of flora were recorded on site, however given the location and the lack of any recent management of the site, any such species are considered unlikely to be present.

3.4 Invasive Species

- 3.4.1 No non-native invasive species (NNIS) of flora listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were identified during the walkover survey within the site boundary. Indian balsam and Japanese knotweed have been recorded within 1km. However, it is concluded that NNIS of flora are currently absent from the site.

3.5 Key Ecological Receptors

- 3.5.1 The findings of the extended Phase 1 Habitat Survey and desk study indicate that there are relatively few key ecological receptors for the survey area:
- Designated Sites – site is likely to support species (GCN) that form an integral part of the Wrexham Industrial Estate Wildlife Site designation. *County Value*
 - Habitats – the semi-natural broadleaved woodland and the standing water-bodies have the potential to qualify as Habitats of Principal Importance in Wales. *Local Value*
 - GCN – likely to be present within Ponds 1 and 2 and within terrestrial habitat in Plot 1A. *County Value*
 - Badgers – confirmed to be using the site as a foraging resource. *Local Value*
 - Bats – potential for roosting bats within mature and semi-mature poplars and crack willow trees, potential flight corridors along north, east and west site boundaries, and moderate overall value of the site to foraging/commuting bats. *Local Value*.
 - Birds – moderate value for nesting birds with nesting opportunities associated with all of the habitats found on site. Low to medium value for foraging and wintering birds. Overall, the site is of *Local Value* to birds.
 - Notable Species – site has the potential to support hedgehog. *Local Value*.
- 3.5.2 The protected species / ecological receptors not bullet-pointed above are considered to be of *less than local value*.

4 DISCUSSION

4.1 Proposed Scheme

4.1.1 The proposed scheme is presented a **Figure 2**. A summary of the scheme is given below:

- Develop Plots 1A and 1B into two industrial units, joined along the existing boundary between the two plots.
- Create a new vehicle access in the northern site boundary.
- Provide sufficient car-parking and turning area to the north and west of the site.
- Retain woodland, scrub, broadleaved trees and grassland around the boundaries of the site, as mitigation for GCN and other biodiversity interests.
- Manage the retained habitats for their biodiversity value in-perpetuity, with monitoring and site wardening.

4.2 Likely Impacts

Designated Sites

- 4.2.1 The proposed development will pose an adverse impact on the Wrexham Industrial Estate Wildlife Site. The scheme will result in a loss of semi-natural habitat and will also pose a risk of harm and disturbance to GCN; a primary reason for the designation of the site. The construction phase of the scheme will risk direct harm to any GCN that are present within the terrestrial habitats on site. The proposed layout of the site could result in significant impacts on the ability of GCN to continue to use the site, on their ability to disperse and forage across the site and their ability to access breeding ponds.
- 4.2.2 The potential impacts on GCN have been considered as part of the design process for the proposed development. Attempts have been made to retain as much habitat as possible within the layout, with consultations having been made with the Wrexham County Ecologist and NRW as part of the process.

Habitats

- 4.2.3 The development of the site will result in the loss of ~55% of the existing area of semi-natural habitat from the site. The remaining 45% will be retained primarily around the margins of the site, ensuring the retention of all semi-mature and mature trees, vegetation immediately surrounding Ponds 1 and 2, and a corridor of vegetation running between the two industrial units.
- 4.2.4 The applicant is aware of the need to manage the retained habitats as part of a long-term site wardening requirement. The management of the retained habitats will be specified within a Habitat Management Plan, submitted as part of the GCN License application that will follow the grant of any planning consent.

GCN

- 4.2.5 There will be short-term disturbance impacts on GCN as a result of construction works associated with the development. These works risk harm to individual amphibians and will pose disturbance impacts to adjacent retained habitats and GCN usage of these habitats.

- 4.2.6 There will be long-term impacts as a result of site modification, with the reduction in area of available habitat but the retention of functionality for GCN in the form of habitat corridors and connectivity around and across the site. There will be no loss of any breeding sites as all ponds will be retained and will also be subject to enhancements and management. The development is likely to result in a minor fragmentation/isolation impacts, with GCN no longer able to freely disperse across the whole site. However, the habitat connectivity measures that have been designed into the proposed layout are expected to ensure any such impacts are minor and not significant.
- 4.2.7 Post-development the industrial use of the site will pose interference impacts in the form of a risk of harm to GCN from vehicle movements, drainage infrastructure and human activities, e.g. littering.

Badgers

- 4.2.8 The construction phase poses a temporary risk of harm to badgers using the site to forage as a result of excavations, machinery and chemicals etc, being present on site. Post development, the impact on badgers is a reduced area of habitat available for foraging and a modification to foraging/dispersal routes. However, the retained habitats designed not the layout will ensure that the site retains suitable foraging habitats and good habitat corridors for dispersal around the site.

Bats

- 4.2.9 The proposed development will result in the retention of all the semi-mature and mature trees within the development boundary – therefore there will be no direct impacts on any bat roosts.
- 4.2.10 In terms of post-development impacts, there will be a risk of disturbance to foraging/commuting bats as a result of artificial lighting associated with the scheme.

Nesting Birds

- 4.2.11 Vegetation clearance of the site risks direct harm to nesting birds if undertaken during the nesting season. The development of the site will also result in the permanent loss of ~55% of the semi-natural habitat on site, much of which has the potential to support widespread species of nesting birds.

Notable Species

- 4.2.12 The development of the site risks direct harm and disturbance to notable species such as hedgehog and invertebrates during the site clearance phase, and a permanent loss of habitat for these species post-development.

4.3 Recommendations

Designated Sites / GCN

- 4.3.1 The scheme will result in adverse impacts to GCN which are a qualifying feature of the Wrexham Industrial Estate WS. The development will need to be undertaken under a GCN License issued by NRW. As part of that license the following mitigation strategy will be deployed:

- Install amphibian exclusion fencing around the perimeter of the development and/or working area. Ponds 1 and 2 are to be retained and will lie outside of the perimeter fencing.
 - Install a number of internal fence-lines to assist trapping effort.
 - Install pitfall traps and refugia at alternate 10m intervals.
 - Carry out a minimum 30 days of pitfall trapping.
 - All amphibians caught during the trapping effort will be translocated into the area surrounding either Pond 1 or Pond 2.
 - Once trapping is complete, internal drift fences will be removed under ecological supervision and construction works can commence.
 - A vehicle access will be created through the perimeter fence in the northern site boundary.
- 4.3.2 Retained boundary corridors will be protected during the construction phase to ensure continued use by GCN and other amphibians.
- 4.3.3 Habitat enhancement measures will comprise;
- Removal of excessive shaded surrounding Pond 1 and 2.
 - Removal of fish from Ponds 1 and 2.
 - Creation of hibernacula within retained boundary corridors.
 - Management of young mixed woodland along north-eastern site boundary to create a more diverse habitat structure, of greater value to GCN.
- 4.3.4 Habitat connectivity along the northern site boundary will be maintained post-development by the installation of a GCN underpass beneath the site access. This will connect the semi-natural habitat corridors to the east and west of the new site entrance.
- 4.3.5 Ecological input will be provided into the drainage solution for the site, which should include above-ground SUDS where possible. Gully-pots will be of a newt-friendly design, with recessed kerbs used to allow amphibians to disperse around such features rather than becoming trapped within them.
- 4.3.6 The retained habitats will be subject to a Habitat Management Plan in perpetuity, including annual monitoring of ponds and habitats.

Habitats

- 4.3.7 Figure 2 shows the proposed layout of the site. The precise composition of these habitats will be detailed within the GCN License and Habitat Management Plan, but the composition of the various areas are summarised as follows:
- Northwest boundary; rough grassland with scattered scrub beneath retained trees.
 - Northeast boundary; mosaic of young plantation woodland, rough grassland and scrub.
 - Eastern boundary; mixed woodland with dense scrub under-storey. Pond surrounds to be rough grassland.
 - Southern boundary; rough grassland with scattered trees.
 - Western boundary; mature trees with dense scrub below and a road-side verge of rough grassland.
- 4.3.8 All retained habitats will be subject to a Habitat Management Plan to be agreed as part of the GCN license. The HMP will extend in perpetuity and will include annual monitoring of terrestrial and aquatic habitats, as well as GCN status.

Badgers

- 4.3.9 To avoid the risk of harm to badgers during the construction phase, the following Reasonable Avoidance Measures will be implemented;
- All excavations left open overnight will be provided with a safe means of egress for badgers and other small mammals, i.e. a timber plank or a gently graded slope on one side.
 - All chemicals and other potentially harmful materials will be safely stored on site such that they cannot be accessed by inquisitive badgers.
 - All machinery will be checked each morning prior to the start of works to ensure that no badgers are taking shelter.
 - All excavations will also be checked prior to the start of works each day, for any evidence of badgers.
 - If any badgers, or evidence of badger activity such as a new sett, are found on site during the works, then a suitably experienced ecologist should be called for advise.
- 4.3.10 Post-development, all retained habitats will be managed and maintained in such a way as to be suitable for badgers to use a foraging and dispersal corridors.

Bats

- 4.3.11 It is recommended that no works take place within the root protection areas of any of the retained trees, to avoid impacts to trees that have the potential to support roosting bats.
- 4.3.12 No artificial lighting is to be installed such that they could spill light onto any of the surrounding site boundaries. Lighting columns installed as part of the development must deploy suitable lighting elements that minimise disturbance to foraging and commuting bats. The best way to avoid impacts is to ensure that all lights are directed away from the boundaries and are directed below the horizontal.
- 4.3.13 To add biodiversity enhancements to the site, it is recommended that a total of 6no. bat boxes are installed onto suitably mature trees within the site boundaries. The bat boxes should be of design similar to the Eco Kent Bat Box or the Schwegler 2F bat box. Bat boxes should be sited a minimum of 4m above ground and facing southeast to southwest.

Nesting Birds

- 4.3.14 Any vegetation required should be undertaken outside of the nesting bird season, taken as March to August inclusive. Where this is not possible, vegetation clearance may only take place following a nest survey of the area by a suitably experienced ecologist, to establish the presence/absence of any active nest sites.
- 4.3.15 It is recommended that a total of 6no. bird boxes are installed on suitable trees within the retained site boundary corridors. The boxes should be made of woodcrete and of a design similar to the Schwegler 1B nest box. Bird boxes should be sited a minimum of 3m above ground and in a sheltered location out of full sun.

Notable Species

- 4.3.16 The site clearance measures, GCN mitigation and badger RAMs should all contribute towards avoiding direct impacts on hedgehogs. Post-development, the habitat management measures will consider the potential presence of hedgehogs and invertebrate assemblage.

5 CONCLUSION

- 5.1 Etive Ecology Ltd was commissioned by Portal Construction NW Ltd, to undertake an ecological appraisal of Plots 1A and 1B off Bryn Lane, Wrexham Industrial Estate.
- 5.2 The assessment comprised an Extended Phase 1 Habitat survey, a desk study, an assessment of the likely impacts on the ecological value of the site and recommendations for further survey and/or mitigation measures to be implemented. Consultation has also been undertaken with Wrexham BC and NRW relating to GCN.
- 5.3 A desktop data search identified one Local Wildlife Site within 1km of the site; Wrexham Industrial Estate (WIE). WIE Wildlife Site comprises numerous parcels of land scattered across the estate and supports a nationally significant population of GCN. Other protected species records for the area surrounding the site include at GCN, pipistrelle and whiskered bats, numerous bird species, badgers, reptiles and non-native species of vegetation.
- 5.4 The site is located on the eastern side of Bryn Lane, which marks the eastern side of the WIE. The site is sandwiched between Bryn Lane to the west and an existing industrial site to the east, with an access road to the north and a storage yard to the south. The site comprises a northern area of semi-natural habitat (Plot 1A) and a southern area of previously developed land (Plot 1B). In the wider context, the site is surrounded by industrial sites with associated landscaping and corridors of semi-natural habitat in between. There are numerous ponds across WIE and there is open farmland approximately 100m to the northeast of the site. There are two waterbodies on or immediately adjacent to the site and approximately 12 ponds within 250m of the site.
- 5.5 Plot 1A is comprised of neutral semi-improved grassland, surrounded by tall ruderal and scrub, woodland along its eastern boundary and a mature treeline along the western boundary. Plot 1B is an area of previously developed land and comprises bare ground edges with rough grassland and pockets of scrub. The northern half of the site has the potential to support GCN (Plot 1B has been subject to GCN trapping under license), nesting birds, foraging badgers and foraging/commuting bats. The boundary corridors offer potential for roosting/foraging/commuting bats, nesting birds and hedgehogs. Plot 1A is of negligible ecological value or protected/notable species potential.
- 5.6 The proposed scheme is to develop the site for industrial use comprising one large warehouse unit with associated access, parking and landscaping. Habitat retention has been built into the design of the development, with all boundary corridors being retained for ecological value, specifically as a result of GCN presence. The anticipated impacts arising from the development include construction impacts to GCN, badgers, nesting birds and hedgehog, and post-development impacts including habitat loss and disturbance to GCN, badgers and foraging/commuting bats
- 5.7 The scheme will need to be constructed under a GCN License obtained from NRW following the grant of any planning consent. The strategy for GCN mitigation would be to fence and trap the construction zone, retaining Ponds 1 and 2 which would enhanced and used as receptor sites during the construction period. Post-construction, retained habitats would be subject to enhancements and long-term management, in line with a Habitat Management Plan submitted as part of the GCN license application.

- 5.8 Other recommendations are made with regards to maximising the ecological value of the retained habitats through the retention and protection of all semi-mature and mature trees. Vegetation clearance should be timed to avoid the nesting bird season. Enhancements are recommended in the form of bat and bird boxes, to be installed on suitable retained trees. A number of RAMs are also given to avoid risk of harm to badgers and lighting recommendations are also made to ensure boundary corridors remain undisturbed for use by foraging/commuting bats.
- 5.9 In conclusion, the development site has been found to support a number of protected and/or notable species. A GCN License will be required and habitat retention has been built into the proposed layout. Recommendations are made to further minimise the impacts and to maximise the ecological value of the scheme. Provided these measures are followed there should be no residual adverse ecological impacts arising from the scheme.

6 REFERENCES

Collins, J., (2016), *Bat Surveys for Professional Ecologists; Good Practice Guidelines, 3rd edition*. Bat Conservation Trust, London.

IEEM (2012), *Guidelines for Preliminary Ecological Appraisal*. Institute of Ecology and Environmental Management.

IEEM (2006), *Guidelines on Ecological Impact Assessment*. Institute of Ecology and Environmental Management.

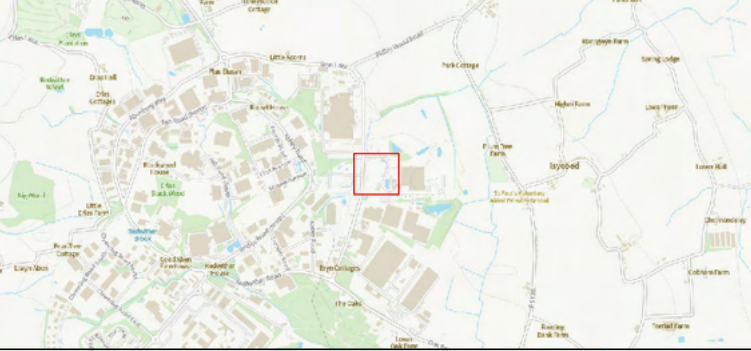
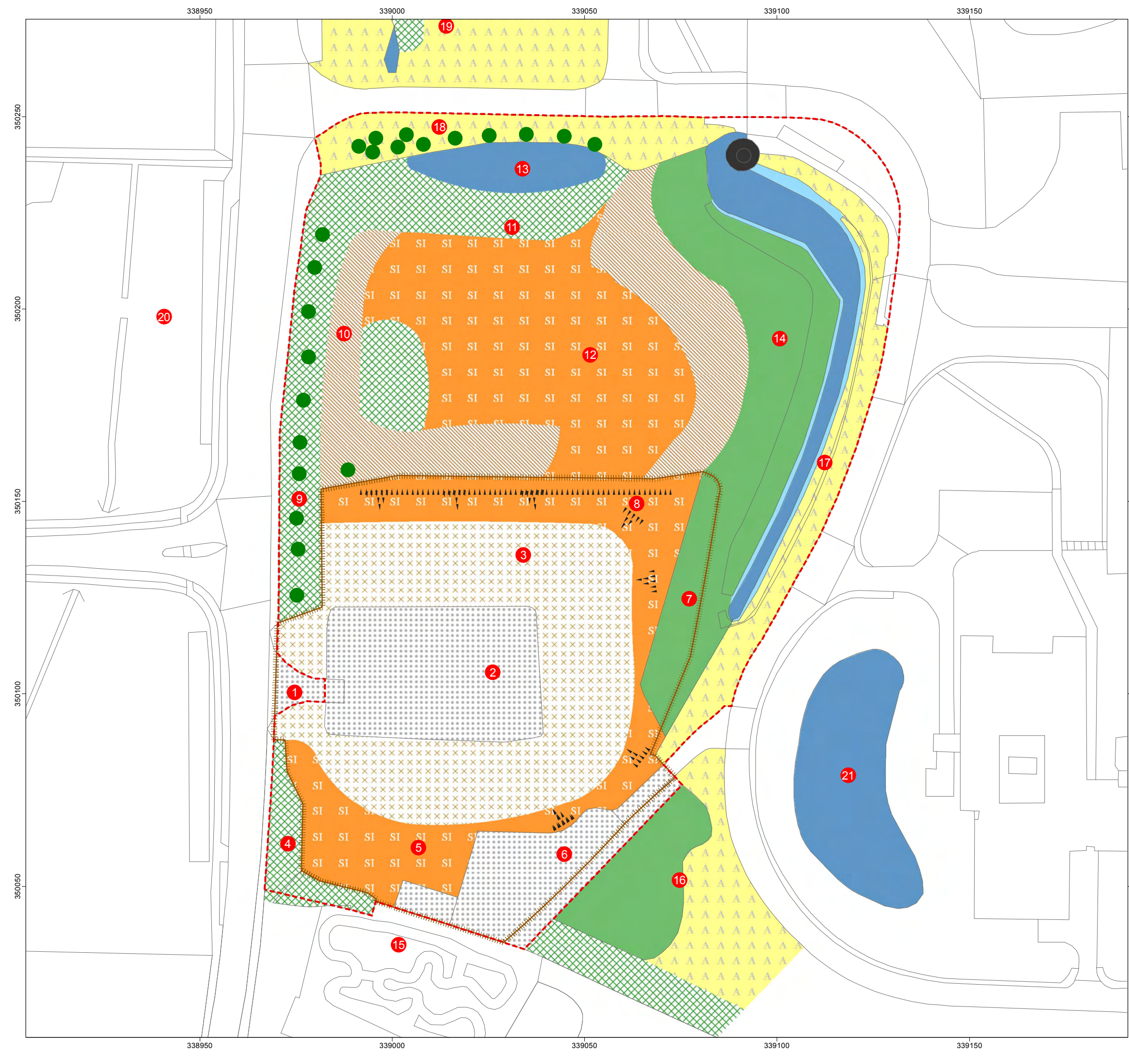
Institute of Environmental Assessment, (1995), *Guidelines for Baseline Ecological Assessment*. E & FN Spon. London.

Joint Nature Conservation Committee, (2010), *Handbook for Phase 1 Habitat Survey – a technique for environmental audit*.

Appendix A - Figure 1

Phase 1 Habitat Map

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Survey Information

Development extent

Phase 1 Habitat Survey

Semi-natural broadleaved woodland (2,962.8m²)

Dense scrub (3,034.2m²)

SI

Semi-improved neutral grassland (6,573.6m²)

Tall ruderal (2,606.0m²)

Pond (1,388.8m²)

Swamp (320.8m²)

Ephemeral / short perennial (4,307.5m²)

Bare ground (3,103.3m²)

Amenity grassland (2,360.2m²)

Building (58.1m²)

Running water

GCN fencing

Slope

Scattered tree

x

Target note

Additional Information:

Please see associated report for further information relating to each target note location.

The area in the Northeast falls outside the original survey area and measures 597.6m².

Source:

Ordnance Survey © Crown copyright 2021, All rights reserved. Licence Number 100049837.

11

0

5

10

20

30

40

Metres

PROJECT TITLE

LAND OFF BRYN LANE, WREXHAM INDUSTRIAL ESTATE

DRAWING TITLE

Figure 1: Phase 1 Habitat Plan

VER

DATE

REMARKS

Drawn

Checked

2.0

16/12/21

Habitat Map

MP

RG

DRAWING NUMBER:

ETIVEECOLOGY/BrynLane/Phase1

SCALE

1:950

PLOT SIZE

A3

DATUM

OSGB

PROJECTION

BNG

ETIVE ECOLOGY Ltd

www.etiveecology.co.uk T: 07825291827 T: 07824394564

Appendix A - Figure 2

Proposed Development Layout

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1	Proposed Site Plan 1 : 500	
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PLOT 1	Area (m2)	Percentage
ECOLOGY MITIGATION AREAS		100
Unit Footprint	4878	0.31
Hardstanding	2536	0.16
Mitigation	8487	0.54
PLOT 2	Area (m2)	Percentage
Gross Plot Area	12425	100
Unit Footprint	440	0.04
Hardstanding	2119	0.17
Mitigation	6054	0.49

PARKING REQUIREMENT - (MAXIMUM STANDARDS)

UNIT 1

Currently Provided	52 Total spaces
Gross Internal Area	4,460m ² / 47,990 sq.ft.
Required Maximum Provision	
B8 Warehouse	45 spaces
B2 Gen. Industrial	83 spaces
Required Minimum Provision	
Disabled Bays	2 spaces
Cycles	5 spaces

UNIT 2

Currently Provided	53 Total spaces
Gross Internal Area	4,135m ² / 44,493 sq.ft
Required Maximum Provision	
B8 Warehouse	42 spaces
B2 Gen. Industrial	83 spaces
Required Minimum Provision	
Disabled Bays	2 spaces
Cycles	5 spaces

Type of Development	Parking Standard	Cycle Parking Standard
B1 Business and light industry	1 car space per 30m ² gross floor space	1 cycle space per 300m ² gross floor space
B2 General Industry	1 car space per 50m ² gross floor space	1 cycle space per 500m ² gross floor space
B8 Storage and Distribution	1 car space per 100m ² gross floor space	1 cycle space per 1000m ² gross floor space

An area suitable for HGVs to load/unload and turn within the site will normally be required for B2 and B8 uses, particularly for sites accessed from a classified road. Any extensions to industrial or warehouse premises should not result in the loss of HGV loading/unloading/turning spaces unless an adequate alternative can be provided within the site.

			
PURPOSE OF ISSUE		Project Status	
PACE ARCHITECTURE www.pace-architecture.co.uk			
PROJECT			
BRYN LANE			
ADDRESS			
Bryn Lane, Wrexham Ind. Estate, 11			
TITLE			
PROPOSED SITE PLAN			
CLIENT			
Portal Construction NW Ltd			
DRAWN BY nc		CHECKED BY client	DATE 28.03.23
SCALE (@ A1) 1 : 500		PROJECT NUMBER 1175A	
DRAWING NUMBER 1175 . P . 003			REV

Appendix B - Site Photographs

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Target Note 1; site access for Plot 1B



Target Notes 2 & 3; previously developed land



Target Note 5; rough grassland to south of Plot 1B



Target Note 8; rough grassland dividing Plots 1A and 1B



Target Notes 9 & 10; tall ruderal and tree line



Target Note 12; semi-improved grassland in Plot 1A



Target Note 13; Pond 1



Pond 2