Miller Field, Brymbo:

Preliminary Ecological Appraisal

Date	Author	Project Number	Approved by	Version	Comments
03/07/2024	Keymar Wake	4665	Lucy Boyett	V1	
08/09/2024	Keymar Wake	4665	Rich Cutts	V2	Minor changes following discussions regarding the recent site management.

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Wildlife Trust Consultancies

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Site	Miller Field, Brymbo, LL11 5FG Brymbo Heritage Trust (BHT)	**OS Grid Reference**	SJ 29797 52844
Surveyors	Keymar Wake and Jez Squire	**Survey Date**	19/06/2024
Type of Survey	Preliminary Ecological Appraisal		
Summary of Proposed Work	The proposed works involve developing and managing the existing green space. This includes conversion of SI neutral grassland to the north into amenity grassland and removal of scattered scrub, and retention of grassland to the south and managed as a wildflower meadow. Woodland will not be impacted.		
Designated Sites Affected	There will be no direct impacts upon any designated ecological sites		
Habitats Affected	Neutral semi-improved grassland, broadleaved woodland, tall ruderal, scattered scrub.		
Species Affected	Site has the potential to support GCN, common amphibians, reptiles, nesting birds, hedgehogs, bats and badgers		
Survey Conclusions	The site is dominated by neutral semi-improved grassland and the area to the south of the site is of moderate ecological value. Diversity in northern part of the site has been reduced by an atypical cut carried out at an inappropriate time of year, which was not to the standards requested by BHT for management of this habitat. The entire grassland habitat within the site has the potential to be highly diverse and valuable habitat, under the correct management regime. Conversion of the northern SI neutral grassland to amenity will result in a loss of biodiversity within the site and potentially important ecological habitat in the absence of mitigation. The process of the works in this area also has the potential to impact protected species within the site. Works are not considered to significantly impact protected species using the site, as long as reasonable avoidance measures and mitigation are in place.		
Further Works Required	A grassland management plan needs to be produced and followed to restore and improve the areas of SI neutral grassland to be retained. A GCN and reptile reasonable avoidance method statement and mitigation plan needs to be produced and followed throughout the works.		
Avoidance Requirements	Parts of the site are to be left undisturbed; further recommended avoidance measures include reducing the area of proposed amenity grassland.		
Mitigation / Restoration Requirements	Mitigation measures include timing of works (to avoid hibernation/nesting periods), and walkover survey for badgers prior to works starting. Further mitigation will be detailed within the GCN and reptile mitigation plan.		
Compensation Requirements	Tree planting will compensate for the loss of removed scrub habitats; recommended additional areas of appropriately managed SI neutral grassland to be retained will contribute to compensation of conversion to amenity grassland. Areas designated for ground nesting birds that are free of dog disturbance. Additional habitat creation as part of the GCN and reptile mitigation plan.		
Proposed Enhancements	Bat boxes, bird boxes and bug hotels to be installed around the site.		

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1.0 Introduction

1.1 Project Introduction

1.1.1 Enfys Ecology were commissioned by Tim Astrop of the Brymbo Heritage Trust to undertake a Preliminary Ecological Appraisal (PEA) of an area of land at Miller Road, Brymbo, LL11 5FG.

1.1.2 The proposed works involve developing and managing the existing green space to improve it for community recreation and education; as part of the Brymbo Heritage Trust, Roots to Shoots programme, to enhance ex-industrial landscapes.

1.1.3 The site comprises approximately 1.3ha, of a 16ha area of reclaimed land, predominantly open grassland, with woodland and scrub; situated within a residential and urban area. The site is open to and used regularly by the public for walking, dog walking, bike riding, children's activities etc.

1.1.4 The primary objectives (CIEEM, 2017a) of a Preliminary Ecological Appraisal Report (PEAR) are to:

- identify the likely ecological constraints associated with a project;
- identify any mitigation measures likely to be required;
- identify any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA); and,
- identify the opportunities offered by a project to deliver ecological enhancement.

1.1.5 This document has been produced to advise a client of ecological constraints and opportunities to inform their design options (with the aim of avoidance), likely mitigation, restoration and compensation requirements, and the need for further surveys. In addition, the report may provide initial recommendations in relation to relevant ecological enhancement opportunities given the site's context. This report may not necessarily provide the Local Planning Authority with enough information to assess the ecological impacts of a proposal.

1.1.6 This report has been produced in accordance with CIEEM (2017a) 'Guidelines for Preliminary Ecological Appraisal' and CIEEM (2017b) 'Guidelines for Ecological Report Writing'.

1.1.7 This report has been produced by Keymar Wake. Keymar has worked in Ecology for over ten years and has significant experience in undertaking Phase 1 surveys and Preliminary Ecological Appraisals in North Wales. Keymar also carries out a range of protected species work, including bats, amphibians, reptiles, badgers, dormice, otters and water voles.

1.1.8 The survey work to inform this report was carried out in June 2024. Habitats and species found within a discrete area of land are subject to change, this report should therefore be considered valid for a period of eighteen months in accordance with best practice (CIEEM, 2019).

1.1.9 Relevant legislation and planning policy information are included in Appendix A.

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2.0 Site Description

2.1 Survey Area

2.1.1 The survey area was dominated by open grassland and scrub, with a small area of woodland to the south. The woodland within the site was connected to a larger area of woodland to the east of the site, that continued north; with the woodland edge forming the eastern boundary of the site. The site was situated to the east of a residential estate and was in use by the public, including dog walkers and children activity groups. There were several purpose-built public footpaths, as well as desire paths throughout the site. The whole area of reclaimed land by Brymbo Heritage Trust and the survey area within in is shown in Figure 2.1 below.



Figure 2.1: The whole area of reclaimed land (yellow) and the survey area (red)
Base image ©Google Earth 2024



Figure 2.2: Aerial view of the surveyed area (red line)
Base image ©Brymbo Heritage Trust 2024

2.2 Wider Area - Connectivity and Green Infrastructure

2.2.1 The surrounding area to the south and east was predominantly urban, with large residential estates, as well as commercial buildings and industrial estates towards Wrexham. The built-up areas were interspersed with areas of amenity grassland, pasture fields and country parks containing small lakes and rivers (e.g. Alyn Waters and Moss Valley to the north and south east respectively). The Afon Cegidog and Afon Alyn flowed approximately 2.2km north and 3km east of the site respectively. The landscape to the west of the site was primarily rural with pasture fields and woodland; the immediate area to the north comprised an expanse of grassland, bare ground and scrub, with pasture fields, woodlands and rural habitat to the north of that. There was connectivity from the site to the surrounding areas through tree and hedgerow lined road and field boundaries, primarily to the north and south.

2.2.2 (PPW 12, paragraph 6.2.1). Green infrastructure (GI) is defined in Planning Policy for Wales (PPW) Edition 12[1] as "*the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect places*". Green infrastructure (GI) can function at a range of different scales; from entire ecosystems such as wetlands and rivers to parks, fields and gardens at the local scale and street trees, hedgerows, roadside verges, and green roofs/walls at the micro scale. Development proposals should take GI into consideration in order to avoid negative impacts on habitats and species, and seek ways to maintain and enhance biodiversity.

2.2.3 Specific breakdown of the GI within an area is perhaps more relevant in urban or more fragmented sites than rural locations. Unsurprisingly this site was, at the time of survey, considered to be entirely comprised of areas considered green infrastructure under current planning guidance. The entire site is in a semi-natural state, and is likely to support a range of species, both plant and animal, with the surrounding woodlands and scrub providing good connectivity to the wider landscape.

2.2.4 The wider area is shown in Figure 2.3 below.

[1] See: https://www.gov.wales/planning-policy-wales



Figure 2.3: The Site (red star) and wider landscape
Base image ©Google Earth 2024

3.0 Methodology

3.1 Desk Study

3.1.1 A desk study was undertaken through Cofnod, the North Wales Environmental Information Service, to determine the presence of statutory and non-statutory sites for nature conservation, and records of protected, or species and habitats of principal importance listed under Section 7 of the Environment (Wales) Act 2016. Desk study data was provided by Cofnod on 7th May 2024. The records were used to inform the survey and recommendations, and to provide context for evaluating the species and habitats found during the survey. Any relevant species results from the desk study are referred to in Section 4.

3.1.2 The desk study used the following search radius for this project: 1km.

3.2 Field Survey

3.2.1 The field survey was conducted on 19th June 2024 by Keymar Wake and Jez Squire, both suitably experienced professional ecologists.

3.2.2 The weather conditions during the survey were sunny, no cloud cover and no wind.

3.2.3 All parts of the site were visited where possible, the habitats were mapped following the standard Phase 1 Habitat Survey methodology (JNCC, 2010). Any rare or invasive species or incidental sightings of protected species were recorded, as necessary. The presence of and suitability of the habitats for protected species was also assessed.

3.2.4 A search for evidence or potential for protected species was carried out, including amphibians, bats, and reptiles. Evidence of badgers including setts, dung pits, hairs,

footprints, and scratching posts or trees was searched for. Trees with suitable features for roosting bats, including knot holes and other crevices, hollow trunks and dense ivy coverage were identified.

3.3 Limitations

3.3.1 The results of this survey consist only of those species encountered during a short space of time on one day. Species that use the site infrequently or are present at different times of the year may not be recorded, and the absence of species from the results of a single survey should not be taken as indicating the species' definite absence from the area in question. Descriptions of plant species concentrate on the most obvious and abundant species present as determinant of habitats present.

3.3.2 While reasonable efforts have been made to search for invasive non-native species (INNS), and any seen were recorded, this is not a comprehensive invasive species survey and does not claim or imply the definite absence of Japanese knotweed or other invasive plants, for which a specific survey should be commissioned.

3.4 Terminology

3.4.1 In this report 'site' and 'survey area' are used to refer to the area surveyed by the ecologist, which is subject to the proposed development or planning application. The only exception may be some unavoidable use of 'site' when discussing designated sites such as SSSIs. 'Search area' refers to the area from which data was obtained for the desk study.

3.4.2 English species names are generally (but not exclusively) used in the text for readability, however Appendix C contains a list of species recorded and gives scientific names. Where relevant plant abundance is described using the DAFOR scale, and where they occur, the use of the words in Table 3.1 in the report relates to this scale.

Table 3.1: The DAFOR Scale

Information	Organisation	Reference and Date
Dominant	51-100%	D
Abundant	31-50%	A
Frequent	16-30%	F
Occasional	6-15%	O
Rare	1-5%	R
Not Present	0	X

4.0 Results

4.1 Desk Study – Designated and Notable Sites

4.1.1 There was one statutory designated within 1km of the survey area; a Site of Special Scientific Interest (SSSI).

4.1.2 There were two non-statutory designated sites within 1km of the survey area; both Local Wildlife Sites (LWS).

4.1.3 There were no areas of ancient woodland within 1km of the survey area.

4.1.4 Figure 4.1 below shows the designated sites in relation to the survey area and they are described in Table 4.1.



Figure 4.1: Designated Sites within 1km of the Site – Red = SSSI; Brown = NNR

Table 4.1: Designated Sites within 1km of the Site

No.	Name	Designation	Approx. distance from site (km)	Reason for designation
1	Coedwig Ffosil Brymbo	SSSI	465m	Geological and prehistoric features
1	Brymbo Pony Fields	LWS	650m	Semi-improved neutral grassland managed by pony grazing.
2	Afon Gwenfro	LWS	650m	Grassland habitats within reclaimed coal site; wetland and river habitats.

4.2 Desk Study – Flora Records

4.2.1 There are no records of notable flora from within the survey area. The only Schedule 8 (Wildlife and Countryside Act 1981, as amended) protected plant species recorded within 1km of the site is native bluebell (*Hyacinthoides non-scripta*), with the nearest record 230m to the east.

4.2.2 There were eight records of plants that are on the rare plant register for VC 51 – Flintshire, within 1km of the survey area. These included annual pearlwort, hairy violet, marsh speedwell, smooth tare, *Rosa caesia subsp.,* and Des Etangs' St John-s wort.

4.2.3 There are no records of invasive non-native species (INNS) from within the site. Numerous INNS have been recorded from within 1km of the site, with the closest being Japanese knotweed ~300m to the north-east. Other notable records within 1km included sea buckthorn, Himalayan cotoneaster, cherry laurel, Portugal laurel and montbretia.

4.3 Desk Study – Fauna Records

4.3.1 There were no fauna records from within the site itself. There were many records of fauna within 1km of the site, including protected species; these are discussed in Section 4.7.

4.4 Phase 1 Habitat Survey

4.4.1 The following Phase 1 Habitat and feature types were recorded within the site:

A1.1.2	Broadleaved woodland – semi-natural
A2.2	Scattered scrub
B2.2	Neutral grassland – semi-improved
C3.1	Tall ruderal/fern species
J4	Bare ground

4.4.2 A Phase 1 Habitat map with target notes is provided in Figure 4.1 below. Descriptions of the habitats are provided in Table 4.2 with information associated with target notes provided in Table 4.3. Where relevant, photographs are included with the text.

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Figure 4.2: Phase 1 Habitat Survey Map
Base image © OpenStreetMap Contributors

Table 4.2: Habitat Descriptions

Habitat Description	Photo
Neutral grassland – semi-improved – approximately 0.85ha	
The majority of the site was covered by open grassland, with the northern section showing signs of recent management (See Target Note 1 – Table 4.3). The unmanaged area to the south comprised wet areas with a taller sward and greater diversity. Frequent indicator species, of the Phase 1 habitat – Semi-improved neutral grassland, within this area included sweet vernal grass, crested dogs tail, meadow buttercup and Yorkshire fog. Locally frequent species included yarrow, false oat grass, red fescue, meadow vetchling and great willowherb was locally abundant. Soft rush was locally frequent, and horsetail, hairy sedge and hard rush were occasional (sometimes locally frequent) within the southern section of the grassland, suggesting the presence of damper or seasonally wet areas. Throughout the grassland common spotted/ southern marsh orchid hybrid (the identification is yet to be fully confirmed, and it cannot be discounted that more than one hybrid species were present) were frequent – with a significantly higher abundance towards the wetter, southern section of the site. Bee orchid was also present within the site, in much lower numbers.	 **Semi-improved neutral grassland**  **Long, un-managed sward**  **Large numbers of orchids present**  **View from the west of the site, looking at the area of recently managed area to the north (L) and the unmanaged area to the south (R).**

Tall ruderal – approximately 0.03ha	
There was an area of dense tall ruderal vegetation within an open area of the woodland to the south of the site. This area was dominated by great willowherb, with occasional species such as false oat grass, creeping thistle, male fern, common hogweed and smooth sow thistle. This area was the only habitat within the site where butterflies were observed at the time of the survey.	 **Patch of tall ruderal vegetation surrounded by woodland towards the south of the site**

Broadleaved woodland – approximately 0.33ha	
Broadleaved woodland was present to the south of the site, and surrounding the site to the east and west, with the woodland edge treeline forming the site boundaries. The woodland within the site was dominated by densely growing goat willow and *salix* sp., with saplings of other broadleaf species occurring occasionally, including sycamore, hazel, pedunculate oak, rowan, and wild cherry. The saplings appeared to be all self-seeded, likely from the mature trees within the woodland surrounding the site. The understorey comprised primarily bramble, nettle, and ivy, with common spotted orchid in very low numbers. The woodland to the east of the site was not surveyed in great detail but comprised a sloping bank down to the east, with abundant species including silver birch and alder, as well as goat willow, *Quercus* sp. and a nettle and bramble understorey.	 **Densely growing goat willow dominating the woodland**  **Saplings of other species were establishing throughout**  **The woodland edge forming the eastern site boundary**  **The woodland to the east of the site, outside of the site boundary**

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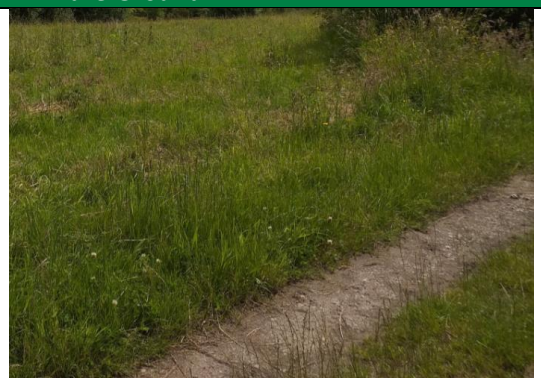
Scattered Scrub	
There were patches of scattered scrub around the eastern and western edges of the grassland, primarily comprising goat willow and *Salix* sp. These habitats were considered to be an extension of the surrounding woodland where it had started to encroach on the grassland, but due to the trees growing in smaller, isolated patches away from the woodland and towards the centre of the grassland, as well as being relatively short in stature, they have been classed as scattered scrub for the purposes of this report.	
Bare Ground	
There were public footpaths of bare ground along the western edge of the site.	 

Table 4.3: Target Note Descriptions

Target Note	Description	Photo
1	The results of this survey are based on the habitats and species present at the time of survey. The grassland to the north of the site had been subject to some recent management that was unsympathetic to the habitats and management goals of the site set out by BHT; which is understood to have been due to an inexperienced contractor carrying out the works not long before the survey was undertaken. This has reduced the diversity in this area of the site in an atypical manner than what the intended management regime would have. While the area still displayed a similar enough species assemblage as the remaining grassland to the south, to be classified as neutral grassland – semi improved, it did have significantly less species richness and was in much worse condition than the grassland area to the south. The most recent management appeared to have comprised a cut in non-continuous rows (so there were rows of uncut areas left) after some heavy rain, at the wrong time of year and the arising were left on site to mulch. There were tractor tyre ridges apparent in the ground, and the disturbance of the ground and the mulch had allowed opportunistic tussocky grass and ruderal species through such as hogweed sp., broad leaved dock, curled dock and creeping thistle. There were still orchids present in low numbers, within the uncut rows suggesting this area would likely have been as diverse as the area to the south prior to the inappropriate management, and still has the potential to be a valuable and species rich habitat.	 **Arisings left on site to mulch**  **Ridges left in the ground from tractor usage in wet weather**

Table 4.3: Target Note Descriptions

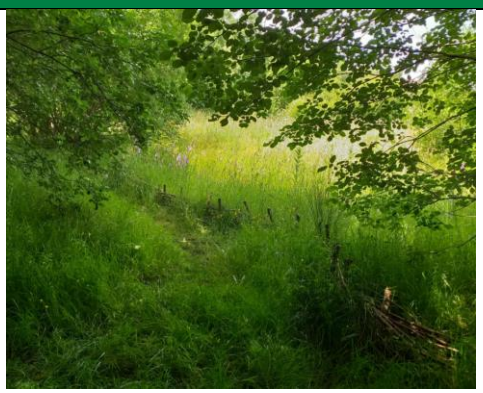
Target Note	Description	Photo
2	There was a fenced off orchid preserve to the south of the site, on the edge of the woodland, that contained very high numbers of common spotted/ southern marsh orchids. The fence was made from willow and was about 0.5m high, with need of repair in some areas and not completed. The densely populated orchid area extended north, outside the fenced area, by at least 3m.	 **Willow fence in need of repair**  **Orchids extending out of fenced area**
3	There was a dense patch of great willowherb establishing within the higher quality grassland to the south of the site. This area of grassland did not appear to be under any regular management, seed heads of last years orchids were present suggesting the vegetation had not been cut in a year. Great willowherb is an aggressive competitor and without control it will start to outcompete and dominate the, currently, diverse grassland.	 **Patch of great willowherb**
4	There were two areas of bare ground within the woodland to the south (not big enough to be mapped as a separate habitat), coinciding with the forestry school areas as part of the proposed works (Figure 5.1).	

Table 4.3: Target Note Descriptions

Target Note	Description	Photo
5	There was a dry ditch along the western boundary of the site, which was considered likely to still function as a drain during periods of particularly wet weather.	

4.5 Flora

4.5.1 Overall floral diversity of the site was relatively high, although there were areas where a number of species were locally dominant. This was due to the large variety of herbs and grasses encountered throughout the better-quality area of grassland to the south of the site. There were at least three species of orchid present within the site; albeit identification of the likely hybrids could not be confirmed; including bee orchid which is particularly slow growing and may take up to six years to reach a flowering stage. The woodland to the south had low diversity, being dominated by goat willow, but the surrounding areas of woodland contained a wider range of broad leaf species that were showing to seed within the site.

4.5.2 No plants present within the site are protected by Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) or listed under Section 7 of the Environment (Wales) Act 2016. No other nationally or locally rare species were recorded.

4.5.3 Appendix C contains a list of plant species recorded during the survey.

4.6 Invasive Non-Native Species

4.6.1 No invasive, non-native species (INNS) from Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were present within the site at the time of survey. The closest records of INNS to the site was Japanese knotweed at 326m away. Other species recorded within 1km were Himalayan balsam, Himalayan cotoneaster, Japanese rose, Montbretia, New Zealand pigmyweed, Nuttall's waterweed and variegated yellow archangel.

4.7 Fauna

4.7.1 The survey results for protected species including records within a 1km radius of the site are described in Table 4.4 below.

Table 4.4: Results of Protected and Notable Species Assessment

Species	Suitability of Habitat	Desk Study Records	Further Species Consideration Required?
Amphibians – including great crested newts (GCN)	There were no standing water bodies within the site and therefore no breeding habitat for amphibians within the survey area. Areas of seasonal standing water cannot be ruled out, particularly with the ditch to the west of the site (Target note 5), but would likely be short-lived, and therefore offer limited potential for breeding amphibians. The nearest known ponds are over 500m from the site, approximately 700m to the north west at Brymbo Steelworks, where there is a known population of GCN present. The woodland and un-managed areas of grassland within the site would offer suitable foraging habitat for amphibians, particularly common frogs and toads. There were potential refuge areas under scrub and dense vegetation, but no suitable habitat for hibernacula available within the site; there could be potential hibernacula habitat in the surrounding woodland and scrub areas.	There were multiple records of GCN, the closest being 650m to the north west. All records (except 1) were from the ponds within the Brymbo Steelworks that are monitored annually. The one exception was also recorded 650m away, to the north and was a single adult. There were several records of other amphibian species within 1km of the site, the closest being palmate newt at 189m away. Other species within 1km included common frog, common toad and smooth newt.	Yes – potential foraging and passing through/occasional presence within the site due to proximity of records. Unlikely to host large populations of any amphibian species.
Badger	The site itself provided suitable foraging habitat for badgers within the grassland and woodland. The woodland present in the site was on flat ground and not considered highly suitable for sett building. The sloping woodland along the eastern boundary of the site, as well as surrounding blocks of woodland, provided suitable sett building habitat for badgers; though the area surrounding the site was very busy with the general public and dog walkers. No evidence of badgers was recorded within the site but it is considered they would be present in the area.	[redacted]	Yes – foraging within the site and potential sett building in woodland areas immediately adjacent.

Table 4.4: Results of Protected and Notable Species Assessment

Species	Suitability of Habitat	Desk Study Records	Further Species Consideration Required?
Bats	The site had low suitability for roosting bats; although there were numerous trees within the woodland, they were largely narrow-stemmed and lacking large enough gaps, cracks or crevices for bat use, although the full extent of each trunk could not be checked from the ground due to canopy cover. The adjacent woodland areas likely had more suitable roosting habitat in the taller mature trees. The neighbouring residential estate would also provide suitable roosting habitat within the houses. The site is highly suitable for bat foraging and commuting, and has high levels of connectivity to the wider landscape; it is highly likely bats will be present within the site.	There were four records of bats within 1km of the site; common pipistrelle (and *Myotis* species. There are also known Pipistrelle, lesser horseshoe and brown long eared roosts within the Brymbo Steelworks approximately 700m to the north west of the site.	Yes – foraging/ commuting
Birds	All of the taller vegetation on site should be considered suitable habitat for nesting birds. The rough grassland would also provide cover for ground nesting species, though the abundance of dogs within the site would likely deter many species.	There are 386 records of 77 species of birds within a 1km radius of the site. The closest record was skylark at 250m from the site. The closest Schedule 1 bird species was barn owl, recorded nesting in the Brymbo Steelworks 700m to the north west of the site. Other Schedule 1 species within 1km included Peregrine falcon, fieldfare, brambling, kingfisher, redwing, red kite and merlin.	Yes – nesting within the site
Hedgehog	The entire site is suitable for hedgehogs, with foraging opportunities and suitable places for shelter or hibernation.	There were 17 records of hedgehog within 1km, the closest being 70m west of the site in the residential estate.	Yes - foraging and refuge within the site

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Table 4.4: Results of Protected and Notable Species Assessment

Species	Suitability of Habitat	Desk Study Records	Further Species Consideration Required?
Reptiles	The entire site area has some suitability for reptile species, with foraging areas in the rough grassland and woodland and potential basking areas on the bare ground. As the site is very busy with people and dogs it would make larger populations of reptiles less likely, but due to the highly suitable surrounding habitats (particularly the area to the north of the site) they will likely visit the site; particularly common lizard and slow worms.	There was only one record of common lizard within 1km of the site, 900m to the north from 1998. However, there is a known common lizard population at the Fossil Forest of the Brymbo Steelworks, less than 700m from the site.	Yes – potential occasional presence within the site

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5.0 Discussion

5.1 Proposed Works

5.1.1 The proposed works involve developing and managing the existing green space to improve it for the community recreation and education; as part of the Byrmbo Heritage Trust, Roots to Shoots programme, to enhance ex-industrial landscapes. The works will comprise the removal of a large area of the neutral semi-improved grassland (and the existing scattered scrub within the centre of it but not along the site boundaries) and converting it to amenity grassland (approximately 0.6ha will be removed, 71% of the existing habitat). This will be used to create a bike track, playing field, decked social area and adventure playground. Additional paths will also be created in this area for public access. Some additional tree planting to act as screening has been proposed in this area. The works also include the management/ retention of a wildflower meadow in the area of currently better quality neutral semi-improved grassland and an orchid preserve in the area currently partially fenced off. There will also be forestry school and activity areas created within the woodland. Figure 5.1 shows the current plans for the site.

5.2 Impacts on Designated and Notable Sites

5.1.2 The proposed works will not have a direct impact on any statutory or non-statutory designated nature conservation sites. The nature of the works, being habitat modification and minor construction works, will not impact the closest SSSI or any of its qualifying features as it is almost 500m away.

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Figure 5.1: Plan of the Proposed Works Base image © Brymbo Heritage Trust (2024)

5.3 Habitats

5.3.1 Table 5.2 provides information with respect to the habitats which were recorded on site and whether these habitats are listed as a 'habitat of principal importance' under Environment (Wales) Act 2016 or listed as a local Biodiversity Action Plan habitat, or other local conservation priority habitats. Consideration of the potential impacts of the proposed project on the habitats are also discussed.

Table 5.2: Overall Site Assessment Rating

Habitat Recorded	Habitat Value	Discussion
Neutral semi-improved grassland	N/A	The grassland habitat is considered to have relatively high diversity and orchids were frequent throughout, with one area containing a particularly high numbered, dense population of common spotted/ southern marsh orchids. The area to the north had undergone some recent, atypical management, that was not as beneficial to the habitats as it could have been. Therefore, this area was less diverse and showed more common opportunistic species establishing but there were still areas characteristic of neutral grassland and orchids were still present in the areas the grass cutting had missed. This habitat is not considered a priority habitat as it is still semi-improved grassland and does not meet the criteria for a lowland meadow; however, if managed properly, the whole area could be a species rich, diverse neutral grassland.
Broadleaved woodland	N/A	The woodland within the site was generally species poor in that it comprised primarily of goat willow and potentially other *Salix* sp. The woodland surrounding the site had higher diversity and saplings of other broad leaf species were starting to grow within the site, which would ultimately increase the species richness of the woodland. The species present at the time of survey did not correspond with the assemblages required to classify the habitat as wet woodland (despite the dominating presence of *Salix sp.*) with, almost exclusively, goat willow dominating and a lack of ground flora and understorey species; the understorey was poorly developed due to the canopy coverage of the densely packed trees.
Key: HPI – Habitat of Principal Importance under Environment (Wales) Act 2016 LBAP – Local Biodiversity Action Plan habitat		

5.3.2 The works will result in a loss of a significant portion (over 70%) of potentially diverse and important grassland habitat, replacing it with species poor amenity grassland. The works do propose the retention of some of the SI neutral grassland to the south, to manage as a wildflower meadow and a designated orchid preserve. Consideration needs to be given to the size of these areas, and where possible the areas of retained SI neutral grassland should be

increased and the area of amenity grassland decreased to minimise the loss of biodiversity and potentially important habitat within the site. Additional measures to retain and encourage the grassland biodiversity within the north of the site should also be considered, including leaving unmanaged areas around the edge of the grassland, as well as 'patches' of unmanaged grassland/ wildflowers within the amenity area. This will not only increase the biodiversity within the grassland habitat but enhance the site for other species by creating 'stepping stones' and areas of connectivity around the site and within the short, managed grassland. A grassland management plan (to include management of the orchid preserve area) will need to be produced and followed to maintain biodiversity within the site during, and after the proposed works.

5.3.3 The surrounding woodlands were starting to encroach on the grassland through sapling growth, and the establishment of *Salix* sp. scrub. The woodland will not be significantly impacted by the proposed works, there are no plans to remove any of the woodland habitat and the proposed activity areas within the woodland appear to be in areas that are already cleared and comprise bare ground amongst the trees. In the absence of management, the *Salix* sp. scrub could start to overtake the grassland areas. As part of the grassland management plan, management of the woodland edges should be considered and included to prevent scrub encroachment.

5.3.4 There were two areas of dense great willowherb within the site (though only one of them large enough to be mapped). The area within the woodland to the south was the only area of the site that butterflies were observed flying during the survey, and did appear to be isolated from the grassland by the dense woodland and lack of ground flora. Therefore, it is considered that this area would be of less risk to the grassland; it would benefit from some minor management but does not need to be managed intensively or removed as it seems to provide an important habitat for invertebrate species within the site. The area of great willowherb amongst the grassland (Target Note 3), risks dominating the grassland species if no management/ removal of this species from this area, is not carried out as part of the works. The methods for managing these areas will need to be detailed within the grassland management plan.

5.4 Flora

5.4.1 No plants present within the site are protected by Schedule 8 of the Wildlife and Countryside Act 1981 (as amended) or listed under Section 7 of the Environment (Wales) Act 2016. No other nationally or locally rare species were recorded.

5.4.2 The proposed works will result in a reduction of orchid abundance within the site, in the areas where it is proposed to convert the area to amenity grassland; the necessary intensive management of this area will prevent the orchid species establishing. The bee orchid, that was found in very low numbers within the site, will be particularly at risk if it is not encouraged to establish outside of the proposed amenity grassland. The plans do propose an orchid preserve, which is located within the existing orchid rich area (Target Note 2), and should aim to increase the size of this area, as well as improving the fencing/ barriers to prevent people

and dogs accessing the area. The grassland management plan will include provisions for the orchids on site and specific management to help encourage orchid growth and diversity within the designated areas.

5.5 Fauna

5.5.1 The primary impact of the scheme on fauna using the site is likely to be disturbance from the actual works, the modification of the grassland habitat and the potential increased footfall (though the site is already popular with the public and dog walkers). The works to the south of the site are considered to be relatively minor, and will not result in any habitat removal or large amounts of disturbance; the management of the wildflower meadow and reinstatement of the orchid preserve will likely only enhance the site for different species. The highest potential for disturbance and long-term impacts to species within the site (in the absence of mitigation), will come from replacing the SI neutral grassland with intensively managed amenity grassland, and the creation of the bike track that will likely involve some machinery and excavations on site.

5.5.2 ***Amphibians***

As the site provides suitable foraging and shelter habitat for amphibians, and there are GCN records of breeding populations in the Brymbo steelworks approximately 700m to the north west of the site, it should be assumed the GCN could be present within the site. There is connectivity to the site from the Brymbo steelworks ponds through large areas of scrub and woodland, and it cannot be discounted that the residential areas between the site and steelworks contain some garden ponds that would provide suitable breeding habitat for GCN. The lack of waterbodies (and suitable breeding habitat) on or adjacent to the site, as well as the lack of suitable hibernacula, suggests GCN are unlikely to be resident in high numbers within the site; but they could visit the site on occasion in small numbers.

The proposed works could result in some low potential GCN habitat loss/modification, and reduced connectivity within the site, with the proposed amenity grassland. The works themselves could also result in the disturbance of any individual animals may be present within the site. As the habitats within the site are not considered optimal GCN habitat, and suitable habitat will be retained around the site; coupled with the low likelihood of GCN presence; it is not considered that a licence is necessary for the works, as along as mitigation is in place. Further recommendations for amphibians can be found in Section 6.

5.5.3 ***Badger***

The site itself provided suitable foraging habitat for badgers, and the surrounding woodland, particularly along the eastern boundary of site, [redacted]

The proposed works will not detrimentally impact any badger habitat, but they could potentially cause significant disturbance if they are carried out in close proximity to a sett, namely any vegetation clearance works or excavations within the proposed amenity grassland and bike track areas. Mitigation measures for this species are discussed in Section 6.

5.5.4 ***Bats***

The site is unlikely to be used by high numbers of roosting bats, but the surrounding residential properties and mature woodland are highly suitable for roosting bats. Therefore, it is highly likely bats will use the site for foraging and commuting through.

The proposed works have the potential to impact bats using the site through disturbance during the works process, and a reduction in quality of foraging habitat by removing the SI neutral grassland and replacing it with amenity. No woodland, nor mature trees, are proposed for removal as part of the works so no potential roosting areas will be lost and no further surveys are needed. Mitigation measures for this species are discussed in Section 6.

5.5.5 ***Birds***

The woodland, scrub and grassland within the site provides suitable nesting bird habitat for a range of species and it should be assumed that birds are using these areas to nest during the breeding season (March – September) inclusive.

The proposed grassland works and scrub removal have the potential to disturb nesting birds, and will result in the loss of nesting bird habitat. As there are no plans to remove any significant areas of the woodland these areas will remain available for birds to use. Mitigation measures to reduce the risk to nesting birds are discussed in Section 6.

5.5.6 ***Hedgehog***

The site has foraging and hibernation potential for hedgehogs and good connectivity to wider suitable hedgehog habitat. It is considered likely that hedgehogs could be present within the site during the works period.

The main risk to hedgehogs from the proposed works will be the conversion of the SI neutral grassland to amenity grassland. The removal of the scattered scrub could result in direct disturbance to hedgehogs using those areas, and the removal of shelter/ hibernacula habitat; the introduction of short amenity grassland will result less vegetated cover for hedgehogs to move through and therefore reduced connectivity within this area of the site. Mitigation measures to reduce the risk to hedgehogs are discussed in Section 6.

5.5.7 ***Reptiles***

As the site provided suitable habitat for reptiles (namely slow worms and common lizards), and there are known populations nearby with connecting habitat between them and the site, it should be assumed that reptiles may be present within the works area in small numbers.

The proposed works will not result in the removal of a significant area of reptile habitat; though the proposed amenity grassland will be a lot less suitable than the current grassland,

and without mitigation connectivity through this area of the site could be removed entirely. The process of works also has the potential to disturb any animals that may be present within the site. As it will be assumed that reptiles will be present in small numbers, no further surveys are required and the mitigation will reflect this. Further recommendations for reptiles can be found in Section 6.

5.6 Invasive Non-Native Species (INNS)

5.6.1 Whilst there were no schedule 9 species recorded within the site, there were several records of INNS within 1km, and it cannot be discounted that invasive non-native species may be present or start to establish within the site. General biosecurity measures should be followed at all times during the works (Appendix D) and if any invasive species become apparent on site, the works should stop and advice should be sought from a specialist.

6.0 Avoidance, Mitigation and/or Restoration

6.1 The Step-Wise Approach

6.1.1 Development proposals should take green infrastructure (GI) into consideration in order to avoid negative impacts on habitats and species, and seek ways to maintain and enhance biodiversity. Impacts on habitats and species should be treated in a step-wise manner (Planning Policy Wales PPW12, paragraph 6.4.15), by seeking to:

- **Avoid** damage to biodiversity in its widest sense by maintaining the largest possible area of existing habitat supporting biodiversity and functioning ecosystems, particularly Section 7 habitats and species where present, through careful development design and consideration of long-term maintenance and management and ensuring that retained habitats continue to be well connected to adjacent habitats to provide connectivity for key species.
- **Mitigate** or **restore** by identifying measures to address the specific negative effects by repairing damaged habitats and disturbed species. The measures should seek to restore in excess of like for like, accounting for disturbance and time lags for the recovery of habitat and species, and in every case, mitigation or restoration measures should seek to build ecosystem resilience within the site and where possible the wider area.
- As a last resort off-site **compensation** for unavoidable damage must be provided. This must be of significant magnitude to fully compensate for any loss.
- All development must **deliver a net benefit** for biodiversity and ecosystem resilience from the baseline state (proportionate to the scale and nature of the development proposed).

6.2 Avoidance

6.2.1 Based on the ecological information set out in this Preliminary Ecological Appraisal, there will be no impacts on any Habitats of Principal Importance for Wales, which should be avoided wherever possible.

6.2.2 In addition, the following habitats provide a valuable contribution to the green infrastructure provided by the site, and, will largely be retained as part of the works:

- Neutral semi-improved grassland
- Broadleaved woodland

6.2.3 The conversion of the SI neutral grassland into amenity grassland reduces the quality of the habitat, but is still considered green infrastructure; though connectivity for some species within this area of the site will be removed in the absence of mitigation. The works to the south of the site will only improve the quality of the GI habitats as long as mitigation and management plans are followed.

6.2.4 With respect to the potential impact of bats from lighting associated with development schemes, the Institute of Lighting Professionals (2023) 'Bats and Artificial Lighting at Night' guidance suggests that the ecological mitigation hierarchy applies to lighting design: Impacts to biodiversity should be avoided in the first instance through design and where this has been

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clearly demonstrated not to be possible, appropriate mitigation needs to be put in place. Compensation is the least desirable option, so all other avenues should first be explored and ruled out. In parallel, opportunities to design lighting betterment for biodiversity should be sought wherever possible.

6.2.5 It is therefore important to integrate avoidance measures into developmental design, by retaining ecologically functional 'dark corridors' within schemes wherever feasible, and in preference to seeking lighting mitigation strategies. Consideration should be given to the lighting effect of a scheme on Key Habitat and Supporting Habitat areas for bats, as well as commuting routes.

6.2.6 Lighting impacts will be avoided on the site, as the proposal includes no additional lighting.

6.3 Mitigation

6.3.1 This section sets out the likely mitigation measures which should be adopted as part of the project to minimise potential impacts on biodiversity features.

6.3.2 The following general mitigation measures should be adopted at all times during the works:

- Prior to the start of works, a toolbox talk should be given to everyone involved in the project to set out any ecological protection measures and a log of this should be kept.
- Working areas should be kept to the minimum required.
- Works should be avoided within 1 hour of dawn and dusk where possible, in order to avoid disturbance to nocturnal animals.
- Storage of fuel must follow best practice. Potential pollutants should be restricted to site compounds and hardstanding areas.
- Should it be necessary to have any excavations left open overnight a suitable ramp (such as a plank or branch) must be provided to allow badgers, and other animals to escape the pit. Ramps could be created by grading the slope at the edges or using scaffold boards.
- All materials brought onto site should be stored on hard standing where possible. Materials should be stored on raised pallets or bagged, to prevent amphibians (or other wildlife) from taking refuge beneath them.
- Any terrestrial mammals seen must be allowed to leave the area on their own. If this is not possible e.g. the animal is injured or trapped then an ecologist must be called.
- If at any point in the works an amphibian or reptile is found within the works area all works in the vicinity of the sighting must immediately cease. Common amphibians should be moved from the working area by site workers (wearing gloves) and placed in a nearby hedgerow. Reptiles will usually retreat to a safe area of their own accord. If a GCN is found then all works must stop and the ecologist must be called.

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

6.3.4 ***Amphibians / Reptiles***

A GCN and reptile Reasonable Avoidance Method Statement (RAMS) and Mitigation plan will need to be produced and followed throughout and after the works. This will need to include an appropriate working method (including supervision of works) and timing constraints to reduce/ prevent the risk to GCN, common amphibians and reptiles, as well as appropriate mitigation to enhance the site for all species involved (including the creation of hibernacula, refugia and basking areas). The RAMS will be based on the avoidance of finding GCN on site; if at any point GCN are discovered during the works then works will have to stop and a licence may be required from NRW before they can continue.

6.3.4 ***Badgers***

A walkover of the woodland to the east should be carried out prior to works starting to determine if there are badger setts present; further surveys such as camera traps may be required if setts are found, to establish if they are active. If there is an active sett present then a licence may be required from NRW prior to works starting and there will be restrictions of timings of works, as well as the use of machinery within 30m of the sett.

6.3.5 ***Hedgehogs***

Care must be taken regarding clearance of any piles of brushwood, plant material or other 'habitat piles' in the colder months due to the possibility of disturbing hibernating animals, including hedgehogs. The removal of the scrub within the existing SI neutral grassland to the north of site should not be carried out between November and March, (and October and April if daytime temperatures are below 10°C) to avoid disturbing hibernating hedgehogs (as well as other species). All arisings from the SI neutral grassland clearance should be removed from site immediately so as not to create habitat piles that can be used by hedgehogs; or relocated to an area of the site where they can be left indefinitely to enhance the area for species that would use them as refuge.

6.3.6 ***Nesting Birds***

The vegetation removal within the SI neutral grassland to the north of the site should be undertaken outside of the nesting bird season (which is March – September inclusive). If it is necessary to carry out any vegetation works within this period, a nesting bird survey must be carried out by an ecologist immediately prior to works starting (no more than 48 hours beforehand) to ensure that no active nests will be affected. If active nests are found then work must be delayed until all chicks have fledged.

6.3.7 ***Bats***

While no mature trees are currently proposed for removal as part of the works, if it is necessary to remove any of the woodland areas then further survey will be required by a licenced ecologist, to determine if there are any potential bat roosting features that may be impacted by the works. No works will be carried out within an hour of sunset or sunrise, or

through the night, during the summer months to avoid disturbing bats, and other nocturnal wildlife that may be using the site.

6.4 Restoration

6.4.1 The SI neutral grassland to the south of the site will be restored and improved by following a specifically designed grassland management plan, and the re-instatement of a larger, more secure orchid preserve should restore the orchid species within the site. The SI neutral grassland to the north of the site is currently subject to inappropriate management and is not as good a quality habitat as the area to the south, or as it has the potential to be. The majority of this area of grassland will be converted to amenity grassland as part of the proposed works, but if the recommendations detailed in Section 5.3.2 and the required grassland management plan are followed, then additional areas within the proposed amenity grassland will be retained as SI neutral grassland and restored to improve their biodiversity and connectivity features.

6.5 Compensation

6.5.1 The current proposed loss of SI neutral grassland from the north, in the conversion to amenity grassland, cannot be compensated for on-site. While the grassland to the south will be retained and restored, and thereby potentially contributing to the compensation of the loss of the less diverse grassland to the north, it will not be considered enough to result in a net benefit of biodiversity for the site. The proposed area of amenity grassland should be reduced (as per previous recommendations in Section 5), and additional areas of appropriately managed SI neutral grassland, around the edges of the amenity grassland, and as 'stepping stone' patches around the amenity areas, should be retained to contribute to the compensation of the loss of the less diverse SI neutral grassland and increase biodiversity within the site. This will be detailed in the required grassland management plan. The loss of this less valuable SI neutral grassland will also be offset by creation/enhancement of habitats elsewhere on site (which will be detailed in the GCN and reptile mitigation plan, as well as the bat and bird compensation/enhancements detailed below).

6.5.2 ***Birds***

The loss of potential nesting habitat in the removal of the scrub will be compensated for in the proposed screening treeline, to be planted towards the centre of the site. The available plans do not include details of what is to be planted there but it is recommended that semi-mature/ mature native broadleaf species are planted to provide allow for their immediate use by nesting birds.

To compensate for the loss of (albeit low with regards to dog abundance) potential habitat for ground nesting birds within the SI neutral grassland, sectioned areas of wildflower meadow to be retained and managed should be fenced off to protect the grassland from trampling, and to allow for secure areas for ground nesting birds where dogs cannot enter. Where necessary, purposely strimmed paths should be included within the remaining areas

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to allow the public to benefit from walking through them, but a strict 'dogs on lead' policy in these areas should be enforced. The specifics of this should be detailed in the grassland management plan and should show consideration to ground nesting birds.

6.6 Enhancement

6.6.1 Planning Policy Wales (PPW12, paragraph 6.4.5) confirms that planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species (not including non-native invasive species), locally or nationally and must work alongside nature and it must provide **a net benefit for biodiversity** and improve, or enable the improvement, of the resilience of ecosystems.

6.6.2 Based on the development proposals provided at Enfys at this stage in the design process, the following recommendations in relation to providing a net benefit for biodiversity as a result of the proposed development include:

- A grassland management plan
- A GCN, common amphibian and reptile mitigation plan – to include specific enhancements for these species

6.6.3 In addition, the provision of additional features which could be used by bats, nesting birds and invertebrates, should be incorporated into the scheme.

6.6.4 ***Bats***

The addition of at least eight bat boxes within the trees along the site boundaries and along the woodland edges would enhance the site for bats by providing roosting opportunities in areas where the trees are not currently considered mature enough to do so. The boxes should be at least 3m above the ground and be placed on elevations facing preferably south, south-east and south-west and away from lighting spill from adjacent properties or street lighting. The boxes should be made from woodcrete or woodstone to ensure the longevity of the boxes. Bat boxes such as the Woodstone large multi-chamber, Schwegler 2F or the general-purpose wood concrete bat box should be used on the trees.

6.6.5 ***Birds***

The provision of nest boxes will provide additional enhancement for birds. At least four bird boxes should be incorporated into the site's layout. Bird boxes should include:

- Boxes with a 32mm entrance (sparrow boxes)
- Boxes for smaller birds (25-28mm entrance)
- Boxes with 45mm opening (starling box)

The boxes should be placed near to and facing areas of trees and other vegetation such as gardens or the site boundaries. These boxes should be secured mounted on the trees or proposed container building, using non-harmful nails (non-rusting, ideally aluminium,

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between 2-4m from the ground and facing north/north-east. The boxes should ideally be woodcrete or woodstone boxes rather than wooden boxes as they will last longer and with limited maintenance.

6.6.6 ***Invertebrates***

To enhance the site for invertebrates, 'bug hotels' should be constructed and position around the site. These should be a combination of large stand-alone structures, as well as smaller examples that can be attached to trees and containers within the site. Hand-made bug hotels, possibly as part of a community activity within the site, would benefit both the invertebrate species present and members of the public using the site by increasing their awareness and appreciation of invertebrate importance.

7.0 Further Works

7.1 Further Works

7.1.1 Table 7.1 below provides a summary of further ecological requirements and considerations associated with the proposed development. Note that "Pre-construction" means prior to the works phase beginning on site, whereas "Immediately prior to clearance" means during the works, but prior (ideally within 48 hrs) to that particular operation (e.g. tree felling, demolition) beginning.

Table 7.1: Summary of Further Ecological Requirements and Considerations

Constraint	Work Stage	Species/ Habitat	Work	Location	When possible
Requirement of mitigation plan	Prior to finalising plans for the site	GCN, common amphibians and reptiles	Creation of Reasonable Avoidance Method Statement (RAMS) and Mitigation plan	SI neutral grassland and associated scrub to the north of the site	N/A
Requirement of management plan	Prior to finalising plans for the site	SI neutral grassland	Creation of grassland management plan	SI neutral grassland across the whole site	N/A
Any works requiring machinery or excavations (e.g. creation of the skate park)	Prior to work starting	Badgers	Walkover to look for setts	Woodland along the eastern boundary of the site	All year
If any vegetation clearance in March – September	Immediately prior to clearance, whenever this occurs	Nesting birds	Nesting bird checks	Any grassland, scrub, tree, or tall vegetation clearance	All year; additional measures apply March-September
Removal of scrub, brash, arisings	All	Reptiles, amphibians, hedgehogs	Check carefully for animals (by ecologist where applicable)	Across the site	Must **not** be done during hibernation season (November-March) **or** periods of cold weather

Constraint	Work Stage	Species/ Habitat	Work	Location	When possible
Felling or pruning of any mature trees	Prior to works starting	Bats	Ground based assessment and possibly climbing surveys to assess potential bat features	Within woodland and trees around site boundaries	All year

7.2 Green Infrastructure Statement

7.2.1 Planning Policy Wales (PPW12, paragraph 6.2.12) states that a green infrastructure statement should be submitted with all planning applications. This statement should be proportionate to the scale and nature of the development proposed and will describe how green infrastructure has been incorporated into the proposal. This will need be provided to support a planning application, and should illustrate how the step-wise approach has been adopted in relation to the project proposals.

7.2.2 Further information regarding green infrastructure requirements within Wrexham is given in Appendix A.

8.0 References

CIEEM. (2017a). *Guidelines for Preliminary Ecological Appraisal*, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM. (2017b). *Guidelines for Ecological Report Writing*, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

CIEEM. (2019). 'Advice Note on the Lifespan of Ecological Reports and Surveys'. Chartered Institute of Ecology and Environmental Management, Winchester.

JNCC. (2010). *Handbook for Phase 1 Habitat Survey: a technique for environmental audit.* JNCC, Peterborough.

APPENDIX A Legislation and Planning Policy

Amphibians

The most common species are protected from sale under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). These are as follows: common frog, *Rana temporaria*; common toad, *Bufo bufo*; palmate newt, *Lissotriton helveticus*; and, smooth/common newt, *Lissotriton vulgaris.* This legislation protects them from sale, or advertising/offering them for sale.

The UK's two rarest amphibians are protected under the Conservation of Habitats and Species Regulations 2017 (known as 'the Habitats Regulations'). This is because they have declined throughout Europe in recent decades. The Habitats Regulations lists the following amphibians as European Protected Species (EPS):

- Great crested (or Warty) newt, *Triturus cristatus*
- Natterjack toad, *Epidalea calamita*

Under the Habitats Regulations, it is an offence if you:

- Deliberately capture, injure or kill any wild animal of an EPS;
- Deliberately disturb wild animals of any such species;
- Deliberately take or destroy the eggs of such an animal; or,
- Damage or destroy a breeding site or resting place of such an animal.

Disturbance is defined as that which is likely:

- To impair their ability: to survive, to breed or reproduce, or to rear or nurture their young, or, in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- To affect significantly the local distribution or abundance of the species to which they belong.

There are other offences relating to the possession, transport, selling or exchange of a protected species.

Badgers

The Protection of Badgers Act 1992 fully protects badgers and their setts. Offences include:

- killing, injuring and taking (or attempting these);
- possession of a dead badger (or derivative);
- cruelly ill-treating a badger;
- damaging a badger sett or any part of it;
- destroying a badger sett;
- obstructing access to / entrance of a badger sett;
- causing a dog to enter a badger sett;
- disturbing a badger whilst occupying a sett.

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Badgers are also listed on Schedule 6 of the Wildlife and Countryside Act 1981 (as amended), which prohibits certain methods of killing and capture.

Bats

All species of bat, their breeding sites and their resting places in England and Wales are protected through a 'dual' system of protection, under the England and Wales Habitats Regulations and Wildlife and Countryside Act (1981) as amended. Because two regimes give legal protection to bats, the implications of both regimes must be fully understood.

Regulation (Reg.) 43 of the England and Wales Habitats Regulations makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats (which includes any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate or to affect significantly the local distribution or abundance of the species to which they belong);
- damage or destroy a breeding site or resting place of a bat; or
- possess, control, transport, sell or exchange, or offer for sale or exchange, any live or dead bat or part of a bat or anything derived from a bat or any part of a bat

Under Section 9 of the W&CA (s.9(4)(b), 9(4)(c) and 9(5) only), it is an offence (in relation to bats) to:

- intentionally or recklessly disturb a bat while it is occupying a structure or place of shelter or protection;
- intentionally or recklessly obstruct access to any structure or place used by a bat for shelter or protection; or
- sell, offer or expose for sale, or have in their possession or transports for the purpose of sale, any live or dead bat or any part of, or anything derived from a bat (or be responsible for adverts suggesting the intention to do this).

Under both laws Natural Resources Wales are empowered to issue licences to carry out work to bat roosts for reasons of overriding public interest. It is not illegal to tend to a disabled bat pending recovery.

Birds

Under the Wildlife and Countryside Act 1981 (as amended) and the Countryside and Rights of Way (CRoW) Act 2000, all wild birds, their nests and eggs are protected during the breeding season (typically March to August inclusive). This makes it an offence to:

- Intentionally kill, injury or take any wild bird.
- Take, damage or destroy the nest of a wild bird included in Schedule ZA1.
- Take, damage or destroy the nest of any wild bird while that nest is in use or being built.
- Take or destroy an egg of any wild bird.

Hedgehogs

Hedgehogs are listed under Section 7 of the Environment (Wales) Act 2016, therefore public bodies have a duty to conserve them in the exercise of their functions.

They are listed under Section 6 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence for them to be killed or taken by certain methods.

Reptiles

All British reptiles are protected from intentional killing, injuring and sale under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), including the four common species:

- Adder, *Vipera berus*
- Grass snake, *Natrix helvatica**
- Slow worm, *Anguis fragilis*
- Common lizard, *Zootoca vivipara*

* The native UK grass snake (also referred to as the barred grass snake) was originally listed under *Natrix natrix* in the W&CA 1981 (as amended); formerly considered to be a sub-species of *N. natrix* (*N. natrix helvatica*), the barred grass snake was recognised as a separate species in 2017 following genetic analysis of European *Natrix* populations.

This legislation aims to protect them from persecution and also from exploitation in the pet trade, and for which the following are offences:

- Intentional killing, injuring or taking.
- Intentionally or recklessly damaging / destroying a place of shelter / protection.
- Intentionally or recklessly disturbing an animal in its place of shelter / protection.
- Intentionally or recklessly obstructing access to its place of shelter / protection.
- Possession (live or dead, including derivatives), sale and offering for sale.

The UK's two rarest reptiles are afforded additional protection under the Conservation of Habitats and Species Regulations 2017 (known as 'the Habitats Regulations'). This is because they have declined throughout Europe in recent decades. The Habitats Regulations lists the following reptiles as European Protected Species (EPS):

- Sand lizard, *Lacerta agilis*
- Smooth snake, *Coronella austriaca*

Under the Habitats Regulations, it is an offence if you:

- Deliberately capture, injure or kill any wild animal of an EPS;
- Deliberately disturb wild animals of any such species;
- Deliberately take or destroy the eggs of such an animal; or,
- Damage or destroy a breeding site or resting place of such an animal.

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Disturbance is defined as that which is likely:

- To impair their ability: to survive, to breed or reproduce, or to rear or nurture their young, or, in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- To affect significantly the local distribution or abundance of the species to which they belong.

There are other offences relating to the possession, transport, selling or exchange of a protected species.

Protected Plants

The Wildlife and Countryside Act 1981 (as amended) makes it illegal to uproot any wild plant without the permission of the landowner. In addition, plants which are either rare or vulnerable to exploitation are listed on Schedule 8, for which it is an offence to:

- Intentionally pick, uproot or destroy.
- Sell, offer or expose for sale.

Invasive Non-Native Species

Invasive non-native species are listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended), for which the following are offences:

- Release into the wild, or to allow the escape of, any animal which is not ordinarily resident, or a regular visitor to, Great Britain in a wild state, or which is included in Part 1, Schedule 9.
- Plant in the wild, or otherwise cause to grow there, any plant included in Part 2, Schedule 9.

National Planning Policy

National Planning Policy in Wales is set out in Planning Policy Wales, Edition 12 , issued in February 2024. This document sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. PPW, the TANs, MTANs and policy clarification letters comprise national planning policy.

PPW Edition 12 Section 6.4 states that "*biodiversity underpins the structure and functioning of ecosystems*" and identifies that the "*planning system has a key role to play in helping to reverse the decline in biodiversity and increase the resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement*". The broad framework for implementing the Environment (Wales) Act 2016 Section 6 Duty, securing a net benefit for biodiversity and building resilience through the planning system includes addressing all of the following attributes: diversity, extent, condition, connectivity, and adaptability to change.

Green infrastructure (GI) is defined in Planning Policy for Wales (PPW) Edition 12 as "*the network of natural and semi-natural features, green spaces, rivers and lakes that intersperse and connect places*". Green infrastructure can function at a range of different scales, from entire ecosystems to

street trees and is capable of providing several functions at the same time and as a result offers multiple benefits, for social, economic and cultural as well as environmental resilience.

Development proposals should take biodiversity and green infrastructure (GI) into consideration in order to avoid negative impacts on habitats and species, and seek ways to maintain and enhance biodiversity. Impacts on habitats and species should be treated in a step-wise manner (PPW 12, paragraph 6.4.15), by seeking to:

- **Avoid** damage to biodiversity in its widest sense by maintaining the largest possible area of existing habitat supporting biodiversity and functioning ecosystems, particularly Section 7 habitats and species where present, through careful development design and consideration of long-term maintenance and management and ensuring that retained habitats continue to be well connected to adjacent habitats to provide connectivity for key species.
- **Mitigate** or **restore** by identifying measures to address the specific negative effects by repairing damaged habitats and disturbed species. The measures should seek to restore in excess of like for like, accounting for disturbance and time lags for the recovery of habitat and species, and in every case, mitigation or restoration measures should seek to build ecosystem resilience within the site and where possible the wider area.
- As a last resort off-site **compensation** for unavoidable damage must be provided. This must be of significant magnitude to fully compensate for any loss.
- All development must **deliver a net benefit** for biodiversity and ecosystem resilience from the baseline state (proportionate to the scale and nature of the development proposed).

PPW12 also sets out the national policy requirements in relation to planning permissions where protected species, trees, hedgerows and woodlands and *irreplaceable natural resources* have the potential to be impacted.

Green Infrastructure – Local Policy

Wrexham Local Development Plan (LDP) 2013 – 2028 includes a vision and a set of strategic objectives which include the following: Objective SO9: Protect, manage and enhance the natural and historic environment and landscapes. High level, strategic policies seek to deliver the LDP vision, objectives and strategy. Policy SP5: Planning Obligations confirms that ecological mitigation can be delivered through planning obligations and Policy SP12: Design Principles & Masterplanning Framework requires projects to demonstrate how they have taken account of the local characteristics of surrounding areas and how innovative design solutions will enhance the quality of the built and natural environment.

Policy SP12: Design Principles & Masterplanning Framework

All development will be required to be of a high quality, sustainable design which makes a positive contribution to the creation of locally distinctive places by complying with the masterplanning framework SPG and KSS schematics. Proposals must demonstrate how they have taken account of the local characteristics of surrounding areas and how innovative design solutions will enhance the quality of the built and natural environment.

For projects associated with Wrexham Industrial Estate (WEI), strategic Policy SP9: Wrexham Industrial Estate identifies that this site will be the primary focus of new employment development, and also identifies that within the WEI, land is protected for a strategic ecological network for a number of local, national and internationally protected species (specifically great crested newts) and habitats.

Policy SP19: Green Infrastructure required development to maintain the extent, quality and connectivity of multi-functional green infrastructure on or near a site, and, where appropriate, to enhance it by creating new interconnected areas of GI; fillings gaps in the existing network; protecting the features most valuable for nature and people; and providing mitigation and compensation for lost assets on a site-specific basis (where GI losses are unavoidable). Paragraphs 3.128 and 3.130 state that "*this policy aims to ensure that the County Borough's new green and blue infrastructure assets are strategically planned and delivered through a high quality and locally distinct infrastructure network, and that existing green infrastructure assets are protected and enhanced"* and that *"proposed development should therefore demonstrate how the services provided by green infrastructure have been considered and integrated into the proposals at the design stage".*

Policy SP19: Green Infrastructure

Wrexham's distinctive natural heritage provides a network of green and blue infrastructure. Protection, conservation and enhancement of natural heritage networks needs to be reconciled with the benefits of development.

Development will be required to maintain the extent, quality and connectivity of multi-functional green infrastructure on or near a site, and, where appropriate to enhance it by:

i. Creating new interconnected areas of green infrastructure between the proposed site and the existing network;
ii. Filling gaps in the existing network to improve connectivity;
iii. Protecting the features most valuable for both nature and people; and
iv. In instances where loss of green infrastructure is unavoidable, provide mitigation and compensation for the lost assets on a site-specific basis.

Policy NE3: Trees, Woodlands and Hedgerows details the expectations in relation to maintenance, avoidance, mitigation and compensation for significant adverse impacts on these habitats where they have significant public amenity, natural or cultural heritage values or they provide important ecosystem services. The importance of planting trees, woodlands and hedgerows as part of improving the connectivity of existing and proposed Green Infrastructure is also recognised in this policy.

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Policy NE3: Trees, Woodlands and Hedgerows

Development will only be permitted where it does not cause unacceptable harm to trees, woodlands and hedgerows of significant public amenity, natural or cultural heritage value or those that provide important ecosystem services.

Development affecting all existing and new proposed woodlands should:

i. Support proposals which assist in the respectful and appropriate use and protection of woodlands and boundary edges;

ii. Promote sustainable management to deliver multiple benefits; and

iii. Support the relevant aims and objectives of the Wrexham Tree & Woodland Strategy 2016-2026 and all subsequent amendments.

Where adverse effects cannot justifiably be avoided and sustainable integration is not possible then adequate mitigation will be required. In such cases development should include proposals for the planting of new trees, woodlands, and hedgerows within the site, ensuring connectivity between proposed and existing green infrastructure.

Wrexham Council have approved a series of local planning guidance (LPG) notes which amplify the Development Plan policy. These include the following notes which are of relevance to green infrastructure:

- LPG Note No 7 – Landscape and Development. This note provides general guidance and clarifies landscape information requirements.
- LPG Note No 17 - Trees and Development. This note provides information regarding the protection of trees and highlights the benefits of trees as an integral part of development design.
- LPG Note No 26 - Landscape and Industrial Developments. This guidance aims to help applicants have a better understanding of the landscape and environmental issues which the Council will take into account of when determining applications for industrial development.
- LPG Note No 29 – Wrexham Industrial Estate Employment Development and Nature Conservation. This note advises developers/landowners on the key ecological issues that they need to address before carrying out any development on the Wrexham Industrial Estate (whether or not it requires planning permission) and the procedures they should follow to gain planning permission and the necessary licences.
- LPG Note No 32 – Biodiversity and Development. This guidance note intends to raise the quality and profile of nature conservation, protected species and biodiversity issues when submitting and considering planning applications. The document provides an introduction to biodiversity in the County, details the requirements for site appraisals, ecological surveys and assessments, considers when an Appropriate Assessment will be required, and identifies the ecological mitigation hierarchy (avoid, mitigate, compensate, enhance). The LPG Note sets out the expectations in relation to monitoring management and compliance and provides examples of how to incorporate biodiversity into a development.

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APPENDIX B Desk Study

Desk Study Data included as separate Appendix

APPENDIX C Plant Species List

This list is not exhaustive but refers to species observed during the site visit. Mosses (except indicators of bog habitat if present), lichens, algae and other lower plants and fungi were not identified. No protected or notably rare plant species were found.

Table C.1: Plant Species List – Broadleaved Woodland

Scientific Name	English Name	DAFOR
Salix caprea	Goat Willow	A
Hedera helix sl	Common Ivy	LF
Rubus fruticosus agg	Bramble	LF
Urtica dioica	Nettle	LF
Acer pseudoplatanus	Sycamore (sapling)	O
Arrhenatherum elatius	False Oat Grass	O
Cirsium arvense	Creeping Thistle	O
Corylus avellana	Hazel (sapling)	O
Crataegus monogyna	Hawthorn	O
Dryopteris filix-mas	Male Fern	O
Fraxinus excelsior	Ash	O
Geranium robertianum	Herb Robert	O
Geum urbanum	Wood Avens	O
Heracleum sphondylium	Common Hogweed	O
Holcus lanatus	Yorkshire Fog	O
Holcus mollis	Creeping Soft-grass	O
Juncus effusus	Soft Rush	O
Prunus avium	Wild Cherry (sapling)	O
Quercus robur	Pedunculate Oak (sapling)	O
Ranunculus acris	Meadow Buttercup	O
Ranunculus repens	Creeping Buttercup	O
Rumex obtusifolius	Broad-Leaved Dock	O
Sorbus aucuparia	Rowan (sapling)	O
Stachys sylvatica	Hedge woundwort	O
Vicia sepium	Bush Vetch	O
Carex remota	Remote Sedge	R
Dactylorhiza fuchsii	Common spotted orchid	R

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Table C.2: Plant Species List - SI Neutral Grassland – Northern Section

Scientific Name	English Name	DAFOR
Anthoxanthum odoratum	Sweet Vernal Grass	F
Cynosurus cristatus	Crested Dog's-tail	F
Holcus lanatus	Yorkshire Fog	F
Ranunculus acris	Meadow Buttercup	F
Achillea millefolium	Yarrow	LF
Arrhenatherum elatius	False Oat Grass	LF
Dactylorhiza fushcii	Common spotted orchid	LF
Dactylorhiza x grandis	Common spotted/southern marsh hybrid	LF
Festuca rubra	Red Fescue	LF
Lathyrus pratensis	Meadow Vetchling	LF
Lolium perenne	Perennial Rye Grass	LF
Plantago lanceolata	Ribwort Plantain	LF
Ranunculus repens	Creeping Buttercup	LF
Trifolium pratense	Red Clover	LF
Urtica dioica	Nettle	LF
Dactylis glomerata	Cock's-foot	O
Equisetum arvense	Field Horsetail	O
Festuca ovina	Sheep's Fescue	O
Geranium dissectum	Cut Leaved Cranesbill	O
Heracleum sphondylium	Hogweed	O
Jacobaea vulgaris	Ragwort	O
Rumex obtusifolius	Broad-Leaved Dock	O
Stachys sylvatica	Hedge woundwort	O
Taraxacum officinale	Dandelion agg	O
Cirsium arvense	Creeping Thistle	R
Epilobium montanum	Broad Leaved Willowherb	R
Fraxinus excelsior	Ash	R
Quercus robur	Pedunculate Oak	R
Salix caprea	Goat Willow	R

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Table C.3: Plant Species List - SI Neutral Grassland – Southern Section

Scientific Name	English Name	DAFOR
Anthoxanthum odoratum	Sweet Vernal Grass	F
Cynosurus cristatus	Crested Dog's-tail	F
Ranunculus acris	Meadow Buttercup	F
Holcus lanatus	Yorkshire Fog	F
Dactylorhiza x grandis	Common spotted / southern marsh orchid hybrid	F/LA
Epilobium hirsutum	Great Willowherb	LA
Achillea millefolium	Yarrow	LF
Arrhenatherum elatius	False Oat Grass	LF
Festuca rubra	Red Fescue	LF
Juncus effusus	Soft Rush	LF
Lathyrus pratensis	Meadow Vetchling	LF
Plantago lanceolata	Ribwort Plantain	LF
Trifolium pratense	Red Clover	LF
Dactylis glomerata	Cock's-foot	O
Dactylorhiza fuchsii	Common spotted orchid	O
Dactylorhiza praetermissa	Southern marsh orchid	O
Epilobium montanum	Broad Leaved Willowherb	O
Equisetum arvense	Field Horsetail	O
Festuca ovina	Sheep's Fescue	O
Geranium dissectum	Cut Leaved Cranesbill	O
Heracleum sphondylium	Common Hogweed	O
Jacobaea vulgaris	Ragwort	O
Juncus inflexus	Hard Rush	O
Lolium perenne	Perennial Rye Grass	O
Rumex acetosa	Common Sorrel	O
Trifolium repens	White Clover	O
Urtica dioica	Nettle	O
Vicia sepium	Bush Vetch	O
Ranunculus repens	Creeping Buttercup	O
Rumex obtusifolius	Broad-Leaved Dock	O
Stachys sylvatica	Hedge woundwort	O
Taraxacum officinale	Dandelion agg	O
Carex hirta	Hairy Sedge	O/LF
Cirsium arvense	Creeping Thistle	R
Fraxinus excelsior	Ash	R
Quercus robur	Pedunculate Oak	R
Ophrys apifera	Bee orchid	R

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Salix caprea	Goat Willow	R

Table C.4: Plant Species List – Tall Ruderal

Scientific Name	English Name	DAFOR
Epilobium hirsutum	Great Willowherb	D
Arrhenatherum elatius	False Oat Grass	O
Cirsium arvense	Creeping Thistle	O
Dryopteris filix-mas	Male Fern	O
Heracleum sphondylium	Common Hogweed	O
Jacobaea vulgaris	Ragwort	O
Ranunculus repens	Creeping Buttercup	O
Rubus fruticosus agg	Bramble	O
Urtica dioica	Nettle	O
Sonchus oleraceus	Smooth Sowthistle	R

APPENDIX D General Biosecurity Measures

Biosecurity means taking measures to ensure that good practices are in place to minimise the risk of importing and spreading invasive non-native species (INNS), pests and infectious disease. As non-native species or diseases could be transmitted in any water or material, a good biosecurity routine is essential, even if invasive non-native species are not apparent.

General good-practice biosecurity measures include:

- A toolbox talk detailing the general risks of invasive non-native species (INNS) relevant to the site and the project should be delivered to all workers, showing the various life stages and how to recognise these plants.
- A cleaning station should be set up at the site exits including facilities to wash boots and vehicles.
- **All** footwear of staff leaving site (for **any** reason and no matter for how short a time) should be cleaned (i.e., visually free of soil and debris) before leaving site.
- Soil and vegetation should be washed off with clean water (and brushes). Water (which should not be contaminated with any disinfectant or other pollutants) should then be disposed of by pouring on site to soak away. No water should be disposed of directly into a watercourse.

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- The wheels or tracks (and any other part which has come into contact with the soil) of all vehicles which have entered the area must be thoroughly washed and be free of soil and debris before leaving the site.

- No one should remove any soil or vegetation from the working area for any reason.

It may be necessary to produce a site-specific and project-specific Biosecurity Risk Assessment to support the construction-phase of the project, once detailed design works have been completed and timings and construction methods are known. This Biosecurity Risk Assessment should identify the specific biosecurity risks associated with the works and detail operational procedures to minimise the risk of spreading invasive non-native species (INNS) and other biosecurity risks .

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