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PRELIMINARY ECOLOGICAL APPRAISAL

At

F Lloyd (Penley) Ltd – Extensions 1 and 2
Bridge Road
Wrexham Industrial Estate
Wrexham
LL13 9SQ

NGR: SJ 37614 48551

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Date:	3rd February 2023
UES reference:	UES03411/05

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EXECUTIVE SUMMARY

United Environmental Services Ltd (UES) was commissioned by FI Real Estate Management to carry out a baseline ecological survey of a parcel of land at F Lloyd (Penley) Ltd, Bridge Road, Wrexham Industrial Estate, Wrexham. A desk study and preliminary ecological appraisal (PEA) survey were undertaken on 26th May 2022, including searches using the Multi Agency Geographic Information Centre (MAGIC) and COFNOD.

The PEA provides an assessment of potential ecological impacts associated with the development of the land parcel. At the time of the survey, no detailed proposals were available, so the entirety of the site was surveyed. Since then, the proposals have been finalised such that only two areas of the site are to be impacted by the works. These two areas will henceforth be referred to as Extension 1 and Extension 2. Both areas are situated in the south-eastern corner of the site and are adjacent to one another. The proposals involve the extension of the existing industrial units and the impacts of the proposals have been considered independently although both are discussed here.

The entirety of the survey boundary has an area of approximately 13.94ha and comprises industrial units and roads with intervening areas of grassland / greenspace (of various qualities). Areas of greenspace include amenity lawns subject to intensive management and regular mowing, tall ruderal vegetation in disturbed areas, species-poor semi-improved grassland, and higher quality neutral grassland (TN6). These areas of higher quality neutral grassland are outside of the proposed development area but contain a high diversity of grasses and species which are indicative of unimproved grassland, such as grass vetchling *Lathyus nissolia*. Other habitats found on site or within the immediate surrounding area include recently deposited spoil mounds, areas of bare ground, and dense scrub at the peripheries of the site, which flank the River Clywedog that flows west to east past the southern site boundary.

The results of the survey combined with the results of the desk study have highlighted the requirement for further work in relation to the following habitats and species:

- **Amphibians and reptiles– Extension 1** - the proposals may result in the direct impact to great crested newt (GCN) *Triturus cristatus* and/or their terrestrial habitat due to the large inert spoil mound present adjacent to the area of grassland and scrub situated to the north, east and south of the development area. As such, a GCN impact assessment should be undertaken to assess all accessible offsite ponds within 250m of the proposed development site. This impact assessment can be undertaken any time of year.

  Given the historical presence of GCN within the immediate surrounding area, it is considered highly likely that further GCN presence / absence surveys and subsequent population size class assessments surveys will also need to be undertaken of the offsite ponds within 250m of the site. If GCNs are found to be present within the immediate vicinity, a European protected species (EPS) mitigation licence will need to be granted by Natural Resources Wales. As part of a licence, a suite of mitigation measures will be required, including the installation of newt fencing and a period of trapping and translocation. These mitigation measures will also serve to protect reptiles in the unlikely event that they are present on site.

  - **Extension 2** – the proposed works in relation to Extension 2 will involve the addition of an extension and canopy to the north-western aspect of the existing industrial unit. This will only impact the area of hardstanding that is presently found

in these locations and as a result, direct impacts to amphibians are considered to be extremely unlikely. As a precautionary measure, reasonable avoidance measures (RAMs) are to be implemented during the construction phase of the development, as detailed in section 4.2.1

- **Bats – Extension 1 and Extension 2 -** Any external lighting installed as part of the proposed development should be designed to avoid overspill onto any installed bat boxes or any offsite commuting / foraging habitats, particularly towards the River Clywedog. This may require the use of timers or cowling to reduce the light spill or the relocation of light sources or bat boxes.

- **Hedgehogs – Extension 1 and Extension 2 -** RAMs are to be implemented during the construction phase of the development, as detailed in section 4.2.4.

  Any perimeter fences installed on site that would block hedgehog *Erinaceus europaeus* access or newly created habitats are to be designed to allow continued hedgehog use of the site, either through choice of materials or the inclusion of hedgehog highways.

- **Invasive species – Extension 1 and Extension 2** – Japanese knotweed *Reynoutria japonica* was observed at the northern survey boundary (see Appendix 2 – Target Note 2) and Himalayan balsam *Impatiens glandulifera* was noted at the southern survey boundary (TN5). However, no invasive species were recorded on site or within the immediate vicinity of the site boundary for either Extension 1 or Extension 2. It is still recommended that Japanese knotweed and Himalayan balsam are eradicated as part of the works in order to ensure they do not spread across site or onto offsite habitats in the future.

  If the proposals change to result in a direct impact to the area containing the Japanese knotweed or Himalayan balsam, an invasive species method statement and an updated invasive species walkover survey will be required to establish the current extent of the spread of invasive species and required control and eradication methods. If present within areas to be impacted by the works, the Japanese knotweed and Himalayan balsam will need to be eradicated prior to the start of works, to ensure that it does not spread across the site or onto adjacent areas.

- **Otters and water vole – Extension 2 only -** RAMs are to be implemented during the construction phase of the development, as detailed in section 4.2.5.

- **Plant communities – Extension 1 and Extension 2** – the areas mapped as semi-improved neutral grassland include a large and diverse assemblage of grasses and other flora, including those indicative of unimproved grassland. These areas are not to be impacted under the current proposals, though if this changes then they should be retained or replaced as part of the proposed works. This may require further botanical surveys in order to determine appropriate seed mixes and management measures for any recreated areas of grassland.

- **Watercourse – Extension 2 only -** specific procedures and control measures to be implemented to ensure that there is no risk of input into the watercourse, including the retention of a buffer zone. The measures should be set out by the contractors prior to commencement and agreed with the LPA and other statutory consultees.

Mitigation measures, as detailed in section 4, should be adhered to, which may in some cases negate the need for further survey work.

The development also presents an opportunity to improve the habitats on site for wildlife, such as bats and birds. The inclusion of nest boxes and bat boxes will provide suitable nesting and roosting features in the long term.

This report should be read with appendices 1 to 7, which include results of the desk study, GIS phase 1 habitat mapping, photographs of site and relevant statutory guidance.

1 INTRODUCTION

1.1 Author, surveyors, qualifications and scope of study area

This report is written by Mark Halliwell MBiol, UES Ecologist. Mark holds a level 4 Botanical Society for Britain and Ireland (BSBI) field identification skills certificate (FISC), which certifies him as competent to undertake phase 1 habitat and national vegetation classification (NVC) surveys.

Mark is licensed by Natural England to survey all species of bats by observation using an artificial light under licence number 2020-45183-CLS-CLS (level 1). Mark is also listed as an accredited agent under the survey licence of Toby Hart BSc MCIEEM PIEMA, UES Managing Director. Toby is licensed by Natural Resources Wales to disturb, take and handle all species other than greater horseshoe *Rhinolophus ferrumequinum* or lesser horseshoe *Rhinolophus hipposideros* under licence number S086508/01. Toby has deemed Tom to be capable and experienced in undertaking bat scoping assessments, handing bats and inspecting PRFs within trees and buildings using an endoscope.

The report provides an assessment of the potential ecological impacts associated with the proposed development of two parcels of land at F Lloyd (Penley) Ltd, Bridge Road, Wrexham Industrial Estate, Wrexham. These two parcels of land are henceforth referred to as Extension 1 and Extension 2.

The zone of influence considered within the scope of the survey includes all land within the red line boundary. Where relevant, other ecological resources, receptors and important habitats which are spatially separate from the site are considered.

1.2 Survey objectives

UES was commissioned in May 2022 to conduct a PEA of the proposed development site. This was completed in order to:

- Establish baseline conditions and determine the importance of ecological features present or potentially present within the survey area
- Identify key ecological constraints to the project
- Make recommendations for design options to avoid significant effects on important ecological resources at an early stage of development planning
- Identify potential requirement for further surveys for nationally or internationally protected species which may be present on site
- Identify potential requirement for mitigation or compensation, including measures that may be required based on further surveys

1.3 Proposed development

At the time of the survey on May 2022, no development proposals were known to UES so the entirety of the site was surveyed. Since then, the proposals have been finalised such that only two areas of the site are to be impacted by the works, Extension 1 and Extension 2. Both areas are situated in the south-eastern corner of the site and are adjacent to one another. The proposals involve the extension of the existing industrial units and the impacts of the proposals have been considered independently.

1.4 Structure of the report

This report is a baseline appraisal that forms the basis for further ecological surveys and Environmental Impact Assessments (EIA) if required. In the majority of cases the preliminary ecological assessment will not provide all the ecological data required by the Local Planning Authority to determine an application, especially in the event that protected habitat or species issues are present or likely.

This report should be read with appendices 1 to 7, which include results of the desk study, GIS phase 1 habitat mapping, photographs of site and relevant statutory guidance.

2 METHODOLOGY

This PEA comprises a desk study and a field survey. The desk study is conducted in order to collate ecological information on species and / or habitats of interest that may be present. The field survey is conducted in order to assess the habitats and their importance, both on site and in the context of their wider surroundings.

2.1 Desk study

The following resources were used to inform the desk study:

- National – Using the UK government's MAGIC website, statutorily protected sites were scoped to a distance of 10km from the application site.

- Local – As part of a PEA of the surrounding site (surrounding this proposed development site), a record search of protected or otherwise notable species and designated sites was undertaken through COFNOD in June 2022.

2.2 Field survey

An ecological walkover survey was carried out on 26th May 2022 by Mark Halliwell. The purpose of the survey was to identify, record and map dominant habitat types within the development area and highlight any further species surveys that may be required based on the quality of those habitats. When conducting the surveys particular focus was concentrated on the following species and habitat features:

- Amphibians
- Reptiles
- Badger
- Bats
- Hazel dormouse
- Birds
- Trees
- Hedgerows
- Plant communities
- Invasive species
- Otter
- Water vole
- White-clawed crayfish

The habitats were assessed by using the phase 1 habitat survey technique, which is a system for environmental audit widely used within the environmental consultancy field. The survey was undertaken in accordance with the methodology in the 'Handbook for phase 1 habitat survey - A technique for environmental audit' (JNCC, 2010) as recommended by Natural England, and in the "Guidelines for Preliminary Ecological Appraisal" (CIEEM, 2017).

The survey area encompasses all of the land within the development footprint and the land to a distance of 30m outside it where accessible. In line with recognised guidelines, ponds were also scoped to a distance of 500m (250m radius from the survey area).

The phase 1 habitat survey methodology was extended to record any signs of habitats suitable to support protected / invasive species and any incidental observations of other noteworthy species.

2.3 Survey limitations

The survey was conducted in May when many plants are readily identifiable. Therefore, sufficient vegetative identification was possible, allowing a robust assessment of habitats to be undertaken. There are considered to be no limitations associated with the conclusions of this report.

3 RESULTS

3.1 Desk study

A desk study was conducted for the proposed development site and surrounding area. Statutorily protected sites were scoped to a distance of 10km. Further results of the desk study can be found at Appendix 1 – Desk study.

3.1.1 Protected sites

There are four non-statutorily protected sites within 2km of the proposed development site:

- **Wrexham Industrial Estate Wildlife Site**
  Located approximately 900m north-east of the proposed development site at its closest point, the designation covers a series of sites within Wrexham Industrial Estate, which includes unmanaged grassland at Bryn Road and on Cefn Park and ancient broadleaved woodland at Erlas Black Wood.

  Cefn Park comprises derelict land supporting a complex mosaic of scrub, grassland and tall herb. Species-rich grassland occurs where there is rabbit grazing with cowslip *Primula veris*, restharrow *Ononis repens*, yellow-wort *Blackstonia perfoliata*, common centaury *Centaurium erythraea* and common bird's-foot trefoil *Lotus corniculatus*. Other species of interest include dyer's greenweed *Genista tinctoria* in among scrub and grass vetchling *Lathyrus nissolia* in rank grassland.

  A mosaic of woodland and damp grassland occurs adjacent to the River Clywedog. The woodland is dominated by mature hawthorn *Crataegus monoygna*, with alder *Alnus glutinosa* and crack willow *Salix fragilis* along the river. The ground flora is sparse but dogs' mercury *Mercurialis perennis*, hart's-tongue fern *Asplenium scolopendrium* and common male fern *Dryopteris filix-mas* are present. Erlas Black Wood is dominated by mature oak *Quercus sp*.

  A strip of species-rich grassland beside a ditch on Bryn Road has similar grassland species including the uncommon grass vetchling.

- **Cefn Park Wildlife Site**
  Located approximately 1.1km north-west of the proposed development site, the designation supports a series of broadleaved woodlands within Cefn Park Estate. Big Wood is the largest (8.9ha) and is dominated by ash *Fraxinus excelsior* with oak, sycamore *Acer pseudoplatanus* and occasional mature wych elm *Ulmus glabara*. The understorey is continuous with frequent holly *Ilex aquifolium*, young sycamore and wych elm. The woodland has a rich ground flora including dogs mercury, English bluebell *Hyacinthoides non-scripta*, wood anemone *Anemone nemorosa* and ramsons *Allium ursinum*. Rhododendron Spinney is also dominated by ash but with beech *Fagus sylvatica* and sweet chestnut *Castanea sativa* and a locally dense understorey of rhododendron *Rhododendron ponticum*. Alder, crack willow and goat willow *Salix caprea* dominate the poorly drained eastern side where great horsetail *Equisetum telmateia* and greater pond sedge *Carex riparia* occur as well as a fen dominated by common reed *Phragmites australis*.

- **Peter's Dingle Wildlife Site**
  Located approximately 1.1km east of the proposed development site, the designation supports ash / pedunculate oak woodland along a brook. The understorey is of wych elm, elder *Sambucus nigra*, hawthorn, wild privet *Ligustrum vulgare* and hazel *Corylus avellana*, the latter becoming abundant in areas where it has been coppiced. The field layer is often dominated by ivy *Hedera helix*, bramble *Rubus fruticosus agg.,* and stinging nettle *Urtica dioica*, however dogs mercury, yellow archangel *Lamium galeobdolon*, giant fescue *Festuca gigantea*, black bryony *Dioscorea communis* and harts'-tongue fern are also present.

- **Marchwiel Marsh Wildlife Site**
  Located approximately 1.2km south-west of the proposed development site, the designation includes a marshy field between a school and a disused railway line. Past improvements has led to it being dominated by rushes; hard rush *Juncus inflexus*, soft rush *Juncus effusus* and jointed rush *Juncus articulatus* are all abundant. Grasses are also prevalent with timothy *Phleum pratense* and Yorkshire fog *Holcus lanatus* the most common. Herbs are mostly represented by creeping buttercup *Ranunculus repens* and great willowherb *Epilobium hirsutum*, but other species present include common knapweed *Centaurea nigra*, bog stitchwort *Stellaria uliginosa* and meadowsweet *Filipendula ulmaria*.

There are no statutorily protected sites within 2km of the proposed development site.

There are twenty-two statutorily protected sites within 2 – 10km of the proposed development site:

- Afon Dyfrdwy (River Dee) SSSI[1]
- Berwyn a Mynyddoedd De Clwyd / Berwyn and South Clwyd Mountains SAC[2]
- Chwarel Singret SSSI
- Cloy Brook Pastures SSSI
- Coedwig Ffosil Brymbo Fossi Forest SSSI
- Dee Cliffs Farndon SSSI
- Gatewen Marsh SSSI
- Johnstown Newt Sites SAC
- Llay Bog SSSI
- Marford Quarry SSSI
- Midlands Meres & Mosses Phase 2 Ramsar
- Midlands Meres & Mosses Phase 2 (Wales) Ramsar
- Nant-y-Belan and Prynela Woods SSSI
- River Dee (England) SSSI
- River Dee and Bala Lake SAC
- River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC
- Ruabon / Llantysilio Mountains and Minera SAC
- Shell Brook Pastures SSSI
- Sontley Marsh SSSI
- Stryt Las a'r Hafod SSSI
- Vicarage Moss SSSI
- Well Rough and Long Plantation SSSI

The proposed development site lies within a SSSI Impact Risk Zone (IRZ) within which Natural England only request that they are consulted on industrial / agricultural developments that could cause air pollution (including: industrial processes, livestock & poultry units with floorspace > 500m2, slurry lagoons & digestate stores > 750m2 and manure stores > 3500t) and general combustion processes >50mw energy input (including: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works and other incineration/combustion).

[1] SSSI – Site of Special Scientific Interest
[2] SAC – Special Area of Conservation

3.1.2 Protected species

The following records of protected or otherwise notable species were highlighted by the environmental records search:

- Amphibians: numerous records of GCNs were returned from within 2km of the proposed development site. The closest records are returned from ponds within 60m of Extension 1 within the area of grassland and scrub to the north, east and south of the development boundary. These records are from GCN surveys undertaken between 2005 and 2019 suggesting a continued presence of GCN in the nearby surrounding area. Numerous records of GCNs were also returned from other ponds within this area of scrub, but are located further north-east from the site boundary. Records of common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Lissotriton vulgaris*, palmate newt *Lissotriton helveticus* and unidentified *Lissotriton sp.* newts were also returned. No amphibian records were returned from the proposed development site itself.

- Badgers:

- Bats: records of brown long-eared bat *Plecotus auritus*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula*, lesser horseshoe *Rhinolophus hipposideros*, whiskered *Myotis mystacinus*, Brandt's *Myotis brandti*, Daubenton's *Myotis daubentonii* and unidentified *Pipistrellus sp.* and *Myotis sp.* bats were returned. The closest record to the proposed development site details a whiskered bat that was trapped in a residential dwelling located approximately 65m west, dating from 2004.

- Birds: various species, including species of principal importance and Wildlife and Countryside Act (1981) Schedule 1 species. No record of bird were returned from the site itself. Bird species records returned from within 500m of the site include whitethroat *Sylvia communis*, kestrel *Falco tinnunculus*, barn owl, blackcap *Sylvia atricapilla*, buzzard *Buteo buteo*, chiffchaff *Phylloscopus collybita*, dunnock *Prunella modularis*, goldfinch *Carduelis carduelis*, greater spotted woodpecker *Dendrocopos major*, grey wagtail *Motacilla cinerea*, house martin *Delichon urbicum*, lapwing *Vanellus vanellus*, raven *Corvus corax*, skylark *Alauda arvensis*, song thrush *Turdus philomelos*, sparrowhawk *Accipiter nisus*, stock dove *Columba oenas*, swallow *Hirundo rustica*, swift *Apus apus*, woodpigeon *Columba palumbus* and wren *Troglodytes troglodytes*.

- Hazel dormouse: no records of hazel dormouse *Muscardinus avellanarius* were returned from within 2km of the proposed development site.

- Hedgehog: numerous records of hedgehog *Erinaceus europaeus* were returned from within 2km of the proposed development site. The closest record is from approximately 200m north and dates from 2012.

- Otter: nine records of otter *Lutra lutra* were returned from within 2km of the proposed development site, located along the River Clywedog and its tributaries, including Redwither Brook. The closest record to the proposed development site lies approximately 160m south and details an otter spraint or scat observed under a bridge in 2014.

- Reptiles: Records of common lizard *Zootoca vivipara*, slow worm *Anguis fragilis*, adder *Vipera berus* and grass snake *Natrix natrix* were returned, most of which are located within the Wrexham Industrial Estate, between 0.7-1.3km north of the proposed development site. The only record not from the industrial estate is a grass snake record from 2018, located approximately 1.2km south of the proposed development site. The common lizard and other grass snake records date from 2020 and 2018 respectively, however the slow worm and adder records date from 'before 2009' and 'before 1999' respectively.

- Water vole: two records of water vole *Arvicola amphibius* were returned from within 2km of the proposed development site. Both records date from 2000 and are from a tributary of the River Clywedog, located approximately 1.7km and 1.9km south of the proposed development site.

- White clawed-crayfish: no records of white-clawed crayfish *Austropotamobius pallipes* were returned from within 2km of the proposed development site.

3.2 Baseline conditions – Habitats

The results of the PEA are also shown on the accompanying map at Appendix 2 – Phase 1 habitat plan. Habitats are colour-coded in accordance with the phase 1 standard. A full botanical species list for each habitat is provided at Appendix 5.

The local area predominantly consists of developed areas within the Wrexham Industrial Estate and agricultural fields. The following principle habitat types were characterised on site or immediately adjacent to the survey boundary:

- A2.1 Dense scrub
- B2.2 Semi-improved neutral grassland
- B6 Species-poor, semi-improved grassland
- C3.1 Tall ruderal
- G2 Running water
- I2.2 Spoil
- J1.2 Amenity grassland
- J3.6 Buildings
- J4 Bare ground
- J5 Hardstanding

3.2.1 A2.1 Dense scrub

Dense scrub is found adjacent south-eastern, southern and western site boundary of Extension 2 where it flanks the River Clywedog. A detailed botanical assessment was not conducted as this is outside of the ownership and site boundary, although species present include crack willow, grey willow *Salix cinerea*, ash, sycamore, alder, stinging nettles, great willowherb, ground elder *Aegopodium podagraria*, and fool's watercress *Apium nodiflorum* amongst several other species.

Himalayan balsam is also noted within the ownership boundary of the site and extending from the dense scrub (see Appendix 2, Target Note 5).

3.2.2 B2.2 Semi-improved neutral grassland

Distinct from the amenity grassland that is intensely managed and generally has a very short sward with reduced species diversity, there are areas of grassland that have been allowed to grow longer with a higher diversity spread throughout the site. Two of these areas of grassland are noted as having an even higher diversity of grasses and other flowering plants (Target Note 6). These two areas flank a steeply descending road and as such are located on a southwest-facing bank. More than ten grasses, and species indicative of unimproved conditions were found here including: red clover *Trifolium pratense*, yarrow *Achillea millefolium*, common knapweed *Centaurea nigra*, grass vetchling *Lathyrus nissolia*, and yellow-wort *Blackstonia perfoliata*. There has been a recent deposition of spoil nearby one of these grassland areas, and it is not clear to what extent this disturbance has resulted in the germination of seeds within the soil.

This area of grassland is not included within the development boundary of either Extension 1 or 2.

3.2.3 B6 Species-poor semi-improved grassland

Areas of species-poor semi-improved grassland are also found flanking the roads within the ownership boundary, though these areas all have a lower species diversity than those noted at Target Note 6. One such area is found within the site boundary of Extension 2 at its northern and north-eastern boundary. Again, a large amount of inert spoil has been deposited here such that this may have been layered on top of the remaining area of grassland, although the bottom fringe is still visible. Large amounts of ox-eye daisy *Leucanthemum vulgare* are found in this location, in addition to other species such as common mouse ear *Cerastium fontanum*, chickweed *Stellaria media* creeping buttercup and broad-leaved dock *Rumex obtusifolius*.

3.2.4 C3.1 Tall ruderal

A small area of tall ruderal vegetation is present near the north-western survey boundary, but not within either site boundary of Extension 1 or 2. Here, the grassland has transitioned to ruderal vegetation as it is dominated by stinging nettles, with occasional broad-leaved dock, ox-eye daisy, cow parsley *Anthriscus sylvestris*, and common comfrey *Symphytum officinale* interspersed throughout.

3.2.5 G2 Running water

The river Clywedog is situated to the south of the site and flows west to east. The river is outside of the site boundary, although it flows within close proximity of Extension 2. The river was not subject to a detailed survey, although the dense scrub which transitions into woodland is described in section 3.2.1.

3.2.6 I2.2 Spoil

There are a total of three spoil piles noted throughout the survey boundary, one of which falls outside of the extension areas. The spoil appears to comprise entirely inert clayey soil, with

small amounts of rubble, hardcore and vegetative material present. The soil appears to have been deposited fairly recently based on the low amount of encroaching vegetation and a review of historical satellite data. The spoil features relatively large fissures and cracks where it has baked solid. Ephemeral vegetation is beginning to encroach with thale cress *Arabidopsis thaliana*, creeping cinquefoil *Potentilla reptans*, dandelion *Taraxacum officinale* agg., common poppy *Papaver rhoeas* and other similar species present.

Within the site boundary of Extension 2, the spoil is situated right on its periphery and will not be impacted based on the proposals available at the time of writing. However, the spoil mound in the site boundary of Extension 1 will be entirely removed or flattened based on the extension plan provided to UES. This spoil mound is situated within 60m of the offsite GCN records and therefore may act as suitable terrestrial habitat, despite only recently being deposited.

3.2.7 J1.2 Amenity grassland

The site contains numerous amenity grassland lawns, which are intensively managed through regular mowing and have very short swards. These lawns comprise a mix of grass and forb species including perennial rye grass *Lolium perenne*, red fescue *Festuca rubra*, Yorkshire fog *Holcus lanatus*, dandelion, yarrow *Achillea millefolium*, common mouse-ear, self-heal *Prunella vulgaris* and ribwort plantain *Plantago lanceolata*.

Although having a low species diversity, notable specimens such as bee orchid *Ophrys apifera* are occasionally found through the sward (TN3). Furthermore, hedgehog droppings have also been located in the wider site within amenity grassland (TN1).

3.2.8 J3.6 Buildings

The wider site contains numerous buildings related to the industrial activities on site, although there is just one building in each of the site boundary of both Extension 1 and Extension 2, both of which are the focus of the proposals and will be extended / modified.

3.2.9 J4 Bare ground

An area of bare ground was identified outside of the site boundary of Extension 1 or 2. This comprises an inert substrate which has been tracked over to flatten it.

3.2.10 J5 Hardstanding

Much of the site comprises hardstanding roads, pavements, turning circles etc. Areas of gravel are also mapped as hardstanding, as these act as pathways surrounding the industrial buildings on site.

3.3 Baseline conditions – Protected species or resources

As part of the PEA, specific observations of wildlife were also recorded. Wildlife observations focused on protected species, invasive species or species of conservation concern. Habitats with potential to support protected species were noted with a view to follow up surveys if required.

3.3.1 Amphibians

Numerous records of GCNs were returned from the local area, the closest of which are of low numbers of individuals from within offsite ponds located as close as 60m from the site boundary of Extension 1. These appear to comprise GCN presence / absence or population size class assessments undertaken between 2005 – 2019.

There are no ponds or aquatic features on site. No mapped ponds are present within 250m of the proposed development site of Extension 1 or 2, however records of GCN are contained within the area of grassland and scrub immediately adjacent to the eastern and southern site boundary of Extension 1 and Extension 2.

Regarding Extension 1, with the exception of the spoil mound, the terrestrial habitats are broadly unsuitable to support GCN. The amenity grassland will provide some, albeit very limited foraging and commuting opportunities, although the remainder of the site comprises hardstanding and buildings which offer no suitable habitat for GCN. However, the spoil mound itself provides a raised partially vegetated structure with fissures and cracks that may offer suitable sheltering opportunities for GCN and other amphibians. Although the spoil mound appears to have been deposited fairly recently, it is within close proximity of the confirmed GCN records with no barriers to movement.

Regarding Extension 2, the spoil mound that overlaps with the site boundary offers similar sheltering opportunities for GCN. However, the development activity in this site is entirely restricted to the area of existing hardstanding and building on site. These habitats offer no suitable habitat for GCN or other amphibians.

3.3.2 Reptiles

There are a low number of records of common reptile species in the local area, though all are located at least 700m from site and the majority are historical and isolated from the site.

The habitats on site are broadly unsuitable for use by reptiles, although as with amphibians described above, the spoil mounds do provide partially vegetated areas on which reptiles might bask, however it is considered to provide poor quality foraging habitat given that it has only recently been deposited and far superior habitats are found within the nearby area off site. The remaining hardstanding and built areas that comprises the majority of the sites provide no opportunities for reptiles.

Given the poor quality and small size of the suitable habitats present on site, combined with the lack of nearby records, it is considered unlikely that reptiles are present on site.

3.3.3 Badger

No evidence of badger activity was observed on site and the habitats on site are limited in size, highly disturbed and isolated from the wider area to badgers.

Badgers are not considered to be present on site or within the immediate vicinity of the site.

3.3.4 Bats

There are two buildings, one in each site boundary of Extension 1 and 2. These buildings are very similar in design and offer negligible suitability for roosting bats; they are steel-framed structures with single skin metal cladding. The roofs feature regular translucent panels that allow some natural light into the interior. The buildings have metal eaves which fold to fit tightly to the corrugated metal roofs above and the metal skin cladding the building. No external access points were noted, as the large open doorways are closed overnight, and the eaves of the building are all tightly sealed. Internally, PRFs are limited to the junctions of the steel structure, though these are considered to be unsuitable for bats due to their relatively smooth surface, combined with the fact that the buildings are entirely uninsulated and will heat up and lose heat rapidly. The buildings are also artificially lit during the day. No evidence of roosting activity was found during the building inspections.

The habitats on site provide low quality foraging and commuting opportunities for bats, with the areas of grassland providing some foraging opportunities, although these are divided by hardstanding and artificially lit buildings.

3.3.5 Hazel dormouse

No records of hazel dormice were returned from within 2km of the proposed development site.

The habitats on site are unsuitable for hazel dormice *Muscardinus avellanarius* due to a lack of woodland and hedgerow habitats.

Hazel dormice are not considered to be present on site or within the immediate vicinity of the site.

3.3.6 Birds

Although a targeted bird survey was not conducted during the site visit, the following bird species were recorded whilst on site: woodpigeon *Columba palumbus*, magpie *Pica pica,* house sparrow *Passer domesticus*, blackbird *Turdus merula*, blackcap *Sylvia atricapilla*, carrion crow *Corvus corone*, chiffchaff *Phylloscopus collybita*, dunnock *Prunella modularis*, goldfinch *Carduelis carduelis*, great tit *Parus major*, greenfinch *Chloris chloris*, grey wagtail *Motacilla cinerea*, robin *Erithacus rubecula*, skylark *Alauda arvensis*, starling *Sturnus vulgaris*, whitethroat *Sylvia communis*, and wren *Troglodytes troglodytes*.

All of the above birds were recorded offsite or within areas of the site not to be impacted under the current proposals. The skylark was observed singing in flight approximately 150m north of the development boundary, and the remaining activity was largely restricted to the scrub flanking the river Clywedog, or the grassland and scrub to the east and south of Extension 1

and 2. The site boundaries of Extension 1 and 2 offer very poor quality nesting opportunities for birds. Although it is plausible that birds may nest within the buildings to be impacted by the proposals, this is considered extremely unlikely given the absence of historical evidence of nesting activity, combined with the high level of disturbance that occurs daily on site.

3.3.7 Trees

There are no mature trees within the site boundary of Extension 1 or 2.

3.3.8 Hedgerows

There are no hedgerows within the site boundary of Extension 1 or 2.

3.3.9 Plant communities

No plant communities or individual species were recorded within the site boundary of Extension 1 or 2 which are afforded statutory protection in their own right. However, if the proposals change to result in a direct impact to the grassland at TN6, then further botanical surveys may be required as these areas may qualify as habitats of principal importance. Habitats of principal importance are material planning considerations and are afforded protection under the Environment (Wales) Act 2016.

3.3.10 Invasive species

No invasive species were recorded within the site boundary of Extension 1 or 2. However, Japanese knotweed and Himalayan balsam is present within the wider site (TN2 and TN5 respectively).

3.3.11 Otter, water vole and white-clawed crayfish

Records of water vole and otter were returned from the River Clywedog and its tributaries. The River Clywedog flows past the southern and western site boundary of Extension 2 only. The proposals will not result in an impact to the river, although these species may be present within the vicinity of Extension 2's site boundary.

There are no records of white-clawed crayfish within 2km of the site boundary, therefore this species is not considered to be present within the immediate vicinity of the site.

3.3.12 Hedgehog

Numerous records of hedgehog were returned from within 2km of the proposed development site and hedgehog droppings were observed on the amenity grassland within the northern section of the site (TN1).

The majority of the site is broadly unsuitable for use by hedgehogs, however the areas of amenity grassland and species-poor semi-improved grassland will provide some foraging and commuting opportunities.

4 EVALUATION AND RECOMMENDATIONS

This section provides a brief assessment of the likely impacts associated with the proposed development on the receptors identified during the walkover survey and desk study. It also includes any mitigation and compensation measures which may be required for the proposed development to proceed.

4.1 Habitats

4.1.1 Designated sites

The designated sites identified during the desk study were cross-referenced with the survey area relevant to this report. There are no statutorily protected sites within 2km, and the closest non-statutorily protected site is the Wrexham Industrial Estate Wildlife Site, located approximately 900m from the proposed development site.

Given the distances from site and the scale and type of development, it is considered unlikely that the proposed development will have any direct or indirect impact on this or any other local designated sites.

4.1.2 Species-rich grassland

The areas of species-rich grassland (TN6) are situated outside of the development boundary and are not due to be directly impacted by the works. However, they may potentially qualify as unimproved grassland and may meet the criteria to qualify as the lowland meadow habitat of principal importance.

Construction impacts

No impacts are currently predicted, although future proposals or inappropriate management may negatively affect these areas/

Mitigation and compensation

No mitigation or compensation is recommended at present, although the areas of inert spoil could be brought into favourable condition in line with these species-rich grasslands.

If the proposals change, to determine the ecological value of the grassland habitats on site and to determine whether any protected or notable plant species or communities are present, a further NVC botanical survey should be undertaken. This survey should be undertaken during the peak flowering season and should be conducted in June or July by a suitability qualified botanist. The result of the further survey will determine the compensation and mitigation requirements.

Operational impacts

No operational impacts are envisaged, provided the current management regime is sustained.

4.1.3 Watercourse

The river Clywedog flows past the western and southern site boundary of Extension 2. It is located approximately 10m from the site boundary at its closest point. The river does not flow within close proximity of Extension 1.

Construction impacts

No direct impacts on the river are proposed, although construction activities too close to the river may cause the deposition of materials if no mitigation measures are enforced.

Mitigation

Specific procedures and control measures will need to be implemented to ensure that there is no risk of input into the watercourse. These measures should be set out by the contractors prior to the commencement of works and will need to be agreed with the Local Planning Authority (LPA) and other statutory consultees. These measures should conform to best practice guidance and include the cleaning of all machinery and equipment before use on site to prevent contamination of the watercourse with foreign abiotic and biotic materials.

A buffer zone should also be retained along the length of the watercourse to protect it from disturbance. The buffer zone should be adequately fenced off and no vegetation clearance or other construction activities should take place within it.

Operational impacts

No operational impacts are envisaged.

4.2 Species

4.2.1 Amphibians and reptiles

Although the habitats within Extension 1 and 2 are broadly unsuitable to support GCN, the spoil mounds provides suitable terrestrial habitat due to the fissures and cracks that have formed in its structure.

Records of GCN were returned from within the area of grassland and scrub immediately adjacent to the eastern and southern site boundary of Extension 1 and 2, with the closest record located approximately 60m from Extension 1's site boundary.

Construction impacts

Potential impacts include direct harm, injury and / or death to individuals.

Mitigation

Extension 1:

Given that the proposals will result in the removal of the spoil mound within the site boundary of Extension 1, GCN may be directly impacted by the proposals. A GCN impact assessment is required to further assess the suitability of ponds within 250m of the site boundary. Following the impact assessment, further GCN presence / absence or eDNA surveys may be required to determine the presence or absence of GCNs within these ponds. GCN presence / absence

surveys require 4 survey visits and can be undertaken between 15th March to 15th June, with at least half of the visits undertaken during the peak survey period of 15th April to 15th May. If GCNs are found to be present within the pond, the survey should be extended to include a population size class assessment (6 survey visits). The surveys should be undertaken by a suitably qualified and licensed ecologist.

Subsequent mitigation measures, which will also serve to protect reptiles, should be determined following the above surveys.

Extension 2:

As the proposals are restricted to areas of hardstanding and the existing building, indirect or direct impacts to amphibians is considered extremely unlikely. As a precautionary measure, the following RAMs should be implemented on site during the construction phase of the development:

- Any potential refugia that is created on site as part of the works will be removed from the working area by hand or will be checked for sheltering amphibians before being moved mechanically. Any potential refugia that cannot be removed by hand e.g. due to its weight, will be lifted horizontally opposed to be dragged vertically, to avoid injury to any amphibians sheltering beneath. Refugia could include piles of rubble, bricks, debris, brash and log piles etc.

- No excavations are to be left open overnight. If this is not feasible, a plank should be left within the excavation at a 45-degree angle to allow amphibians and reptiles to escape. Any open excavations should be checked for amphibians in the morning prior to start of works on site.

- Where possible, materials will be stored on pallets off the ground in order to reduce the risk of amphibians and reptiles sheltering underneath them.

- Any amphibians observed on site, with the exception of GCNs will be captured and immediately released within an area of suitable habitat outside of the working area. Suitable habitat for release can include long grassland, tall ruderal vegetation, the base of hedgerows or areas of dense scrub.

- UES will remain on-call throughout the development and if any suspected reptiles or GCNs are encountered, work on site is to stop immediately and ecological advice is to be sought. UES can be contacted directly on **01565 757788**.

Operational impacts

Extension 1: To be assessed following the further surveys.

Extension 2: No operational impacts are envisaged.

4.2.2 Bats

The buildings on site are considered to provide negligible suitability to support roosting bats. The habitats on site provide very low-quality foraging and commuting opportunities for bats, although superior habitats are present immediately adjacent to the site boundaries. There are considered to be no risk of direct impacts to roosting bats.

Construction impacts

Inappropriate lighting could result in the severing of commuting corridors used by bats.

Mitigation and compensation

No detailed landscaping proposals are available to UES, however care must be taken when installing any new lighting to ensure that light spillage onto the offsite habitats is minimised, particularly those associated with the River Clywedog. This may require the use of cowling or relocation of the bat box or lighting (see Appendix 6 – External lighting guidance).

The development affords the opportunity to enhance the spoil mounds to create wildflower grassland similar to those in the wider ownership boundary. This should be provided as part of the landscaping proposals.

Enhancements

The provision of bat boxes as part of the development proposals would increase the roosting opportunities for bats on site but would also increase the ecological value of the site. Bat boxes that could be affixed to retained trees on site include:

- Schwegler 1FF box
- Schwegler 2F box
- Schwegler 1FW hibernation box (affixed to trees)

Bat boxes affixed to trees should be fitted at a height of between 5 and 6m metres on a southerly aspect.

It should be noted that once bat inhabits a bat box, they may only be disturbed by a licensed bat worker.

Operational impacts

No operational impacts are envisaged, provided that a wildlife-sensitive lighting scheme is adopted.

4.2.3 Invasive species

No invasive species were observed within the application boundaries although Japanese knotweed and Himalyan balsam are present in the wider site. Japanese knotweed is listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and Himalayan balsam is listed under Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order 2019. As such, it is an offence to plant or otherwise cause these species to grow in the wild, including as a result of development works.

Construction impacts

No direct impacts are envisaged, although future proposals or ongoing management of the site may result in the disturbance and dispersal of Schedule 9 and Schedule 2 invasive species on and off site, depending on the proximity of the works to the identified invasive species.

Mitigation

If the proposals change to result in the areas containing the Japanese knotweed and Himalayan balsam being impacted by the proposed development, a pre-commencement check will need to be undertaken by a suitably qualified ecologist or invasive species contractor to determine the extent of these species. The Japanese knotweed and Himalayan balsam will need to be eradicated prior to the start of works in this area, to ensure that they do not spread across the site or onto adjacent areas.

An invasive species method statement will need to be prepared to outline how the spread of these species will be prohibited. It is essential that a competent and qualified person carries out any herbicide treatment.

Operational impacts

If these invasive species are not impacted by the works, then no further operational impacts are envisaged. However, the problem may become more acute over time with increased activity on site.

4.2.4 Hedgehogs

Numerous records of hedgehog were returned from the local area and hedgehog droppings were observed on site (see Appendix 2 – Target Note 5), indicating that they use the amenity grassland areas for foraging or commuting.

Construction impacts

Construction activities without mitigation could result in direct harm, injury and / or death to individuals.

Mitigation

The following RAMs should be implemented on site during the construction phase of the development:

- No trenches or excavations will be left open overnight. They will be backfilled or covered with board, or alternatively fitted with a means of escape for any hedgehogs (or other animal) which may become trapped within, such as a plank or slope leading out of the bottom of the excavation at an angle of 45°. All excavations left open overnight will be checked for trapped wildlife in the morning.

- Any pipes will be stored with caps on to prevent entry by hedgehogs and other animals, and materials such as barbed wire will be stored so that animals cannot become entangled in them.

- Any chemicals or harmful materials will be stored so that they cannot be accessed by hedgehogs or other animals.

- Excavations will be checked immediately before they are backfilled to ensure that no animals have become trapped.

Operational impacts

To allow continued use of the site by hedgehog and to ensure commuting routes aren't blocked, if any perimeter fences installed on site would block hedgehogs from accessing retained or newly created grassland or other habitats on site, they should be designed to allow passage of hedgehogs. This can either be through the choice of material e.g. choosing a fence style that naturally contains holes at the base or through the inclusion of hedgehog highways. Hedgehog highways are small 13cm x 13cm holes at the base of fences.

4.2.5 Otter and water vole

Records of water vole and otter were returned from the River Clywedog and its tributaries. There are no aquatic habitats on site, although the River Clywedog flows within close proximity of Extension 2.

Construction impacts

Extension 2: In an unmitigated scenario, otters and water vole that are foraging and commuting along the river and connected habitats may become trapped by any excavations that are left open overnight. The development proposals could also cause indirect habitat degradation through pollution.

Extension 1: There are considered to be no likely direct or indirect impacts to otter and water vole due to the works proposed as part of Extension 1.

Mitigation

The following reasonable avoidance measures should be implemented to ensure minimal impact upon otter and water vole that may be present within the immediate area surrounding Extension 2:

- No night working or installation of external lighting along the length of the river bank;
- The safe storage of any chemical or hazardous material (barbed wire etc.);
- Infilling any trenches or providing a means of escape for any animal that may become trapped.

Operational impacts

No operational impacts are envisaged.

5 CONCLUSION

Extension 1 has an area of approximately 1.70ha whilst Extension 2 has an area of approximately 1.47ha. The habitats on both sites are similar, with hardstanding, a building and amenity grassland dominating the majority of both sites. However, areas of inert spoil and species-poor semi-improved grassland are also present within the application boundaries.

The impacts of both applications are considered and discussed in section 4, and the following ecological receptors have been identified on or adjacent to site: amphibians and reptiles, bats, species-rich grassland, invasive species, watercourse, hedgehogs, and water vole and otter. Provided these issues are addressed in accordance with the recommendations detailed in this report, the development may proceed without adversely impacting the aforementioned ecological receptors.

The development also presents an opportunity to enhance the habitats available to wildlife on site. The provisioning of bat and bird nest boxes on site will provide improved roosting and nesting opportunities into the long-term future of the site.

6 REFERENCES

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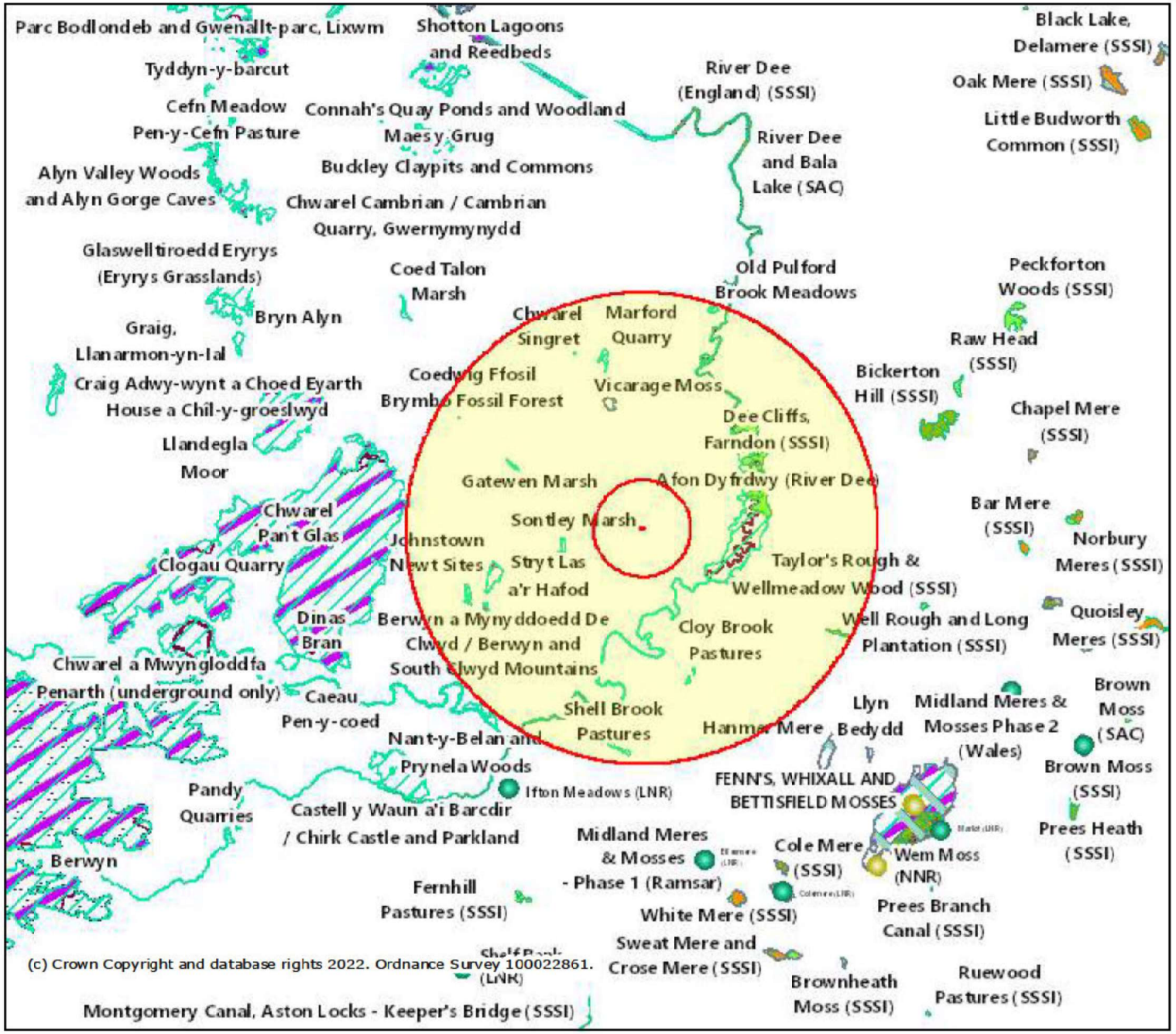
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APPENDICES

Appendix 1 – Desk study

MAGiC Statutorily protected sites - 2 & 10km buffers



Legend

- Local Nature Reserves (England) - points
- National Nature Reserves (England) - points
- National Nature Reserves (Wales) - points
- Ramsar Sites (England)
- Proposed Ramsar Sites (England)
- Ramsar Sites (Wales)

Sites of Special Scientific Interest Units (England)

- Favourable Condition
- Unfavourable Recovering
- Unfavourable no change
- Unfavourable Declining
- Part Destroyed
- Destroyed
- Not Assessed
- Sites of Special Scientific Interest (England)
- Sites of Special Scientific Interest (Wales)
- Special Areas of Conservation (England)
- Possible Special Areas of Conservation (England)
- Special Areas of Conservation (Wales)
- Special Protection Areas (England)
- Potential Special Protection Areas (England)
- Special Protection Areas (Wales)

Projection = OSGB36
xmin = 294800
ymin = 329100
xmax = 375300
ymax = 369300

0 5 10
km

Map produced by MAGIC on 8 November, 2022.

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Appendix 2 – Phase 1 habitat plan

Target Note 1 - Hedgehog droppings

Target Note 2 - Japanese knotweed

Target Note 3 - Bee orchid

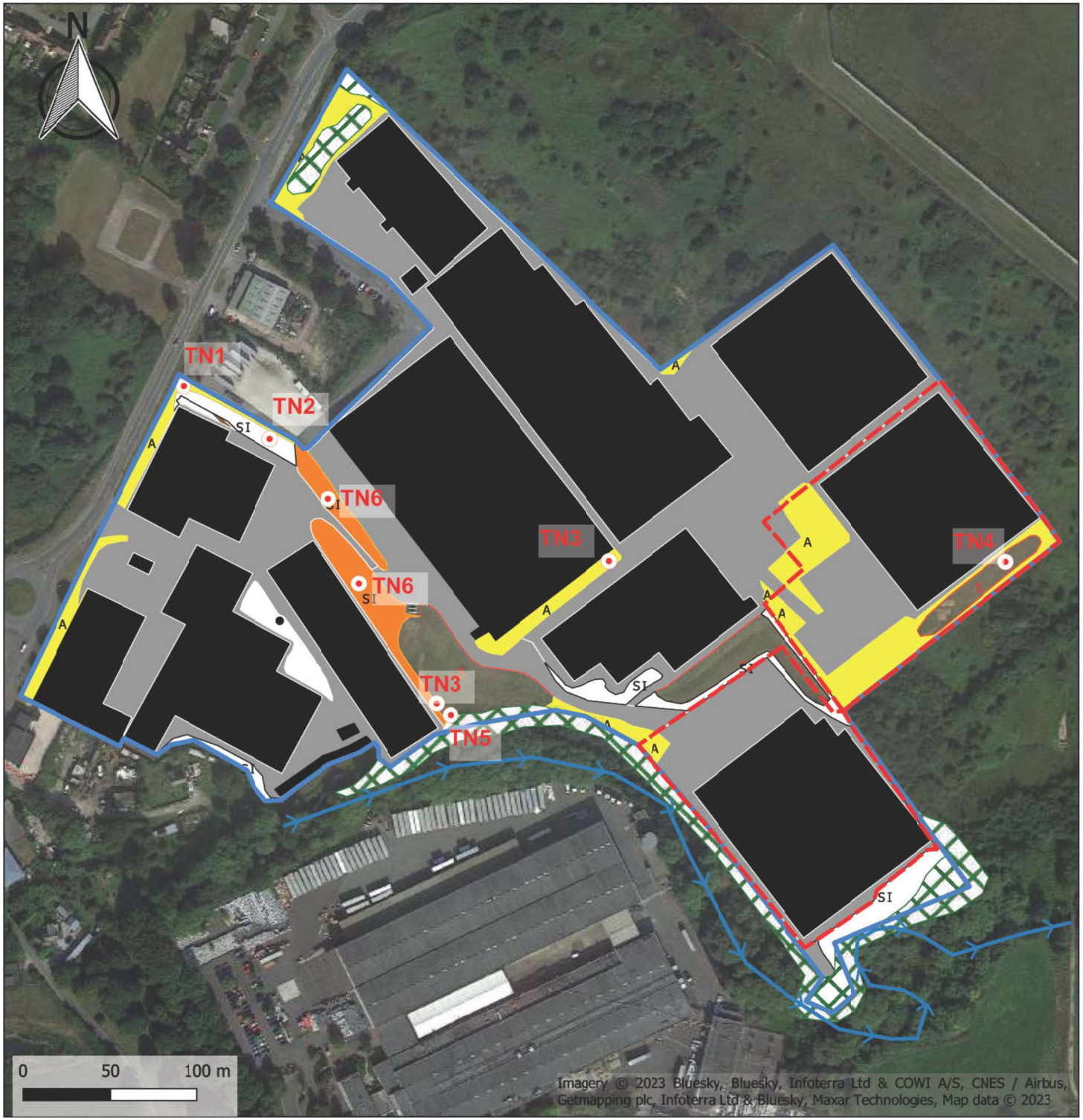
Target Note 4 - Spoil mound with suitable sheltering habitat for amphibians

Target Note 5 - Himalayan balsam

Target Note 6 - Species-rich grassland

Preliminary Ecological Appraisal - Survey Boundary

Site: Land at: F Lloyd (Penley) Ltd, Wrexham
NGR: SJ 37309 48740
Author: Mark Halliwell
Date: 02/02/2023





KEY:

- A J1.2 - Amenity grassland
- J3.6 - Buildings
- J4 - Bare ground
- J5 - Hardstanding
- Target Notes
- Development boundary
- Survey boundary
- A2.1 - Dense scrub
- SI B2.2 - Semi-improved neutral grassland
- SI B6 - Poor semi-improved grassland
- C3.1 - Tall ruderal
- G2 - Running water
- S I2.2 - Spoil

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Preliminary Ecological Appraisal - Development Boundary - Extension 1

Site: Land at: F Lloyd (Penley) Ltd, Wrexham
NGR: SJ 37309 48740
Author: Mark Halliwell
Date: 02/02/2023





KEY:

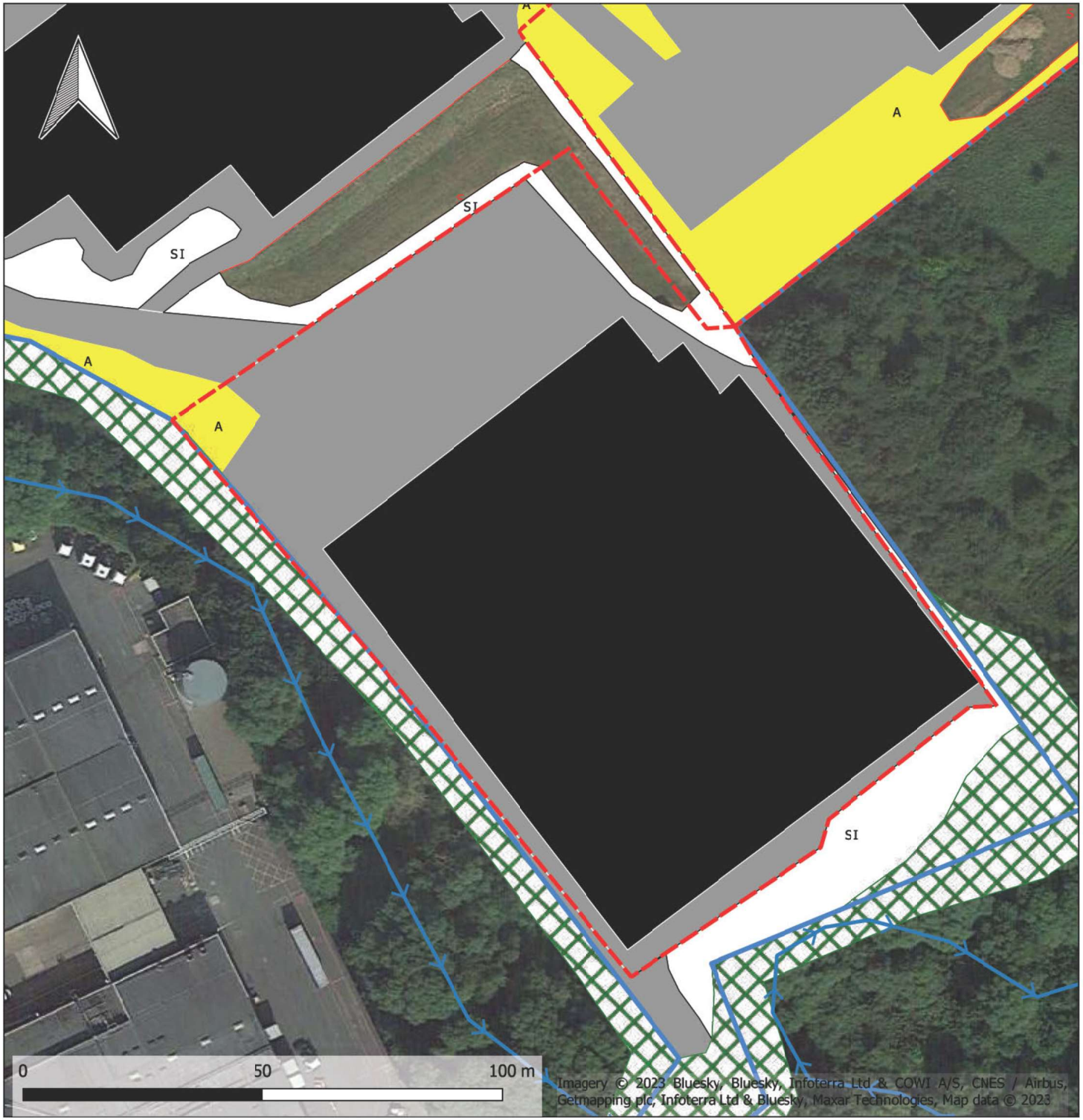
- A2.1 - Dense scrub
- SI B2.2 - Semi-improved neutral grassland
- SI B6 - Poor semi-improved grassland
- C3.1 - Tall ruderal
- G2 - Running water
- S I2.2 - Spoil
- A J1.2 - Amenity grassland
- J3.6 - Buildings
- J4 - Bare ground
- J5 - Hardstanding
- Target Notes
- Development boundary
- Survey boundary

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Preliminary Ecological Appraisal - Development Boundary - Extension 2

Site: Land at: F Lloyd (Penley) Ltd, Wrexham
NGR: SJ 37309 48740
Author: Mark Halliwell
Date: 02/02/2023





KEY:

- A2.1 - Dense scrub
- SI B2.2 - Semi-improved neutral grassland
- SI B6 - Poor semi-improved grassland
- C3.1 - Tall ruderal
- G2 - Running water
- S I2.2 - Spoil
- A J1.2 - Amenity grassland
- J3.6 - Buildings
- J4 - Bare ground
- J5 - Hardstanding
- Target Notes
- Development boundary
- Survey boundary

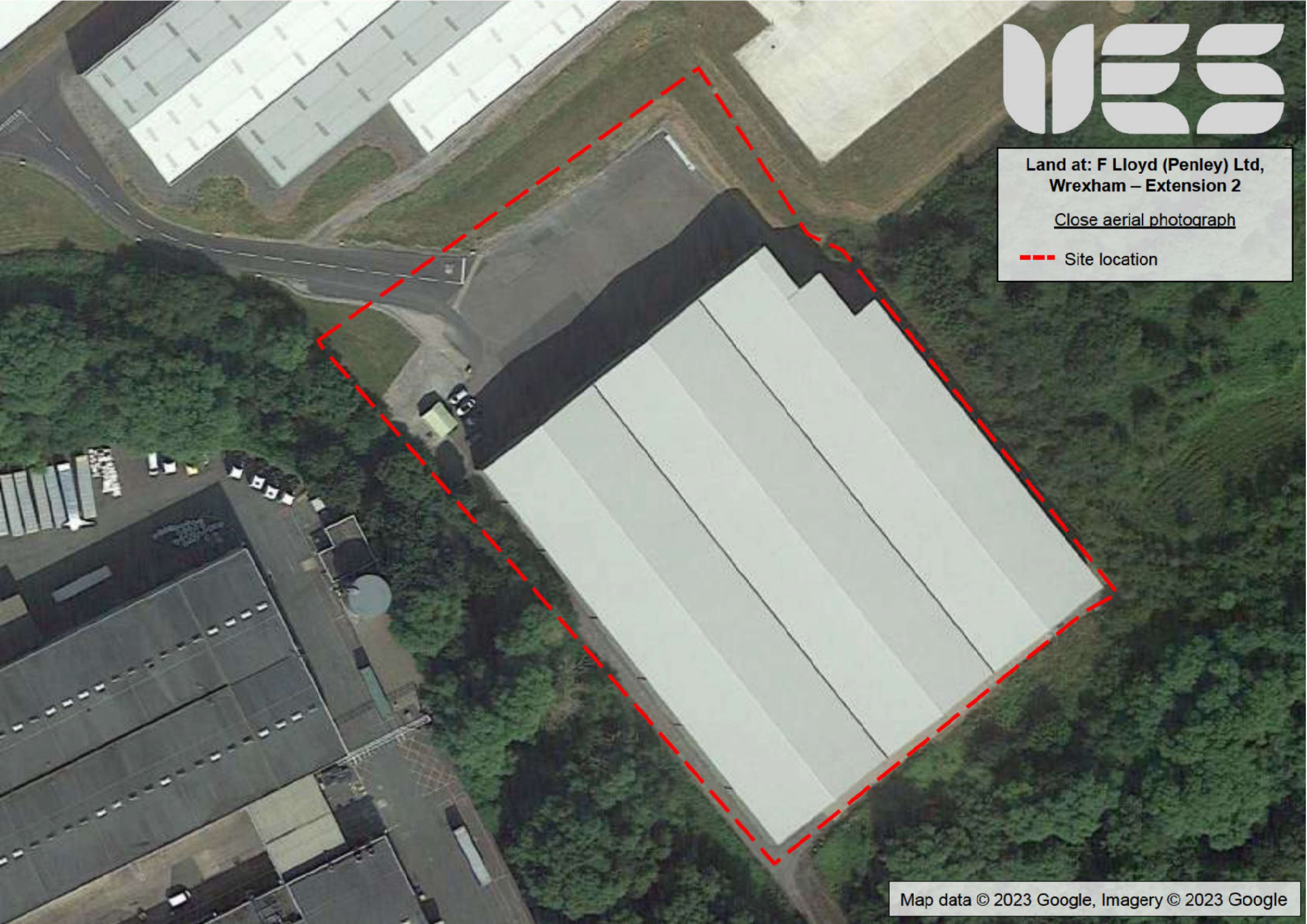
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Appendix 3 – Aerial photographs


Land at: F Lloyd (Penley) Ltd, Wrexham – Extension 1 and 2
Survey overview aerial photograph
Survey boundary
Extension 1 site boundary
Extension 2 site boundary
Map data © 2023 Google, Imagery © 2023 Google


Land at: F Lloyd (Penley) Ltd, Wrexham – Extension 1
Close aerial photograph
Extension 1 site boundary
Map data © 2023 Google, Imagery © 2023 Google


Land at: F Lloyd (Penley) Ltd, Wrexham – Extension 2
Close aerial photograph
Site location
Map data © 2023 Google, Imagery © 2023 Google


Land at: F Lloyd (Penley) Ltd, Wrexham – Extension 1 and 2
Wide aerial photograph
Site location
Map data © 2023 Google, Imagery © 2023 Google

Appendix 4 – Photographs



Photo 1. Looking southwards from the northern site boundary of Extension 1.



Photo 2. Looking eastwards from the southern site boundary of Extension 1. Offsite area of grassland and scrub is visible at the right.



Photo 3. Looking eastwards on inert spoil mound in Extension 1 with large fissures and cracks visible.



Photo 4. Looking north-westwards from south-eastern corner of Extension 1, showing gravel paths extending around the buildings.



Photo 5. Looking south-westwards from the northern site boundary of Extension 1.



Photo 6. Example of eaves of the industrial buildings on site.



Photo 7. Looking eastwards from the north of the site boundary for Extension 2.



Photo 8. Looking north-eastward from the northern site boundary for Extension 2.



Photo 9. Looking south-east towards the building with Extension 2.



Photo 10. Looking towards the western edge of the survey boundary near the site entrance.



Photo 11. Looking towards the River Clywedog flowing west to east.



Photo 12. Looking south over area of grassland with high species diversity (TN6).



Photo 13. Example of species-poor semi-improved grassland.



Photo 14. Area of tall ruderal transitioning into grassland further along the bank.



Photo 15. Japanese knotweed within the species-poor semi-improved grassland off site.



Photo 16. Example of inert spoil mound near species-rich grassland.



Photo 17. Bare ground adjacent to buildings and roads.



Photo 18. Himalayan balsam adjacent to dense scrub in wider site boundary (not on site).



Photo 19. Example of roads running through the site.



Photo 20. Hedgehog poo within amenity grassland.

Appendix 5 – Botanical species list

Scientific name	Common name	A2.1 Dense scrub	B2.2 Semi-improved neutral grassland	B6 Poor semi-improved neutral grassland	C3.1 Tall ruderal	J1.2 Amenity grassland
Epilobium ciliatum	American Willowherb			X		
Poa annua	Annual Meadowgrass		X	X		X
Fraxinus excelsior	Ash	X				
Crepis vesicaria	Beaked Hawk's-Beard		X	X		
Ophrys apifera	Bee Orchid		X			X
Lotus corniculatus	Bird's-Foot Trefoil		X			
Helminthotheca echiodes	Bristly Oxtongue		X			X
Rumex obtusifolius	Broad-Leaved Dock		X	X	X	
Stellaria media	Chickweed		X	X		X
Galium aparine	Cleavers		X	X		X
Dactylis glomerata	Cocksfoot Grass		X	X		X
Hypochaeris radicata	Common Cat's Ear		X			X
Symphytum officinale	Common comfrey					
Veronica persica	Common Field-Speedwell		X			
Heracleum sphondylium	Common hogweed				X	
Centaurea nigra	Common Knapweed		X			
Dryopteris filix-mas	Common Male Fern		X			
Cerastium fontanum	Common Mouse-Ear		X	X		X
Vicia sativa	Common Vetch		X			
Primula veris	Cowslip		X			
Salix fragilis	Crack willow	X				
Agrostis stolonifera	Creeping Bent		X	X		
Ranunculus repens	Creeping Buttercup		X	X		X
Potentilla reptans	Creeping Cinquefoil		X	X		X
Cirsium arvense	Creeping Thistle		X	X		
Cynosurus cristatus	Crested Dogs Tail		X	X		
Cardamine pratensis	Cuckooflower		X			
Rumex crispus	Curled Dock			X		
Geranium dissectum	Cut-Leaved Cranesbill					
Bellis perennis	Daisy		X	X		
Taraxacum officinale	Dandelion		X	X		
Geranium molle	Dove's-Foot Crane's-Bill		X	X		X
Arrhenatherum elatius	False Oat Grass		X	X		
Equisetum arvense	Field Horsetail			X		
Rosa arvensis	Field Rose		X			
Luzula campestris	Field Wood-Rush		X			
Veronica chamaedrys	Germander Speedwell		X			
Carex flacca	Glaucous Sedge		X			
Aruncus dioicus	Goat's Beard		X	X		
Salix caprea	Goat willow	X				
Lathyrus nissolia	Grass Vetchling		X			
Salix cinerea	Grey willow	X				
Glechoma hederacea	Ground Ivy		X			
Trifolium dubium	Lesser Trefoil					
Ranunculus acris	Meadow Buttercup		X	X		
Alopecurus pratensis	Meadow Foxtail		X	X		
Leucanthemum vulgare	Ox-Eye Daisy		X	X		X
Carex pendula	Pendulous Sedge	X				
Lolium perenne	Perennial Ryegrass		X	X		X
Senecio jacobaea	Ragwort		X	X		X
Trifolium pratense	Red Clover		X			
Festuca rubra	Red Fescue		X	X		X
Plantago lanceolata	Ribwort Plantain		X	X		X
Poa trivialis	Rough Meadowgrass		X	X		
Anagallis arvensis	Scarlet Pimpernel		X			
Schedonorus sp	Schedonorus species		X			
Potentilla anserina	Silverweed		X			
Poa pratensis	Smooth Meadowgrass		X	X		
Vicia tetrasperma	Smooth Tare		X			
Bromus hordeaceus	Soft Brome		X			
Rumex acetosa	Sorrel		X	X		
Cirsium vulgare	Spear Thistle			X		X
Urtica dioicia	Stinging nettle				X	
Anthoxanthum odoratum	Sweet Vernal Grass		X	X		X
Coronopus squamatus	Swinecress			X		
Dipsacus fullonum	Teasel		X			
Arabidopsis thaliana	Thale cress					
Veronica serpyllifolia	Thyme-Leaf Speedwell					

Scientific name	Common name	A2.1 Dense scrub	B2.2 Semi-improved neutral grassland	B6 Poor semi-improved neutral grassland	C3.1 Tall ruderal	J1.2 Amenity grassland
Reseda luteola	Weld		X			
Silene latifolia	White Campion		X			
Trifolium repens	White Clover			X		X
Achillea millefolium	Yarrow		X	X		X
Blackstonia perfoliata	Yellow-Wort		X			
Holcus lanatus	Yorkshire Fog		X	X		X

Appendix 6 – External lighting guidance

Lighting scheme in relation to bats

The two most important features of street and security lighting with respect to bats are:

1. The UV component. Low or zero UV installations are preferred to reduce attraction of insects to lighting and therefore to reduce the attraction of foraging bats to these areas.

2. Restriction of the area illuminated. Lighting must be shielded to maintain dark areas, particularly above lighting installations, and in many cases, land adjacent to the areas illuminated. The aim is to maintain dark commuting corridors for foraging and commuting bats. Bats avoid well lit areas, and these create barriers for flying bats between roosting and feeding areas.

UV characteristics:

Low

- Low pressure Sodium Lamps (SOX) emit a minimal UV component.
- High pressure Sodium Lamps (SON) emit a small UV component.
- White SON, though low in UV, emit more than regular SON.

High

- Metal Halide lamps emit more UV than SON lamps, but less than Mercury lamps
- Mercury lamps (MBF) emit a high UV component.
- Tungsten Halogen, if unfiltered, emit a high UV component
- Compact Fluorescent (CFL), if unfiltered, emit a high UV component.
- Variable
- Light Emitting Diodes (LEDs) have a range of UV outputs. Variants are available with low or minimal UV output.
- Glass glazing and UV filtering lenses are recommended to reduce UV output.

Street lighting

- Low-pressure sodium or high-pressure sodium must be used instead of mercury or metal halide lamps. LEDs must be specified as low UV. Tungsten halogen and CFL sources must have appropriate UV filtering to reduce UV to low levels.
- Lighting must be directed to where it is needed and light spillage avoided. Hoods must be used on each lamp to direct light and contain spillage. Light leakage into hedgerows and trees must be avoided.
- If possible, the times during which the lighting is on overnight must be limited to provide some dark periods. If the light is fitted with a timer this must be adjusted to reduce the amount of 'lit time' and provide dark periods.

Security and domestic external lighting

The above recommendations concerning UV output and direction apply. In addition:

- Lighting should illuminate only ground floor areas. Light should not leak upwards to illuminate first floor and higher levels.
- Lamps of greater than 2000 lumens (150 W) must not be used.
- Movement or similar sensors must be used. They must be carefully installed and aimed, to reduce the amount of time a light is on each night.
- Light must illuminate only the immediate area required, by using as sharp a downward angle as possible. Light must not be directed at or close to bat roost access points or flight paths from the roost. A shield or hood can be used to control or restrict the area to be lit.
- Wide angle illumination must be avoided as this will be more disturbing to foraging and commuting bats as well as people and other wildlife.
- Lighting must not illuminate any bat bricks and boxes placed on buildings, trees or other nearby locations.

Taken from the Bat Conservation Trust

Appendix 7 – Planning and statutory context

STATUTORY AND PLANNING CONTEXT

Ecological assessments

Ecological assessments play an important part within the planning context; they include an initial assessment which highlights any specific interests of a site. From the initial site assessment, the surveyor assesses the suitability of habitats within the site to support protected species and makes recommendations for further survey works if required. The following paragraphs provide a brief interpretation of the legislative protection that is relevant to the findings of this report.

Habitats

Section 7 of the Environment Act (Wales) places a duty on Welsh Ministers to publish, review and revise lists of types of habitats and species in Wales which they consider are of key significance to sustain and improve biodiversity. The Welsh Ministers must also take all reasonable steps to maintain and enhance the habitats published in these lists, and encourage others to take such steps.

Amphibians

<u>Great crested newts</u>

Great crested newts (GCN) *Triturus cristatus* and their habitat (aquatic and terrestrial) are afforded full protection by the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. If both national and international legislation are taken together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture GCN
- Deliberately, intentionally or recklessly disturb GCN in such a way to be likely to significantly affect:
    - their ability to survive, breed, reproduce, rear or nurture their young
    - their ability to hibernate or migrate
    - their local distribution or abundance
- Deliberately, intentionally or recklessly take or destroy the eggs of GCN
- Damage or destroy breeding sites or resting places of GCN
- Intentionally or recklessly disturb sheltering GCN, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead GCN, any part of GCN or anything derived from GCN

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

GCN are also protected by the Protection of Animals Act 1911, which prohibits cruelty and mistreatment. Releasing a GCN in such a way as to cause undue suffering may be an offence under the Abandonment of Animals Act 1960.

In addition to the above, there are various statutory provisions relating to the transport of animals, designed to ensure their welfare. GCN are also listed under Section 7 of the Environment (Wales) Act 2016.

It is important to identify the presence of GCN individuals and also to identify suitable habitat on sites so that legal obligations regarding this species can be observed. If a survey identifies the presence of GCN on the site, an assessment of the population size class is required. This can then inform a mitigation scheme, which would need to be developed in liaison with the local Natural Resources Wales (NRW) team, and which minimises direct threats to newts and compensates for any loss of habitat. A licence issued by NRW is required for the legal implementation of a mitigation scheme.

An NRW mitigation licence application requires a Mitigation Method Statement and a Reasoned Statement of Application. The Mitigation Method Statement contains details of the proposed mitigation works. The Reasoned Statement needs to provide a rational and reasoned justification as to why the proposed development meets the requirements of the Conservation (National Habitats & c.) regulations 1994, namely Regulations 44(2)(e), (f) or (g), and 44(3)(a).

Other amphibians

More common British amphibians, such as common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Triturus vulgaris* and palmate newt *Triturus helveticus* are protected only by Section 9(5) of the Wildlife and Countryside Act 1981 (as amended). This section prohibits sale, barter, exchange, transporting for sale and advertising to sell or to buy.

The above named species are also listed as UK Species of Conservation Concern. Due to general declines in most British amphibian species in recent years, many local authorities require amphibian surveys as a planning condition, or as part of environmental information submitted as part of a planning application, even where the presence of GCN is ruled out.

Natterjack toad *Bufo calamita* and pool frog *Pelophylax lessonae* are also offered the same level of protection as GCN, through the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017.

Natterjack and common toad are also listed under Section 7 of the Environment (Wales) Act 2016.

Water bodies that support all five (more common) species of British amphibians in high numbers, may be afforded protection in local plans, as Sites of Importance for Nature Conservation (SINC), or a similar equivalent, for sites of local importance. A site may require statutory protection as a Site of Special Scientific Interest (SSSI).

Reptiles

Common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix natrix* and adder *Vipera berus* are protected under the Wildlife and Countryside Act 1981 (as amended). They are listed as a Schedule 5 species therefore part of Section 9(1) and section 9(5) apply. The Countryside and Rights of Way Act 2000 also strengthens their protection. It is offence to:

- Intentionally or recklessly kill or injure any of the species listed above
- Sell, offer, advertise or transport for sale a live or dead animal of the species listed above

If a proposed development is likely to have an impact on these reptiles the local statutory nature conservation organisation must be consulted.

Sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca* receive full protection under the Wildlife and Countryside Act 1981 (as amended) and Conservation of Habitats and Species Regulations 2017. Read together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture any sand lizards or smooth snakes
- Deliberately, intentionally or recklessly disturb sand lizards or smooth snakes in such a way to be likely to significantly affect:
    - their ability to survive, breed, reproduce, rear or nurture their young
    - their ability to hibernate or migrate
    - their local distribution or abundance
- Deliberately, intentionally or recklessly take or destroy the eggs of such an animal
- Damage or destroy breeding sites or resting places of such animals
- Intentionally or recklessly disturb sheltering sand lizards or smooth snakes, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead sand lizards or smooth snakes, any part of such an animal or anything derived from such an animal

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

All reptile species (except for smooth snake) are also listed under Section 7 of the Environment (Wales) Act 2016.

Badger

European badgers *Meles meles* and their habitat are protected under The Protection of Badgers Act 1992 and are also included on Schedule 6 of the Wildlife and Countryside Act 1981, and Appendix III of the Bern Convention. The legislation affords badgers protection against deliberate harm or injury making it an offence to:

- Wilfully kill, injure, take, possess or cruelly ill-treat a badger (or attempt to do so)
- To interfere with a sett by damaging or destroying it
- To obstruct access to, or entrance of, a badger sett
- To disturb a badger whilst it is occupying a sett

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

Works that disturb badgers whilst they are occupying a sett are illegal without a licence. Disturbance can occur even without direct interference or damage to the sett in question. In general, the following activities are likely to require a licence:

- Use of heavy machinery or significant earth moving within 30m of a sett
- Use of lighter machinery (usually any wheeled vehicles) within 20m of a sett
- Any digging, chain saw use or scrub clearance within 10m of a sett

Hazel dormouse

Hazel dormice *Muscardinus avellanarius* are offered full protection through the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. If both national and international legislation are taken together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture dormice
- Deliberately, intentionally or recklessly disturb dormice in such a way to be likely to significantly affect:
    - their ability to survive, breed, reproduce, rear or nurture their young
    - their ability to hibernate or migrate
    - their local distribution or abundance
- Damage or destroy breeding sites or resting places of dormice
- Intentionally or recklessly disturb sheltering dormice, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead dormouse, any part of a dormouse or anything derived from a dormouse

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

Dormice are also listed under Section 7 of the Environment (Wales) Act 2016.

Bats

In the United Kingdom, all species of bat and their roosts are afforded full protection under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (known as the "Habitats Regulations"). The Wildlife and Countryside Act is the domestic implementation of the Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) and was amended by the Countryside and Rights of Way Act 2000. This makes it an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture a bat
- Deliberately, intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection
- Deliberately, intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection (even if the bat is not present at the time)
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead bat, any part of a bat or anything derived from a bat

Under UK law, a bat roost is *any structure or place which any wild [bat] … uses for shelter or protection*. As bats often reuse the same roosts, legal opinion is that a roost is protected whether or not the bats are present at the time of the activity taking place.

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

If an activity is likely to result in any of the above offences, a licence can be applied for to derogate from the protection afforded. These licences must provide appropriate mitigation and are issued by NRW.

The Environment (Wales) Act 2016 also lists the following bat species as species of principle importance under Section 7:

- Barbastelle *Barbastella barbastellus*
- Bechstein's bat *Myotis bechsteinii*
- Noctule *Nyctalus noctula*
- Common pipistrelle *Pipistrellus pipistrellus*
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Brown long-eared bat *Plecotus auritus*
- Greater horseshoe *Rhinolophus ferrumequinum*
- Lesser horseshoe *Rhinolophus hipposideros*

Birds

All wild birds, their nests and young are protected throughout England and Wales by the Wildlife & Countryside Act 1981 (as amended). It is illegal to kill, injure or take any wild bird, or damage or destroy the nest or eggs of breeding birds. The legislation applies to all bird species, common and rare.

In addition to the protection afforded to all wild birds, more vulnerable species listed on Schedule 1 of the Act receive enhanced protection when breeding. Schedule 1 species, including their dependent young, are protected from intentional or reckless disturbance whilst at or near the nest, in addition to the protection afforded the more common species.

The Environment (Wales) Act 2016 offers further protection to the nests of some species that regularly re-use their nests, even when the nests are not in use.

The leading governmental and non-governmental conservation organisations in the UK have reviewed the population status' of 244 UK bird species. "Birds of Conservation Concern 4: the Red List for Birds" is the most recent publication summarising their findings. Three lists, Red, Amber and Green, have been produced based on the most up-to-date evidence available and criteria include conservation status at global and European levels and, within the UK: historical decline, trends in population and range, rarity, localised distribution and international importance. These lists are a valuable resource when considering conservation priorities.

Trees

Trees may be protected on an individual or group level through a Tree Preservation Order (TPO). In order to carry out works to trees with a TPO, prior written consent must be obtained from the Local Planning Authority. Trees may also be protected through a condition of planning consent or designated conservation areas.

Hedgerows

The Hedgerow Regulations are made under Section 97 of the Environment Act 1995 and came into operation on 1st of June 1997. They aim to protect important hedgerows in the countryside by controlling their removal through a system of notification to the Local Planning Authority.

A hedgerow can only be considered for classification as "important" if it, or the hedgerow of which the section belongs to is over 20m in length (or which meets a hedgerow at either end) and has existed for 30 years or more.

Plants

Schedule 8 of the Wildlife & Countryside Act 1981 (as amended) lists a number of plant species which are protected under Section 13 of the same legislation. As such, it is an offence to:

- Intentionally or recklessly pick, uproot or destroy a plant, or any seeds or spores attached to it, which is listed on Schedule 8
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead wild plant on Schedule 8, any part of the plant or anything derived from the plant

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

The Conservation of Habitats and Species Regulations 2017 extends European legislative protection to a further subset of plants. It is therefore an offence to pick, collect, cut, uproot, destroy or trade any plant listed in Schedule 4 of these Regulations, unless the appropriate licence is first obtained.

A large number of species of vascular plants, lichens, algae, fungi, mosses, stoneworts and liverworts are also protected through planning policy as species of principal importance, as required under Section 7 of the Environment Act (Wales) 2016.

Invasive Plant Species

A number of invasive, non-native plant species are listed under Schedule 9 (Part II) of the Wildlife and Countryside Act 1981 (as amended). The most commonly encountered listed species in ecological surveys are Japanese knotweed *Fallopia japonica*, Montbretia *Crocosmia x crocosmiiflora* and variegated yellow archangel *Lamiastrum galeobdolon subsp. argentatum*. Section 14(2) of this Act makes it an offence to *plant or otherwise cause to grow in the wild* any plant listed on Schedule 9 (Part II). These provisions are necessary to prevent the establishment of non-native species which may be detrimental to our native wildlife.

A number of invasive, non-native plants species are listed under Schedule 2 (Part II) of the Invasive Alien Species (Enforcement and Permitting) Order 2019. The most commonly encountered listed species in ecological surveys are Himalayan balsam *Impatiens glandulifera* and giant hogweed *Heracleum mantegazzianum*. Section 3 of this Act make it an offence to *plant* or *otherwise causes to grow in the wild* any plant which is listed on Schedule 2 (Part II). These provisions are necessary to prevent the establishment of non-native species which may be detrimental to our native wildlife.

Soil or plant material contaminated with non-native and invasive plants can cause ecological damage and may be classified as controlled waste. It is an offence to keep, treat or dispose of waste that could harm the environment or human health. If there is any doubt, contact the local authority or Environment Agency.

Japanese knotweed has an extensive root system and new plants can regenerate rapidly from the smallest fragments of rhizomes. Material containing this species is classed as “controlled waste” under the Environmental Protection Act (Duty of Care) Regulations 1991. The disposal of such waste requires all involved parties to follow a strict code of practice and maintain adequate records regarding their conduct.

Otter

European otter *Lutra lutra* are offered full protection through the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. If both national and international legislation are taken together, it is an offence to:

- Deliberately, intentionally or recklessly kill, injure or capture otters
- Deliberately, intentionally or recklessly disturb otters in such a way to be likely to significantly affect:
    - their ability to survive, breed, reproduce, rear or nurture their young
    - their ability to migrate
    - their local distribution or abundance
- Damage or destroy breeding sites or resting places of otters
- Intentionally or recklessly disturb sheltering otters, or obstruct access to their resting place
- Keep, transport, sell or exchange, or offer for sale or exchange any live or dead otter, any part of an otter or anything derived from otter

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

Otters are also listed under Section 7 of the Environment (Wales) Act 2016.

Water vole

Water voles *Arvicola amphibius* are protected by the provisions of Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- Intentionally kill, injure or take water vole
- Possess or control live or dead water vole or any part of a water vole
- Intentionally or recklessly damage destroy or obstruct access to any structure or place which a water vole uses for shelter or protection, or disturb water vole using such a place
- Sell, offer, advertise or transport live or dead water voles for sale

Licences are available from NRW to allow activities that would otherwise be an offence, including:

- Scientific or educational purposes
- For the purposes of ringing or marking
- Conserving wild animals or introducing them into particular areas
- Preserving public health or public safety
- Preventing the spread of disease
- Preventing serious damage to any form of property or to fisheries

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.

Water voles are also listed under Section 7 of the Environment (Wales) Act 2016.

White-clawed crayfish

White-clawed crayfish *Austropotomobius pallipes* are protected under the Wildlife and Countryside Act 1981 (as amended). They are listed as a Schedule 5 species therefore part of Section 9(1) and section 9(5) apply. The Countryside and Rights of Way Act 2000 also strengthens their protection. It is offence to:

- Intentionally or recklessly kill or injure white-clawed crayfish
- Sell, offer, advertise or transport for sale a live or dead white-clawed crayfish

If a proposed development is likely to have an impact on white-clawed crayfish then the local statutory nature conservation organisation must be consulted.

Penalties for offences include unlimited fines (formerly up to £5000), plus up to six months imprisonment, for each offence committed.
Their inclusion on the EC Habitats Directive allows areas to be designated as Special Areas of Conservation (SAC) for the presence of white-clawed crayfish. Such a designation brings legal protection under the Conservation of Habitats Regulations 2017, this includes how the site is managed and what development can occur on and in proximity to these sites.

White-clawed crayfish are also listed under Section 7 of the Environment (Wales) Act 2016.

Planning Policy

National planning guidance is issued in the form of Planning Policy Wales (PPW - 2018). The most relevant sections are included in Chapter 6: Distinctive and Natural Places. This chapter details the policies on issues such as the protection of trees, woodlands, species, and designated sites. The document is free and available to view online.