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PRELIMINARY ECOLOGICAL APPRAISAL

At

Plot 5B

Clywedog Road South

Wrexham Industrial Estate

Wrexham

LL13 9AE

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A handwritten signature in black ink, appearing to read 'Toby Hart', is positioned below the 'Approved by:' line.

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EXECUTIVE SUMMARY

United Environmental Services Ltd (UES) was commissioned to carry out a baseline ecological survey of a parcel of land at Plot B Clywedog Road South, which is located within the Wrexham Industrial Estate, south-east of Wrexham. A suite of ecological surveys was conducted for the site by Kingdom Ecology between 2017 and 2018, the results of which are detailed in their Ecological Survey Report (document reference KE1849.08). In order to update the survey results, UES have been commissioned to undertake a desk study and preliminary ecological appraisal (PEA) survey, including searches using the Multi Agency Geographic Information Centre (MAGIC). The site walkover survey was conducted by Alasdair Grubb and Tom Kenwright undertaken on 23rd August 2021.

The PEA provides an assessment of potential ecological impacts associated with the development of the land parcel. The development proposals include construction of a commercial industrial unit, for storage and distribution purposes, with associated access road and car parking.

The proposed development footprint has an area of approximately 2.9ha, is comprised mostly of unimproved grassland. The applicant's ownership boundary is greater than the proposed development footprint, which offers potential for ecological enhancements as part of the development proposals.

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** – reasonable avoidance measures (RAMs) to be implemented during the construction phase of the development.
- **Badger** – RAMs to be implemented during the construction phase of the development.
- **Bats** – a bat friendly lighting scheme should be sensitively designed and should avoid light spill onto the retained hedgerow and site boundaries.
- **Breeding birds** – site clearance and vegetation removal works are to take place outside of the breeding bird season and should not be undertaken from March to August inclusive. If this is not possible and works need to take place during this period, a targeted nest survey is to be undertaken immediately prior to the works by a suitably qualified ecologist, or an ecological clerk of works appointed to oversee the works.
- **Plant communities** – no plant communities which are afforded statutory protection, have been recorded on site, however the unimproved grassland is considered to provide local biodiversity value. Both on and off-site mitigation will be provided as part of the development to mitigate for the loss of this habitat.
- **Woodland** –. Generic issues relating to root protection areas of off-site woodland.

Mitigation measures, as detailed in section 4, should be adhered to, which may in some cases negate the need for further survey work. Landscaping and ecological enhancements are planned through the production of a detailed Landscape and Ecology Management Plan but have not been finalised as yet.

This report should be read with appendices 1 to 6, 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 Alasdair Grubb BSc ACIEEM, UES Ecologist. Alasdair has over 10 years' experience working in the environmental sector and is an experienced field surveyor. He is competent to undertake botanical surveys up to Phase 1 level and to identify other key ecological issues in relation to development. Other surveyors include:

- Tom Kenwright BSc MSc, UES Senior Ecologist. Tom 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.

The report provides an assessment of the potential ecological impacts associated with the proposed development of a parcel of land at Plot 5B, Clywedog Road South, near Wrexham.

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 August 2021 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

The development proposals include the construction of a commercial industrial unit with associated access road and car parking. Landscaping and ecological enhancements are planned but have not been finalised.



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 6, 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 – a biological records search of designated sites and protected or otherwise notable species within 2km of the proposed development site was undertaken through the North Wales Environmental Information Service, COFNOD.

2.2 Field survey

An ecological walkover survey was carried out on 23rd August 2021 by Alasdair Grubb and Tom Kenwright. 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 | • Hedgerows |
| • Reptiles | • Plant communities |
| • Badger | • Invasive species |
| • Bats | • Otter |
| • Hazel dormouse | • Water vole |
| • Birds | • White-clawed crayfish |
| • Trees | |

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 Resources Wales, and in the “Guidelines for Preliminary Ecological Appraisal” (CIEEM, 2017).

The survey area encompasses all the land within the development footprint and an additional 30m buffer 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 at an appropriate time of year, allowing a robust assessment of habitats to be undertaken. Therefore, no limitations to the survey were encountered.

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 no statutorily protected sites within 2km of the proposed development site. Four non-statutorily protected Local Wildlife Sites lie within 2km of the proposed development site, which were highlighted by the local biological records search:

- Cefn Park LWS¹
*This site is a series of broadleaved woodlands within Cefn Park Estate, covering 11.2 hectares. Big Wood (located approximately 500m to the north-west of the proposed development site) is the largest block of woodland (8.9ha) and is dominated by ash *Fraxinus excelsior* with other mature broadleaved trees interspersed. The site's reason for designation has not been specified by the local records search.*
- Peter's Dingle LWS
Peter's Dingle is an ash/oak woodland along a brook. It is a semi-natural broadleaved woodland covering approximately 5.4 ha. It is located approximately 2km to the south-east of the proposed development site. The site's reason for designation has not been specified by the local records search.
- Wrexham Industrial Estate LWS
This is a series of sites within Wrexham industrial estate which includes unmanaged grassland at Bryn Road and on Cefn Park land and the ancient broadleaved woodland Erlas Black Wood. The total area of the site covers 27.7ha. The closest part of the site to the proposed development site is a small area of semi-natural broadleaved woodland which lies approximately 500m to the north-east.
- Marchweil Marsh LWS
Marchweil Marsh is a marshy field located between a school and a disused railway line, approximately 1.9km to the south-west of the proposed development site. The site covers 1.2ha of marsh grassland. The site's reason for designation has not been specified by the local records search.

¹ LWS – Local Wildlife Site

There are fourteen statutorily protected sites (designated for ecological reasons) within 2 – 10km of site:

- Cloy Brook Pastures SSSI²
- Gatewen Marsh SSSI
- Johnstown Newt Sites SAC³
- Llay Bog SSSI
- Marford Quarry SSSI
- Midlands Meres and Mosses Phase 2 SSSI
- Midlands Meres and Mosses Phase 2 – Ramsar⁴
- Old Pulford Brook Meadows SSSI
- River Dee / Afon Dyfrdwy SSSI
- River Dee and Lake Bala SAC
- 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 neither Natural England request that they are consulted on developments of this type or scale.

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 sites, the closest of which is from a pond 250m to the west of the site; GCN eggs were recorded here in 2010 showing that this was a breeding population. A pond 270m to the north of the site was surveyed in 2019, where a breeding population of GCNs was found. Records return of common toad *Bufo bufo*, common frog *Rana temporaria*, smooth newt *Lissotriton vulgaris* and palmate newt *Lissotriton helveticus* were also returned from within 2km of the proposed development site.
- Badgers: numerous records of badgers were returned from within 2km of the proposed development site, including records of active setts, field signs and badger sightings. The closest records details a single active hole in deciduous woodland / scrub, located 260m to the north-east of the proposed development site.
- Bats: records of roosting common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus* and brown long eared *Plecotus auritus* bats were returned from within 2km of the proposed development site. Non-roost records of lesser horseshoe *Rhinolophus hipposideros*, noctule *Nyctalus noctula*, Daubenton's *Myotis daubentonii*, Brandt's *Myotis brandtii*, whiskered *Myotis mystacinus* and unidentified *Myotis sp.* bats were also returned.
- Birds: various species, including several NERC section 41 and Wildlife and Countryside Act 1981 Schedule 1 species.
- Butterflies and moths: numerous records of butterflies and moths were returned from within 2km of the proposed development site, including
- Hazel dormouse: no records of hazel dormouse *Muscardinus avellanarius* were returned from within 2km of the proposed development site.

² SSSI – Site of Special Scientific Interest

³ SAC – Special Area of Conservation

⁴ Ramsar – Wetland of international importance



- Hedgehog: numerous records of hedgehog *Erinaceus europaeus* were returned from within 2km of the proposed development site. The closest record is located approximately 500m west of the proposed development site and details a single adult hedgehog found dead on the road in 2012.
- Otter: five records of otter *Lutra lutra* were returned from within 2km of the proposed development site. The closest of these was located approximately 900m south of the proposed development site and details the presence of otter spraint near the River Clywedog in 2014.
- Reptiles: numerous reptile records were returned from within 2km of the proposed development site. A single record of individual adder *Vipera berus* and slow worm *Anguis fragilis* was recorded prior to 2009 approximately 1km to the west of the site. Two records of grass snake *Natrix natrix* were returned from within 2km of the proposed development site, the most recent and closest being a single adult in 2018, located approximately 1.2km to the north-west of the proposed development site. A single common lizard *Zootoca vivipara* was recorded 1.7km to the north-west of the site in 2020.
- Water vole: No records of water vole *Arvicola amphibius* were returned from within 2km 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.

The proposed development site is situated on the south-western side of the Wrexham Industrial Estate. Therefore, habitats to the north and east are dominated by industrial units and hardstanding, with small areas of scrub and amenity grassland. Some residential housing is present locally, with associated gardens. Habitats to the south and west are dominated by agricultural fields, which are intersected by mature hedgerows. The town of Wrexham is located within 1.5km to the west of the site. The following principal habitat types were characterised on site or within the immediate vicinity of the site:

- A1.3.1 Mixed woodland
- A2.1 Scrub – dense/continuous
- A2.2 Scrub - scattered
- B2.1 Unimproved neutral grassland
- B2.2 Semi-improved neutral grassland
- C3.1 Ruderal tall herb
- J2.4 Fence
- J2.6 Dry ditch



3.2.1 A1.3.1 Mixed woodland

A narrow strip of mature woodland, approximately 30m wide, borders the site to the north and east. The woodland canopy comprises deciduous species such as pedunculate oak *Quercus robur*, poplar *Populus* spp., ash *Fraxinus excelsior* and silver birch *Betula pendula*, however some conifer species are present such as Leyland cypress *Cupressus × leylandii* and black pine *Pinus nigra*. The understory is populated with species such as hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, elder *Sambucus nigra*, rowan *Sorbus aucuparia*, guelder rose *Viburnum opulus*, goat willow *Salix caprea*, holly *Ilex aquifolium*, apple *malus* sp., field maple *Acer campestre*, grey willow *Salix cinerea* and cherry laurel *Prunus laurocerasus*. Ash and poplar saplings are emerging at ground level, and other ground layer species include: hedge woundwort *Stachys sylvatica*, wood avens *Geum urbanum*, tufted hair grass *Deschampsia cespitosa*, false wood brome *Brachypodium sylvaticum*, cocksfoot grass *Dactylis glomerata*, herb Robert *Geranium robertianum*, ivy *Hedera helix*, ground ivy *Glechoma hederacea*, bramble *Rubus fruticosus* agg., dog rose *Rosa canina*, wood dock *Rumex sanguineus*, dandelion *Taraxacum officinale* agg., garlic mustard *Alliaria petiolata*, meadowsweet *Filipendula ulmaria*, wild privet *Ligustrum vulgare*, hart's-tongue fern *Asplenium scolopendrium*, male fern *Dryopteris filix-mas*, black bryony *Dioscorea communis*, introduced honeysuckle *Lonicera* sp., bittersweet *Solanum dulcamara*, broad buckler fern *Dryopteris dilatata*, broad-leaved willowherb *Epilobium montanum*, water figwort *Scrophularia auriculata*, water mint *Mentha aquatica*, common couch grass *Elymus repens*, perforate St John's wort *Hypericum perforatum*, cleavers *Galium aparine*, stinging nettle *Urtica dioica*, hemlock water dropwort *Oenanthe crocata*, honeysuckle *Lonicera periclymenum*, mosses *Bryophyta* spp., marsh woundwort *Stachys palustris* and greater plantain *Plantago major*.

There is a footpath which partially runs through the woodland in the north-eastern corner of the woodland. Residential gardens border the woodland on the eastern side, some of which appear to be depositing garden waste into the woodland.

Some of the woodland species such as blackthorn and willow spp. are spreading southwards towards the proposed development site boundary, forming scattered scrub.

3.2.2 A2.1 Scrub – dense / continuous

The woodland which borders the east of the site becomes characteristically dense scrub towards the southern end of the site. Semi-mature hawthorn, goat willow and blackthorn form a dense stand of scrub.

3.2.3 A2.1 Scrub – scattered

At the northern end of the site, the off-site woodland is extending towards the site through dispersal of scrub species such as blackthorn and willow spp.

There are small patches of scattered scrub within the tall ruderal vegetation which forms the western boundary of the site. Scrub species present here include bramble, elder, wild privet, goat willow, hawthorn, dog rose and damson *Prunus insititia*.

3.2.4 B2.1 Unimproved neutral grassland

With the exception of a narrow strip of tall ruderal vegetation on the western site boundary, the entirety of the proposed development footprint comprises unimproved grassland, the majority of which had been mown prior to the site walkover. A 30m wide strip of unmown grassland was present in the northern section of the site and a 10m wide strip has been left to the east. The species listed below were recorded in the unmown areas but are considered to extend across the whole of the grassland in similar densities.

Species which are abundant throughout the grassland include: tufted hair grass, cocksfoot, false oat grass, timothy grass *Phleum pratense*, black knapweed *Centaurea nigra*, hoary ragwort *Jacobaea erucifolia*, greater bird's-foot trefoil *Lotus pedunculatus*. Species occurring frequently include: Yorkshire fog grass *Holcus lanatus*, meadow vetchling *Lathyrus pratensis*, meadowsweet, creeping thistle *Cirsium arvense*, yarrow *Achillea millefolium*, bramble, curled dock *Rumex crispus* and common fleabane. Occasionally occurring species include: pepper saxifrage *Silene silaus*, common couch grass, sweet vernal grass *Anthoxanthum odoratum*, brown topped bent grass *Agrostis tenuis*, rough meadow grass *Poa trivialis*, broad leaved dock *Rumex obtusifolius*, common hogweed *Heracleum sphondylium*, stinging nettle, creeping cinquefoil *Potentilla reptans*, tufted vetch *Vicia cracca*, lesser stitchwort *Stellaria graminea*, hard rush *Juncus inflexus*, greater willowherb *Epilobium hirsutum*, glaucous sedge *Carex flacca*, creeping buttercup *Ranunculus repens*, marsh foxtail *Alopecurus geniculatus* and small timothy grass *Phleum bertolonii*.

Species present in rare density include: common bent grass *Agrostis capillaris*, red fescue *Festuca rubra*, perennial rye grass *Lolium perenne*, cow parsley *Anthriscus sylvestris*, common ragwort *Jacobaea vulgaris*, foxglove *Digitalis purpurea*, crosswort *Cruciata laevipes*, perforate St John's wort, ribwort plantain *Plantago lanceolata*, wild carrot *Daucus carota*, broad leaved willowherb, prickly sowthistle *Sonchus asper*, bristly oxtongue *Helminthotheca echinoides*, cut-leaved cranesbill *Geranium dissectum*, hoary willowherb *Epilobium parviflorum*, teasel *Dipsacus fullonum*, field horsetail *Equisetum arvense*, upright hedge parsley *Torilis japonica*, imperforate St John's wort *Hypericum maculatum*, hedge bindweed *Calystegia sepium*, black medick *Medicago lupulina*, false fox sedge *Carex otrubae*, compact rush *Juncus conglomeratus*, soft rush *Juncus effusus*, selfheal *Prunella vulgaris*, red clover *Trifolium pratense*, common mouse-ear *Cerastium fontanum*, yellow-wort *Blackstonia perfoliata*, oxeye daisy *Leucanthemum vulgare*, common spotted orchid *Dactylorhiza fuchsii*, spiny restharrow *Ononis spinosa*, hairy tare *Vicia hirsuta*, smooth tare *Vicia tetrasperma*, common vetch *Vicia sativa*, common field speedwell *Veronica persica*, spear thistle *Cirsium vulgare*, common agrimony *Agrimonia eupatoria*, greater plantain, white clover *Trifolium repens*, marsh woundwort, common daisy *Bellis perennis*, grass vetchling *Lathyrus nissolia*, black sedge *Carex nigra*, hairy sedge *Carex hirta* and grounzel *Senecio vulgaris*.

There is a small area of the grassland, located just off site to the north-east, which appears to have a wet influence, as indicated by the presence of species such as *Carex* and *Juncus* species as well and a greater relative density of meadowsweet.

There also appears to be a slight calcareous influence to the grassland in the northern section of the site, as indicated by presence of yellow-wort in this area, However the majority of the site if considered to be neutral in pH.

The site appears to be mown currently, with arisings remaining on site. Although this will reduce the expansion of scattered scrub throughout the grassland, the leaving of arisings will contribute to nutrient accumulation, which will cause the quality of the grassland (species diversity) to decrease over time.

3.2.5 B2.2 Semi-improved neutral grassland

There is a narrow strip of rough grassland located to the south of the proposed development site, which is within the applicant's ownership. This grassland is rank in structure and is becoming encroached by scattered scrub. The species diversity in this grassland is poorer than that which occurs within the proposed development site: cocksfoot and false oat grass are the dominant grasses, with common couch grass also present throughout the grassland. The grasses form a dense, rank sward, with frequent ruderal species such as creeping and spear thistle, stinging nettle, common ragwort, common hogweed, rosebay willowherb *Chamaenerion angustifolium* and broad-leaved dock present. Other species which are present occasionally include: black knapweed, hoary ragwort, creeping cinquefoil, meadow vetchling, common toadflax *Linaria vulgaris*, common bent grass, creeping buttercup, dandelion agg., tufted vetch, ribwort plantain, curled dock, crosswort and lesser stitchwort. The following species are present but are rare throughout the sward: common catsear *Hypochaeris radicata*, white clover, common agrimony, upright hedge parsley, cow parsley, cleavers, common sorrel *Rumex acetosa*, perforate and imperforate St John's wort, common field speedwell and canary reed-grass *Phalaris arundinacea*.

The scattered scrub species in this area include hawthorn, bramble, dog rose, blackthorn and damson, with some pedunculate oak and ash saplings also scattered.

3.2.6 C3.1 Tal ruderal herb

There is a narrow strip of vegetation on the western boundary of the site, which is dominated by ruderal species, however grassland and scattered scrub species are also present. Species present include common hogweed, greater willowherb, broad leaved dock, stinging nettle, common ragwort, cock's foot, false oat grass, common couch grass, meadowsweet, brown topped bent grass, meadow vetchling, Yorkshire fog, creeping thistle, hedge bindweed, teasel, tufted vetch, cleavers, bramble, bristly oxtongue and creeping buttercup.

Tree species present include elder, wild privet, goat willow, hawthorn, dog rose and damson, which form scattered scrub within the ruderal vegetation.

There is a post and wire fence which runs through this vegetation, north to south. This demarcates the western site boundary.

3.2.7 G2 Running water

A single drainage ditch is located to the west of Clywedog Road South. The ditch is sparsely vegetated with species such as water mint, greater willowherb and fool's water cress *Helosciadium niflorum*. The banks of the ditch are heavily mown for flood management / amenity purposes, and the ditch appears to be cleared out regularly and the flow rate / water level appears to fluctuate depending on rainfall.

3.2.8 J2.4 Fence

The western site boundary is demarcated by a post and rail fence (approx. 1.2m in height), which runs north to south through tall ruderal vegetation.



There is a 2m high palisade fence north of the proposed site boundary, which demarcates the woodland and applicant's ownership boundary, from the neighbouring commercial units to the north.

There is a variety of garden fencing used to demarcate the woodland on the eastern edge of the applicant's ownership boundary, from the residential gardens located to the east of the site.

3.2.9 J2.6 Dry ditch

There is a dry ditch which runs from west to east in the woodland located north of the proposed development site. The ditch was dry during the site walk over and appears to be dry throughout most of the year. The ditch is mostly unvegetated and covered with a thick layer of leaves / branches. Species such as bittersweet, male fern, hart's-tongue fern and mosses are present in low density.

A second dry ditch is present running north to south in the woodland and dense scrub to the east of the site. It is of similar character to the one north of the site, however it is more densely shaded and overgrown by tree species such as goat willow and blackthorn. It is considered to be dry for the majority of the year.



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

The habitats within the proposed development site boundary are broadly suitable for foraging amphibians, including GCNs. The vegetative species diversity within the grassland on site will support an abundance of invertebrate prey, whilst the offsite woodland and scrub will provide suitable sheltering opportunities for amphibians.

There are no suitable aquatic habitats for GCNs located within the proposed development footprint and there are no mapped ponds within 100m of the proposed development boundary. The dry ditch located within the off-site woodland, is considered to be dry for the majority of the year, and therefore, unsuitable for breeding GCNs.

A single drainage ditch is located to the west of Clywedog Road South (see Appendix 4 – Photographs Photo 8), which is considered to provide low potential for GCNs. The ditch is sparsely vegetated with species such as water mint, greater willowherb and fool's water cress. The banks of the ditch are heavily mown for flood management / amenity purposes, and the ditch appears to be cleared out regularly. This ditch was subject to GCN presence / absence surveys and eDNA sampling in 2018 by Kingdom Ecology; the results were negative, showing that GCNs were not present within the ditch. The ditch appears to be less suitable for GCNs now than in 2018 (vegetation is sparser, offering fewer egg laying opportunities and allowing water levels to fluctuate more widely). Therefore, it is considered highly unlikely that GCNs are using the ditch currently.

There are three mapped ponds located between 100m and 250m of the site boundary (190m to the west of the site, beyond Clywedog Road South), and GCNs have been previously recorded in a pond located 250m from the proposed development site to the west in 2010 and in a pond 270m to the north in 2019. However, these ponds are isolated from the proposed development site by the interposing commercial units, hard standing and Clywedog Road South which sever any connectivity between the pond and the proposed development site.

Therefore, due to the lack of aquatic habitats present within the proposed development site and highly unlikely presence of GCNs within the vicinity of the site, it is considered highly unlikely that GCNs will be adversely affected by the proposed development.

3.3.2 Reptiles

The habitats within the proposed development site boundary are broadly suitable for foraging and commuting reptiles. The vegetative species diversity within the grassland on site will support an abundance of invertebrate prey, whilst the offsite woodland and scrub will provide suitable sheltering and commuting opportunities.

Reptile presence / absence surveys were conducted by Kingdom Ecology in 2018, however no reptiles were recorded on site. It is considered that the conditions on site have not changed since these reptile surveys were conducted. Therefore, the results and recommendations of



these surveys are still considered to be appropriate and valid; it is considered highly unlikely that the site supports reptiles.

3.3.3 Badger

A single mammal path was located in the southern section of the site (Photo 6), which bisects the site east to west. A single accumulation of badger faeces was observed associated with this path (see Appendix 2 - Phase 1 habitat plan, Target Note 1, and Photo 7). Therefore, badger presence on site has been confirmed.

The area of woodland and scrub within 30m of the proposed development boundary (to the north and east) was thoroughly searched for further evidence of badgers, including looking for sett locations. No further evidence was found, and it is considered that there are not badger setts on or within 30m of the proposed development site.

The site is considered to be used by badgers for foraging and commuting purposes.

3.3.4 Bats

There are no buildings or trees on site which could be used by roosting bats. The woodland and scrub located to the north and east of the site may offer roosting opportunities for bats, but this will not be affected by the development proposals.

The site is considered to provide suitable foraging opportunities due to the vegetative diversity on site which will support an array of invertebrate prey for bats. Furthermore, the woodland and scrub located along the site boundaries, will provide higher quality foraging and commuting opportunities for bats.

Bat activity surveys were conducted by Kingdom Ecology in 2018. These surveys found a low number of common bat species using the site for foraging purposes.

3.3.5 Hazel dormouse

The proposed development site almost entirely comprises unimproved grassland and there are no habitats such as woodland, dense scrub or established hedgerows present on site which could support hazel dormice *Muscardinus avellanarius*. The offsite woodland and scrub to the north and east of the site provide higher quality foraging, commuting and sheltering opportunities for hazel dormice, however they are lacking sufficient density of key species required, such as hazel and honeysuckle.

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 2021 site visit, the following bird species were recorded whilst on site: chaffinch *Fringilla coelebs*, goldfinch *Carduelis carduelis*, bullfinch *Pyrrhula pyrrhula*, blue tit *Cyanistes caeruleus*, woodpigeon *Columba palumbus*, great spotted woodpecker *Dendrocopos major*, jay *Corvus cristata*, jackdaw *Corvus*



monedula, carrion crow *Corvus corvone*, and rook *Corvus frugilegus*. None of these species were actually observed using the site; they were either recorded flying over site, or close to the site within the off-site woodland and scrub.

The habitats for breeding birds on site are limited (some opportunities are provided for species such as *Phylloscopus* and *Sylvia* warblers, which may use long grasses and ruderal vegetation, if the sward is left unmown throughout the breeding bird season). Foraging opportunities through the breeding season are of moderate value for an array of species due to the abundance of invertebrate prey which will be supported by the vegetative diversity. The woodland and scrub located off site will provide both foraging and nesting opportunities for a variety of bird species.

Breeding bird surveys were conducted by Kingdom Ecology in 2018, however no notable species were observed nesting within the proposed development site boundary. Moderately high densities of individual birds were recorded during the surveys, and it was concluded that the site offers local importance for foraging birds through the summer months.

The scale of the site, and lack of areas of standing water, render the site unsuitable for notable assemblages of wintering bird species.

3.3.7 Trees

There are no trees within the proposed development boundary. There are numerous trees within the woodland, located within the immediate vicinity of the northern and eastern site boundaries. This woodland is off site and will not be directly impacted by the development proposals.

3.3.8 Hedgerows

There are no hedgerows located within, or in the immediate vicinity of the proposed development boundary.

3.3.9 Plant communities

Although the majority of the site comprises botanically diverse, unimproved grassland, no plant communities or individual species were recorded on site which are afforded statutory protection in their own right. Species of conservation interest which were observed on site include spiny retharrow and pepper saxifrage, however no species listed under Section 7 of the Environment (Wales) Act 2016 were identified within the proposed development site boundary.

The site is considered to provide local biodiversity value due to the presence of unimproved grassland and the species detailed.

3.3.10 Invasive species

No non-native, invasive plant species were recorded on (or within the immediate vicinity of) the site during the site walkover survey.



3.3.11 Otter, water vole and white-clawed crayfish

There are no aquatic habitats on site or within the immediate vicinity of the site suitable to support either otter *Lutra lutra*, water vole *Arvicola amphibious* or white-clawed crayfish *Austropotamobius pallipes*.

There is a single drainage ditch located west of the site, to the west of Clywedog Road South. This ditch was thoroughly surveyed for evidence of otters and water voles, and no evidence was found. The ditch and associated vegetation is of negligible quality for either species due to the short bankside and low density of aquatic vegetation, and high level of disturbance afforded to the ditch from the adjacent road. The flow rate and water level of the ditch is considered to fluctuate widely with rainfall.

The habitats present within the proposed development footprint are of very low quality for otters and water voles due to the lack of aquatic habitats. Furthermore, there are no suitable features for otter holts or resting areas, or water vole borrows within the site boundary.

White-clawed crayfish have a limited distribution nationally, limited to specific river system and this species is not known to be present locally.

It is considered highly unlikely that either otters, water voles or white-clawed crayfish are present on site or within the immediate vicinity of the site.



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 sites identified during the desk study were cross-referenced with the survey area relevant to this report. The closest statutorily protected site is Sontley Marsh SSSI, which is 3km south-west of the proposed development site. There are two non-statutorily protected site within 600m of the proposed development site: two small semi-natural broadleaved woodlands which are part of the Cefn Park and Wrexham Industrial Estate Local Wildlife Sites.

Given the distances from site and the scale 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 Woodland

There are no trees or woodland within the proposed development site, however there is an area of mature mixed woodland within the immediate vicinity of the eastern site boundary. The woodland will remain unaffected by the development proposals, however unmitigated works may result in damage to the root areas of the trees.

Construction impacts

Construction activities too close to the root protection areas (RPAs) of the woodland could cause permanent damage.

Mitigation

Any works close to the eastern site boundary should be mindful of the woodland and its RPA.

Operational impacts

No operational impacts are envisaged.

4.1.3 Plant communities

The majority of the site comprises botanically diverse unimproved grassland, however no plant communities or individual species were recorded on site which are afforded statutory protection in their own right. The site is considered to be of locally important biodiversity value due to the presence of this plant community, which will be lost to facilitate the proposed development.



Construction impacts

The majority of the unimproved grassland on site will be lost to facilitate the proposed development.

Enhancements

A detailed Landscape and Ecology Management Plan (LEMP) will be completed and implemented in order to provide mitigation and compensation for the loss of unimproved grassland. Part of the existing site will be retained and enhanced, and part of the off-site semi-improved grassland with scattered scrub (within the applicant's ownership boundary) will be enhanced to promote the creation of a species rich lowland meadow.

Operational impacts

No operational impacts are envisaged.

4.2 Species

4.2.1 Amphibians

Although the presence of GCNs on site is considered unlikely, the works should still be completed under RAMs to ensure that common amphibian species are not affected by the works.

Construction impacts

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

Mitigation

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

- The grassland within the proposed development footprint should continue to be mown to have a sward length below 10cm to discourage amphibians from sheltering within the working area. The grassland will then be maintained with a short sward until the works on site have been completed
- No excavations are to be left open overnight. If this is not feasible, a plank should be left within the excavation at a 45° angle to allow amphibians (or other wildlife) to escape. Any open excavations should be checked for trapped amphibians (or other wildlife) in the morning prior to the start of works on site.
- All open excavations are to be checked for trapped wildlife immediately prior to backfilling.
- Where possible, materials will be stored on pallets off the ground in order to reduce the risk of amphibians sheltering underneath them.



- The off-site woodland immediately adjacent to the eastern boundary should remain unaffected by the works, to maintain shelter and connectivity within the wider landscape for amphibians and other fauna. The mitigation measures as detailed in Section 4.1.2 of this report, designed to protect the root protection area of the woodland, will also reduce the risk of harm to amphibians using the woodland to negligible levels.
- Any common frog *Rana temporaria* or common toad *Bufo bufo* observed within the working area of the site will be moved to an area of suitable habitat that lies outside of the working area. Suitable habitat could include the offsite hedgerow to the north.
- UES will remain on-call throughout the development, and if any newts are encountered work on site is to stop immediately and UES are to be contacted for advice on how to proceed. **UES can be reached on 01565 757788.**

Enhancements

In addition to the measures above, a LEMP will be produced for the site, which will detail ecological enhancement measures both on and off site, on immediately adjacent land owned by the applicant. The details of these enhancements have not been finalised at the time of writing but are likely to include the creation of a pond suitable for use by amphibians, including GCNs. Terrestrial habitats will also be managed to encourage use by amphibians.

Operational impacts

No operational impacts are envisaged.

4.2.2 Badger

The habitats on site are broadly suitable for foraging and commuting badgers. No evidence of badger setts was found on, or within the immediate vicinity of the site, however a single accumulation of badger faeces was observed in the southern section of the site, associated with a mammal path which bisects the site east to west. Therefore, badgers are present on site in a transitory capacity.

Construction impacts

Construction activities without mitigation could result in direct harm to badgers if using the site in a transitory capacity for foraging and commuting.

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 boards, or alternatively fitted with a means of escape for any badger (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°.



- Any pipes will be stored with caps on to prevent entry by badgers 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 badgers or other animals.
- Excavations will be checked immediately before they are backfilled to ensure that no animals have become trapped.

Operational impacts

No operational impacts are envisaged.

4.2.3 Bats

There are no buildings or trees on site that offer opportunities for roosting bats. The site provides foraging and commuting opportunities for bats, however the woodland near the site boundaries that provide higher quality habitat will be retained and unaffected by the development proposals.

Construction impacts

No construction impacts are envisaged.

Operational impacts

Inappropriate landscaping and lighting could result in the severing of commuting corridors used by bats as well as the degradation of foraging habitats.

Mitigation

To reduce the impacts upon bat commuting and foraging habitats, a bat friendly lighting scheme should be sensitively designed and should avoid light spill onto offsite habitats (see Appendix 5 for guidance on external lighting).

Enhancements

Landscaping proposals will be designed to improve habitats for bats using the site through the production of an LEMP. The details of these enhancements have not been finalised at the time of writing, but it will likely include the creation of a pond, and grassland restoration, which will improve foraging opportunities for bats locally.

The provision of bat boxes as part of the development proposals would increase the roosting opportunities for bats on site and would further increase the ecological value of the site. Bat boxes that could be used on site include:

- Schwegler 1FF box (affixed to buildings or off-site trees)
- Schwegler 2F box (affixed to buildings or off-site trees)

Bat boxes affixed to the external walls of buildings should be installed just below the eaves / roof height. Bat boxes affixed to trees should be orientated towards the southern aspect of the



tree and should be sited at a height of at least 3m. No detailed lighting proposals are available, however care must be taken when installing any new lighting to ensure that light spillage onto the bat boxes is minimised. This may require the use of cowling or relocation of the bat box or lighting.

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

4.2.4 Birds

The conditions observed during the site walkover, suggest that the majority of the site is unsuitable for breeding birds. However, if the grassland sward is not maintained at a short sward (less than 50cm), nesting suitability for warbler and other small passerine species is possible.

Construction impacts

If the vegetation grows to a height of greater than 50cm, vegetation removal could result in the direct loss of nests, any individuals within the nests and of available nesting territories if conducted during the breeding season.

Mitigation

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

- The grassland on site is to continue to be mown to have a sward length below 10cm to discourage birds from nesting within the working area. The grassland will then be maintained with a short sward until the works on site have been completed.
- If this is not possible, site clearance should be undertaken outside of the breeding bird season and should not be undertaken from March to August inclusive.
- If vegetation removal is required to take place during this period, a targeted breeding bird nest scoping survey should be conducted by a suitably qualified ecologist immediately prior to the works, or an ecological clerk of works appointed to oversee the works.

Operational impacts

Inappropriate management of the habitats on site could degrade them and render them unsuitable for wildlife.

Mitigation

It is important to implement good horticultural practice in any landscaping scheme, including the use of peat-free composts, mulches and soil conditioners. The use of pesticides (herbicides, insecticides, fungicides and slug pellets) should be discouraged to prevent fatal effects on the food chain. Any pesticides used should be non-residual.

Compensation and enhancement



Landscaping proposals will be designed to improve habitats for birds using the site, through the production of an LEMP. The details of these enhancements have not been finalised at the time of writing, but it will likely include the creation of a pond, and grassland restoration, which will improve foraging opportunities for bats locally.

Compensation for the loss of nesting habitat and the enhancing of the nesting habitat both on site and off site, in the immediately adjacent woodland, can also be provided through the provision of bird nest boxes. Bird boxes that could be used include:

- Schwegler 1SP sparrow terrace (affixed to building below the eaves)
- Schwegler 1B nest box (affixed to trees)
- Schwegler 3S starling nest box (affixed to buildings or trees)
- Schwegler 1MR Avianex box (affixed to buildings)

Bird boxes should be sited at a minimum height of three metres. The boxes should be oriented between north and east, thus avoiding strong sunlight and the wettest winds.



5 CONCLUSION

The development proposals are for the construction of commercial industrial unit, with associated access road and car parking. The proposed development footprint has an area of approximately 2.9ha, is comprised almost entirely of unimproved grassland. The applicant's ownership boundary is greater than the proposed development footprint, which offers potential for ecological enhancements.

The preliminary ecological appraisal has highlighted potential issues with the following ecological receptors on or adjacent to site: amphibians, badgers, bats, birds, plant communities and woodland. Provided these issues are addressed in accordance with the recommendations detailed in this report, the development may proceed without adversely impacting the ecological receptors detailed.



6 REFERENCES

CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal* (Second Edition).

DEFRA (2019). *MAG/C* [online]. Available at: <http://magic.defra.gov.uk/>.

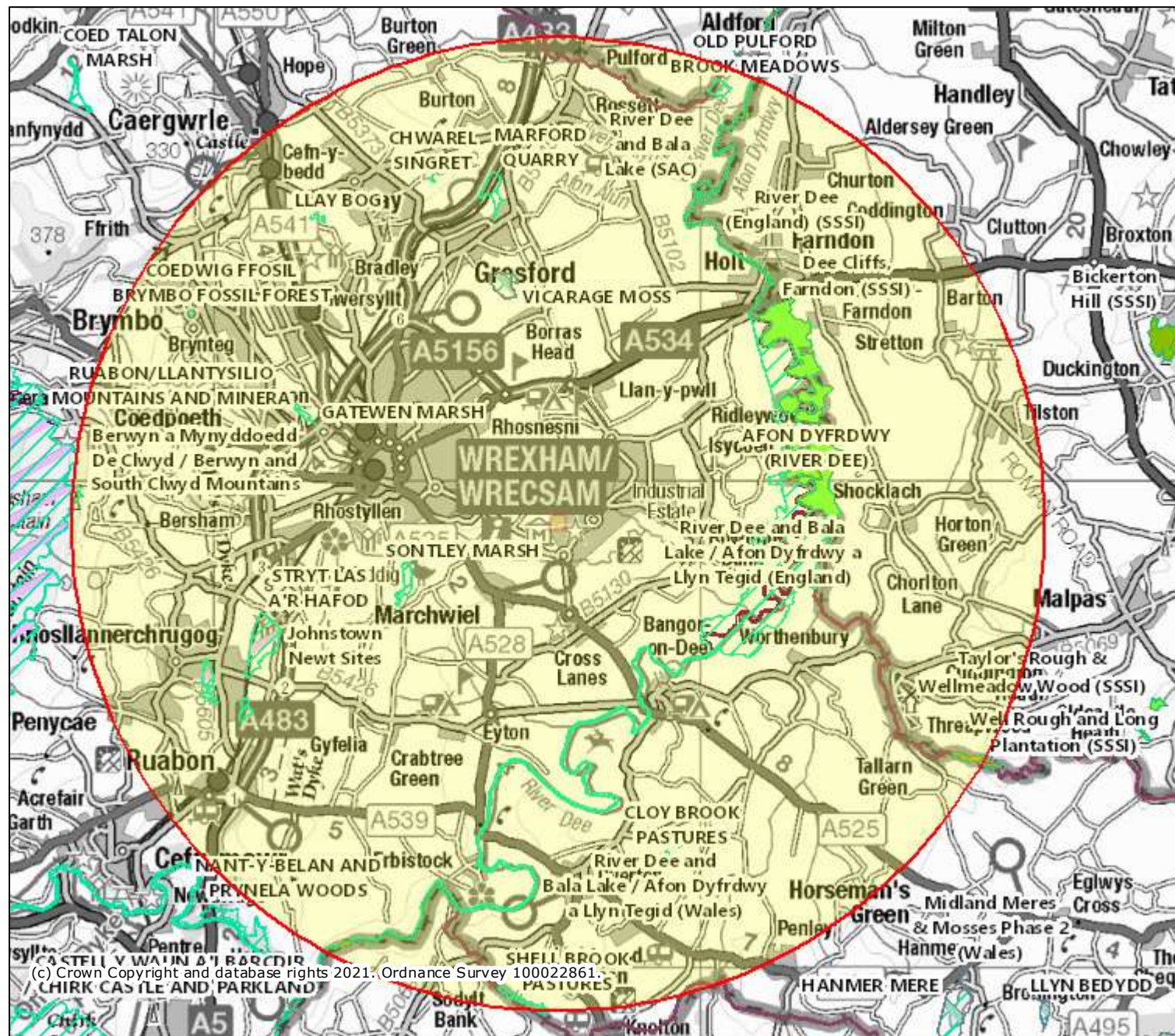
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APPENDICES

Appendix 1 – Desk study



Legend

- | | |
|---|--|
| Areas of Outstanding Natural Beauty (England) | Destroyed |
| Limestone Pavement Orders (England) | Not Assessed |
| Local Nature Reserves (England) - points | Sites of Special Scientific Interest (England) |
| Moorland Line (England) | Sites of Special Scientific Interest (Scotland) |
| National Nature Reserves (England) - points | Sites of Special Scientific Interest (Wales) |
| National Nature Reserves (Wales) - points | Special Areas of Conservation (England) |
| National Parks (England) | Possible Special Areas of Conservation (England) |
| Ramsar Sites (England) | Special Areas of Conservation (Wales) |
| Proposed Ramsar Sites (England) | Special Protection Areas (England) |
| Ramsar Sites (Wales) | Potential Special Protection Areas (England) |
| Sites of Special Scientific Interest Units (England) | |
| Favourable Condition | Special Protection Areas (Wales) |
| Unfavourable Recovering | Biosphere Reserves (England) |
| Unfavourable no change | Biosphere Reserves (Wales) |
| Unfavourable Declining | |
| Part Destroyed | |

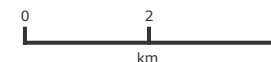
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xmin = 310500

ymin = 337300

xmax = 365200

ymax = 361000



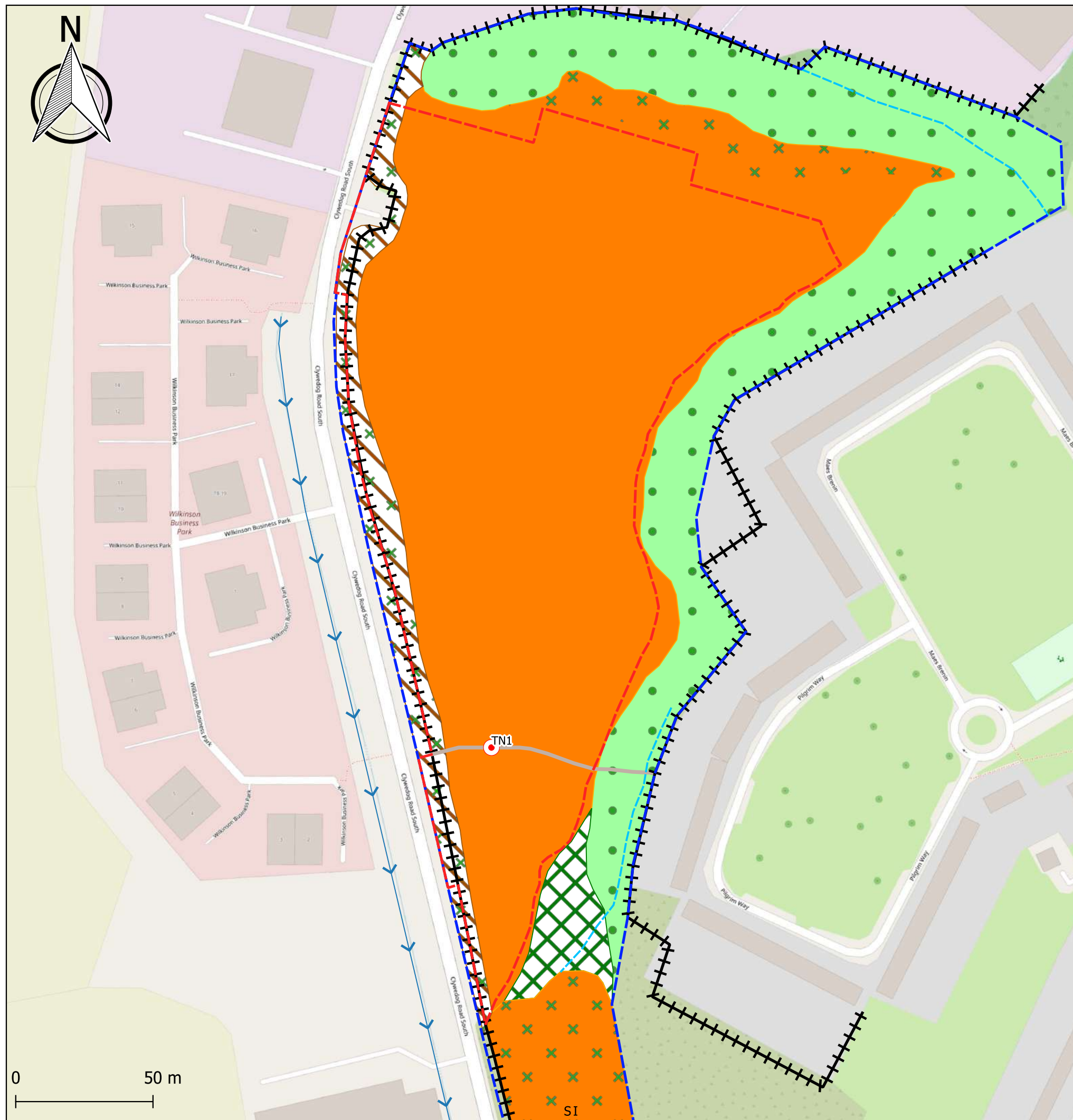
Map produced by MAGIC on 13 October, 2021.

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Appendix 2 – Phase 1 habitat plan

Target Note 1 – Badger faeces



Phase 1 habitat plan

Site: Plot 5B, Clywedog Road
 NGR: (SJ) 337079 349033
 Author: Alasdair Grubb
 Date: 14/10/2021



KEY:

- Development Boundary
- Site Ownership Boundary
- A1.3.1 - Mixed woodland - semi-natural
- A2.1 - Scrub - dense/continuous
- x A2.2 - Scrub - scattered
- B2.1 - Unimproved neutral grassland
- B2.2 - Semi-improved neutral grassland
- C3.1 - Ruderal tall herb and fern
- G2 - Running Water
- J2.4 - Fence
- J2.6 - Dry ditch
- Mammal path
- Target Notes

THIS PLAN IS BASED UPON OpenStreetMap® AND IS OPEN DATA, LICENSED UNDER THE OPEN DATA COMMONS OPEN DATABASE LICENCE (ODbL) BY THE OpenStreetMap FOUNDATION.

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Appendix 3 – Aerial photographs



**Plot 5B,
Clywedog Road South**

Close aerial photograph

- Development boundary
- Ownership boundary



**Plot 5B,
Clywedog Road South**

Wide aerial photograph



Site location



Appendix 4 – Photographs



Photo 1. Facing south from the northern section of the site, across the mown, unimproved grassland, which dominates the proposed development site.



Photo 2. Facing east, across the northern boundary of the proposed development footprint.



Photo 3. Facing south across the eastern boundary of the proposed development footprint.



Photo 4. Facing south-west across the unmown, unimproved grassland, which is located outside of the proposed development footprint, but within the applicant's ownership boundary.



Photo 5. Showing the dry ditch, which is located north of the proposed development footprint, which runs through a section of woodland, within the applicant's ownership boundary.



Photo 6. Showing the mammal path which is located in the southern section of the proposed development footprint.



Photo 7. Showing the badger faeces which was found associated with the mammal path shown in Photo 6.



Photo 8. Showing the open drainage ditch which runs north to south to the west of the site, beyond Clywedog Road South.



Appendix 5 – 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.



Appendix 6 – 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

Great crested newts

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.