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PRELIMINARY ECOLOGICAL APPRAISAL

At

Dragon Packaging

47- 48 Clywedog Road North
Wrexham Industrial Estate
Wrexham
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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 Dragon Packaging, 47 - 48 Clywedog Road North, which is located within the Wrexham Industrial Estate, south-east of Wrexham. UES have been commissioned to undertake a desk study and preliminary ecological appraisal (PEA) survey, including searches using the North Wales Environmental Information service (COFNOD) and the Multi Agency Geographic Information Centre (MAGIC). The site walkover survey was undertaken on 8th November 2021.

The PEA provides an assessment of potential ecological impacts associated with the development of the land parcel. The development proposals are for the construction of up to four small commercial units, with associated access road and car parking. The proposed development footprint has an area of 0.3ha and comprises a large area of amenity grassland and a small area of hardstanding and dense scrub. However, habitats present in the wider survey area include dense scrub and scattered trees.

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** – Although the presence of great crested newts (GCNs) *Triturus cristatus*, common amphibians and reptiles on site is considered unlikely, due to the proximity of the development site to suitable habitat, reasonable avoidance measures (RAMs) are 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 areas of dense scrub and scattered trees.
- **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. A bird friendly landscaping scheme should be designed to compensate for the loss of bird foraging and nesting habitat.
- **Trees** – generic issues relating to root protection areas (RPAs) of trees located immediately adjacent to the proposed site boundary.

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. Wildlife friendly landscaping will also enhance biodiversity value of the development

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 Emily Clark BSc PGdip ACIEEM, UES Senior Ecologist. Emily holds a level 4 Botanical Society for Britain and Ireland (BSBI) field identification skills certificate (FISC), which certifies her 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 Dragon Packaging, 47 - 48 Clywedog Road North, which is located within the Wrexham Industrial Estate, south-east of 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 November 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 are for the construction of up to four small commercial units, with associated access road and car parking.

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 – 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 8th November 2021 by Emily Clark. 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 in November when not all plants are readily identifiable. However sufficient vegetative identification was possible, allowing a robust assessment of habitats to be undertaken.

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. There are two 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 located approximately 230m north-west of the proposed development site boundary. The LWS is a series of broadleaved woodlands within Cefn Park Estate, covering 11.2 hectares. Big Wood 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.*
- 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.

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

- | | |
|--|--|
| • Berwyn a Mynyddoedd De Clwyd / Berwyn and South Clwyd Mountains SAC ² | • Old Pulford Brook Meadows SSSI |
| • Cloy Brook Pastures SSSI ³ | • River Dee / Afon Dyfrdwy SSSI |
| • Gatewen Marsh SSSI | • River Dee and Bala Lake SAC |
| • Johnstown Newt Sites SAC | • Ruabon / Llantysilio Mountains and Minera SSSI |
| • Llay Bog SSSI | • Sontley Marsh SSSI |
| • Marford Quarry SSSI | • Stryt Las A'r Hafod SSSI |
| • Midlands Meres and Mosses Phase 2 – Ramsar | • 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.

¹ LWS – Local Wildlife Site

² SAC – Special Area of Conservation

³ SSSI – Site of Special Scientific Interest

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 ditch 110m to the west of the site, which was surveyed in 2010 and found a GCN egg, confirming a breeding population of GCN is present. Records 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 *Meles meles* were returned from within 2km of the proposed development site, including records of active setts, field signs and badger sightings. The closest is for a sett is located to the south-west of the site and is from 2020, but the record provided with a two-figure grid reference and hence the distance from the site cannot accurately be determined.
- 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, the closest of which was for a BLE roost (one bat) located approximately 550m east of the site, recorded in 2020. 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 records of dingy skipper *Erynnis tages* and grizzled skipper *Pyrgus malvae*.
- 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 located approximately 480m east 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 800m east of the proposed development site and details a sub-adult filmed on a trail camera 2019.
- 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 east of the site. Two records of grass snake *Natrix natrix* were returned from within 2km of the proposed development site, closest is for a single adult in 2018, located approximately 800m to the north-west of the proposed development site. A single common lizard *Zootoca vivipara* was recorded 1.2km to the north-east 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. A complete botanical species list is shown at Appendix 5 – Botanical species list.

The proposed development site is situated in the south-western section 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:

- A2.1 Scrub – dense/continuous
- A3.1 Broadleaved scattered trees
- J1.2 Amenity grassland
- J2.6 Dry ditch
- J5 Hardstanding

3.2.1 A2.1 Scrub – dense/continuous

There is an area of dense scrub within the northern section of the site, see Appendix 4, Photographs, Photographs 1 and 2. The most frequent species present are bramble *Rubus fruticosus* and blackthorn *Prunus spinosa*. However, other species present include: harts tongue fern *Asplenium scolopendrium*, scaley male fern *Dryopteris affini*, broad buckler fern *Dryopteris dilatata*, young ash *Fraxinus excelsior* trees, creeping thistle *Cirsium arvense*, hawthorn *Crataegus monogyna*, Norway maple *Acer platanoides*, ivy *Hedera helix*, rosebay willowherb *Chamaenerion angustifolium*, osier *Salix viminalis*, willow species *Salix sp.* spindle *Euonymus europaeus*, dog rose *Rosa canina*, Yorkshire fog *Holcus lanatus*, stinging nettle *Urtica dioica*, spear thistle *Cirsium vulgare*, herb Robert *Geranium robertianum*, selfheal *Prunella vulgaris*, common mouse ear *Cerastium fontanum*, Canadian fleabane *Erigeron canadensis*, St John's wort *Hypericum perforatum*, young silver birch *Betula pendula*

3.2.2 A3.1 Broadleaved scattered trees

There are a number of semi-mature trees within the survey boundary, but located immediately outside the proposed development boundary.

Within the northern section of the site, there is one mature pedunculate oaks *Quercus robur* in the western corner of the site and three rowan *Sorbus sp.* trees and two ornamental sycamore *Acer sp.* trees (Photograph 3).

Within the southern section of the site, there are five mature trees along the western survey boundary, including two ash trees, one cherry *Prunus sp.* tree, one Norway maple, and one ornamental sycamore tree, see Photograph 4. Furthermore, there is willow tree species in the south-eastern corner of the site.

3.2.3 J1.2 Amenity grassland

There are two large areas of intensively mown amenity grassland, which cover the majority of both the northern and southern sections of the site (Photographs 1 – 4). Species present include annual meadow grass *Poa annua*, perennial rye grass *Lolium perenne*, white clover *Trifolium repens*, hairy bittercress *Cardamine hirsuta*, willowherb *Epilobium* species, common dandelion *Taraxacum officinale* agg., red fescue *Festuca rubra*, bristly oxtongue *Helminthotheca echinoides*, dovesfoot cranesbill *Geranium molle*, field woodrush *Luzula campestris*, bramble, common ragwort *Jacobaea vulgaris*, herb robert *Geranium robertianum*, common daisy *Bellis perennis*, cowslip, creeping buttercup *Ranunculus repens*.

3.2.4 J2.6 Dry ditch

There is a dry ditch which present within the northern section of the site, located along the north-western survey boundary (Photograph 5), but immediately adjacent to the proposed development site boundary. The ditch has been encroached from the surrounding dense scrub and there are no marginal or aquatic species present, suggesting it has been dry for some time. The banks are still relatively steep, and it is approximately 1m wide and there are small amounts of litter / debris in the base of the open ditch, such as car tyres and sheets of plastic.

3.2.5 J5 Hardstanding

There is a small section of hardstanding (concrete) within the northern section of the site (Photograph 6), immediately adjacent to the offsite building.

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 within 2km of the proposed development site, the closest of which is from a ditch 110m to the west of the site. A single mapped pond lies within 250m of the proposed development boundary, located approximately 95m west of the proposed development site. This pond appears to be used as part of a domestic-fowl enclosure, with poor water quality and lacking in aquatic vegetation (Photograph 7). There is also a mapped ditch located approximately 145m west of the proposed development site, which could not be accessed during the site walkover survey. Local records show that a breeding population of GCNs was present within this ditch in 2019. The site is connected to the pond and ditch via dense scrub and trees.

The habitats within the survey boundary are broadly suitable for foraging amphibians, including GCNs. The areas of scrub, trees, and dry ditch, particularly within the northern section of the survey boundary will provide sheltered foraging and commuting opportunities for amphibians. However, habitats which will be directly impacted by the proposed development include intensively mown amenity grassland, hardstanding and a small area of dense scrub, which will provide limited opportunities for amphibians.

Due to the presence of a small amount of suitable terrestrial habitat which will be impacted on site, proximity to areas of suitable terrestrial habitat (dense scrub, dry ditch and scattered trees) and the relative proximity to known breeding populations, it is possible that GCNs and other common amphibians are present within the northern section of the site.

3.3.2 Reptiles

The habitats within the survey boundary are broadly suitable for common reptile species. The areas of scrub, trees, and dry ditch, particularly within the northern section of the site will provide sheltered basking, foraging and commuting opportunities for reptiles. However, habitats which will be directly impacted by the proposed development include intensively mown amenity grassland and hardstanding, which provide limited opportunities for reptiles.

Although local records show that reptiles are present within 2km of the site, no records were returned from within 1km of the site. Furthermore, the site is relatively isolated from other areas of suitable reptile habitat by areas of hardstanding and buildings; the habitats within the immediate vicinity of the site are considered to be of low quality for reptiles. Therefore, it is considered unlikely that the site is used by reptiles.

3.3.3 Badger

Numerous records of badgers were returned from within 2km of the proposed development site, including records of active setts, field signs and badger sightings. However, no evidence or field signs of badgers was found on or within the immediate vicinity of the proposed development site boundary, however local records show that badgers are known to be present within the local area. No holes or excavations consistent with badger were found during the walkover survey, and it is considered that there are no badger setts on or within the immediate vicinity of the proposed development site.

The habitats within the proposed development area comprise intensively mown amenity grassland and hardstanding. These habitats are broadly unsuitable for use by badger as they provide very limited and poor-quality foraging, commuting and sett building opportunities. Habitats within the wider survey boundary, including areas of dense scrub are of slightly higher quality. Large areas of higher quality badger habitat are present within the surrounding landscape, including areas of broadleaved woodland. Therefore, it is considered the site may be used by badgers transiently.

3.3.4 Bats

There are no buildings on site, but there is one building immediately adjacent to the site, see Photograph 8. The building is a large warehouse, constructed from corrugated metal sheeting and brick. The building has pitched roofs, clad with corrugated metal sheet. The sections of

the building within the immediate vicinity of the proposed site boundary were inspected and no potential roosting features were identified.

The semi-mature trees within the survey boundary were subjected to a full ground level assessment with regard to suitability for bats. One wound was recorded on the northern aspect of a Norway maple tree within the southern section of the site, see Phase 1 Habitat Plan, Target Note 1 and Photographs 9 and 10. However, on closer inspection with a high powered torch and binoculars, the feature was found to be superficial and is considered to have negligible potential. No other potential roosting features were found within the other trees within the survey boundary.

The areas of dense scrub and scattered trees, particularly within the northern section of the site, are considered to provide some foraging and commuting opportunities for bats. However, it is anticipated that these habitats will be retained as part of the proposals. The areas of which will be directly impacted comprise intensively mown amenity grassland and hardstanding, which will provide very low quality foraging and commuting opportunities for bats.

Habitats in the immediate surrounding area are similar in composition, with large areas of buildings and well-lit roads to the east, south and west. However, habitats to the north are of due to the presence of a green corridor and hedge-lined arable fields. Furthermore, Redwither Brook and a large block of deciduous woodland is located approximately 220m north-west of the site, which will provide higher quality foraging and commuting opportunities for bats

3.3.5 Hazel dormouse

The proposed development site is dominated by habitats which are unsuitable for hazel dormice *Muscardinus avellanarius* (amenity grassland). There is a small area of dense scrub present, however they are lacking in sufficient size and density of sufficient quantities of key species required, such as hazel *Corylus avellana* and honeysuckle *Lonicera periclymenum*. Furthermore, local records data show no records of hazel dormouse within 2km of the proposed development site.

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 walkover, the following bird species were recorded using the site: goldfinch *Carduelis carduelis*, dunnock *Prunella modularis*, blue tit *Cyanistes caeruleus* and robin *Erithacus rubecula*. All of these species were observed to be using the dense scrub vegetation on site for foraging purposes.

The areas of dense scrub and mature trees will support a variety of nesting bird species in summer. However, these habitats are anticipated to be retained as part of the development proposals. The areas of amenity grassland and hardstanding, which will be directly impacted by the proposals offer limited opportunities for nesting birds.



3.3.7 Trees

There are no tree species within the proposed development boundary which are afforded statutory protection. It is unknown as to whether the few trees which are present are protected by local legislation (such as tree preservation orders).

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

No plant communities or individual species were recorded on site which are afforded statutory protection in their own right.

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

There is a dry ditch which present within the northern section of the site, located along the northern survey boundary, but immediately adjacent to the proposed development site boundary. The ditch has been encroached from the surrounding dense scrub and there are no marginal or aquatic species present, suggesting it has been dry for some time. Therefore, the ditch is unsuitable to support fish and is largely unsuitable for otter.

Furthermore, the ditch is anticipated to be retained as part of the development proposals. The habitats within the proposed development area comprise intensively mown amenity grassland and hardstanding, which are unsuitable for use by otter. These habitats are broadly unsuitable for use by otter.

Local records show that otters have not been recorded within 1km of the site. The site is isolated from other suitable habitats by areas of hardstanding and buildings. Therefore, taking into account the absence of field signs and low suitability of habitat within the survey area and unsuitability of the habitats which will be impacted by the proposals, it is considered unlikely that otters are present on or within the vicinity of the site.

3.3.12 Water vole

There is a dry ditch which present within the northern section of the site, located along the northern survey boundary, but immediately adjacent to the proposed development site boundary. The ditch has been encroached from the surrounding dense scrub and there are no marginal or aquatic species present, suggesting it has been dry for some time. Therefore, the ditch is generally considered to be unsuitable to support water vole. Furthermore, local records show that water voles have not been recorded within 2km of the proposed



development site. Therefore, water voles are not considered to be present on site or within the immediate vicinity of the site.

3.3.13 White-clawed crayfish

There is a dry ditch which present within the northern section of the site, located along the northern survey boundary, but immediately adjacent to the proposed development site boundary. The ditch has been encroached from the surrounding dense scrub and there are no marginal or aquatic species present, suggesting it has been dry for some time. Therefore, the ditch is generally unsuitable for white-clawed crayfish. Furthermore, white-clawed crayfish have a limited distribution nationally, limited to specific river system and this species is not known to be present locally, as confirmed by the local records search conducted.

White-clawed crayfish are not considered to be 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 500m 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 Trees

There are a number of trees within the survey boundary, the majority of which fall outside of the proposed development boundary.

Construction impacts

Construction activities too close to the RPAs of trees could cause permanent damage.

Mitigation

RPAs should be established and implemented around the trees which are to be retained. Works should be mindful of the RPAs, and where necessary, these areas should be adequately protected by appropriately designed protective barriers and ground protection throughout the entire development process.

Compensation

If any trees are to be removed, they should be replaced accordingly as part of a detailed landscaping scheme, with only native species to be planted.

Operational impacts

No operational impacts are envisaged.

4.2 Species

4.2.1 Amphibians and reptiles

Although the presence of GCNs, common amphibians and reptiles on site is considered unlikely, due to the proximity of the development site to suitable habitat, the works should still be completed under RAMs to ensure that reptiles and other 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 amenity grassland on site is to continue to be mown or grazed to have a sward length below 5cm. The grassland is to be maintained with a short sward until the works on site have been completed.
- Prior to commencement of works which will impact the areas of dense scrub, a toolbox talk will be given by an ecological clerk of works (ECoW) to all staff and contractors. The talk will include species identification, ecology and legal protection of UK amphibians and reptiles. The ECoW will be a suitably experienced and licenced ecologist.
- Prior to commencement of works which will impact the areas of dense scrub, the ECoW will fingertip search the areas of dense scrub within the proposed work area and within 2m of the work area. If any reptiles or common amphibians are found to be present within the working area, they will be translocated to an area of nearby suitable habitat, off site. **If any GCNs are found to be present within the working area, the works on site are to stop immediately and the requirement for an EPS licence from Natural Resources Wales will be determined. If required, works will not commence until a licence has been secured.**
- Following confirmation from the ECoW that the areas of dense scrub are clear of amphibians and reptiles, the areas of dense scrub should be mown to have a sward length below 10cm to discourage amphibians and reptiles from sheltering within the working area. The areas will then be maintained with a short sward until the works on site have been completed.
- Any potential hibernacula created on site as part of the works will be removed from the working area by hand opposed to using machinery. Hibernacula could include piles of rubble, bricks, debris, brash piles etc. Potential hibernacula should not be burnt on site unless it has been completely dismantled and checked for sheltering wildlife immediately prior to burning.
- 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, reptiles and other



wildlife to escape. Any open excavations should be checked for trapped wildlife in the morning prior to start of works on site.

- Materials will be stored on pallets off the ground in order to reduce the risk of amphibians and reptiles sheltering underneath them.
- The trees and majority of the dense scrub along the north-western survey boundary will not be impacted, to continue to provide shelter and connectivity across site for amphibians and other fauna.
- UES will remain on-call throughout the development and if any newts or reptiles are encountered, work on site is to stop immediately and ecological advice is to be sought. UES can be contacted directly on **01565 757788**.

If the proposals are changed and any trees or large areas of dense scrub are to be impacted by the proposals, the method statement and the need for further surveys will be reviewed.

Operational impacts

No operational impacts are envisaged.

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



- Excavations, including the enclosed culverts on site, will be checked immediately before they are backfilled / closed up, 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, and the habitats which will be impacted (amenity grassland, hardstanding and small amount of dense scrub) provide low quality foraging and commuting opportunities. However the habitats adjacent to the north-western site boundary provide foraging and commuting opportunities for bats.

Construction impacts

Vegetation clearance works associated with the development will result in the loss of foraging habitats and commuting routes for bats in the local area.

Enhancement

Consideration should be given to enhancing the habitats on site for foraging and commuting bats by incorporating native species tree, shrub or scrub planting as part of the landscaping proposals.

Landscaping can also be used to promote biodiversity through the appropriate design of habitats and creating habitat mosaics, which promote natural linkages and hence the dispersal of target species. Principles and landscaping ideas beneficial to wildlife and relevant to this site include:

- Planting and management of hedgerows
- Planting of berry and nut bearing shrub species to encourage winter birds
- Planting and management of shrubs which develop a mosaic of structures to support breeding birds
- Use of nectar bearing flowers to encourage invertebrates (such as bees, flies, beetles and butterflies)

Species are to be native, of local provenance or to have a proven benefit to biodiversity. Further information can be found at Appendix 5 – Landscape design.

Operational impacts

Inappropriate 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 6 for guidance on external lighting).



Enhancements

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 2FR bat tube (built into buildings)

Bat boxes affixed to / integrated into 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 cowlings 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 small areas of scrub within the proposed development boundary is suitable for use by a variety of nesting bird species.

Construction impacts

Vegetation removal or any additional tree felling and arboricultural works 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

Site clearance and vegetation removal and any additional tree felling or arboricultural 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, a targeted breeding bird nest scoping survey should be conducted prior to the start on site or an ecological clerk of works appointed.

Enhancement

Landscaping can also be used to promote biodiversity through the appropriate design of habitats and creating habitat mosaics, which promote natural linkages and hence the dispersal of target species. Principles and landscaping ideas beneficial to wildlife and relevant to this site include:

- Planting and management of hedgerows
- Planting of berry and nut bearing shrub species to encourage winter birds
- Planting and management of shrubs which develop a mosaic of structures to support breeding birds
- Use of nectar bearing flowers to encourage invertebrates (such as bees, flies, beetles and butterflies)



Species are to be native, of local provenance or to have a proven benefit to biodiversity. Further information can be found at Appendix 7 – Landscape design.

Furthermore, nesting habitat on site can also be enhanced through the provision of bird nest boxes. At the time of writing this report no detailed plans are available, but bird boxes that could be used on site include:

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

Bird boxes should be sited at a minimum height of three metres. Unless there are trees which shade the box during the day, the boxes should be oriented between north and east, thus avoiding strong sunlight and the wettest winds.

Operational impacts

No operational impacts are envisaged.



5 CONCLUSION

The development proposals are for the construction of up to four small commercial units, with associated access road and car parking. The proposed development footprint has an area of 0.3ha and comprises a large area of amenity grassland and a small area of hardstanding and dense scrub. However, habitats present in the wider survey area include dense scrub and scattered trees.

The preliminary ecological appraisal has highlighted potential issues with the following ecological receptors on or adjacent to site: amphibians, badgers, bats, birds, GCN and trees. 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). *MAGIC* [online]. Available at: <http://magic.defra.gov.uk/>.

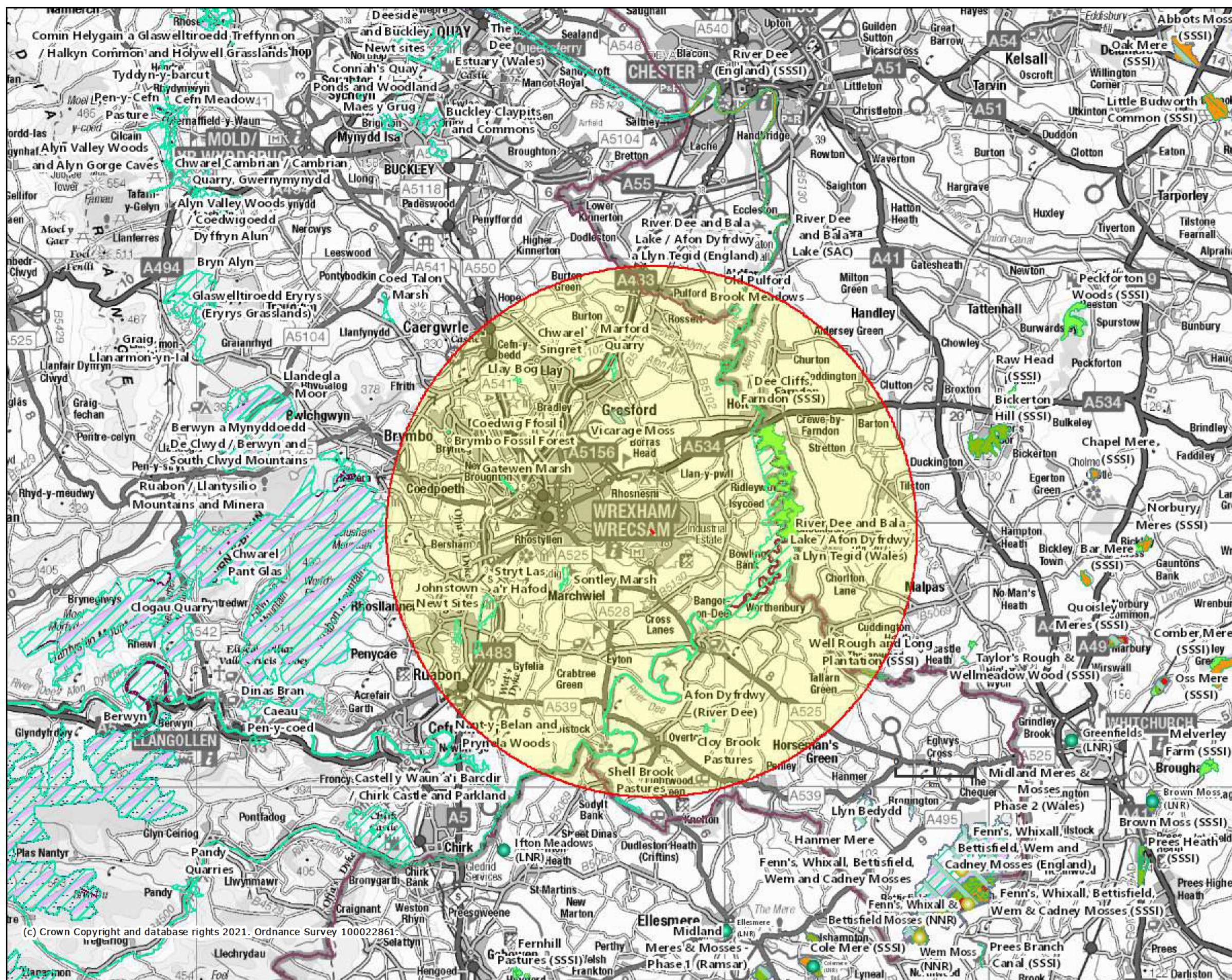
JNCC (2010). *Handbook for Phase 1 habitat survey: A technique for environmental audit*.

Welsh Government (2018). *Planning Policy Wales*, Edition 10.



APPENDICES

Appendix 1 – Desk study



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 (Scotland)
- ▭ Ramsar Sites (Wales)

Sites of Special Scientific Interest (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)

- ▭ Biosphere Reserves (England)
- ▭ Biosphere Reserves (Wales)

Projection = OSGB36

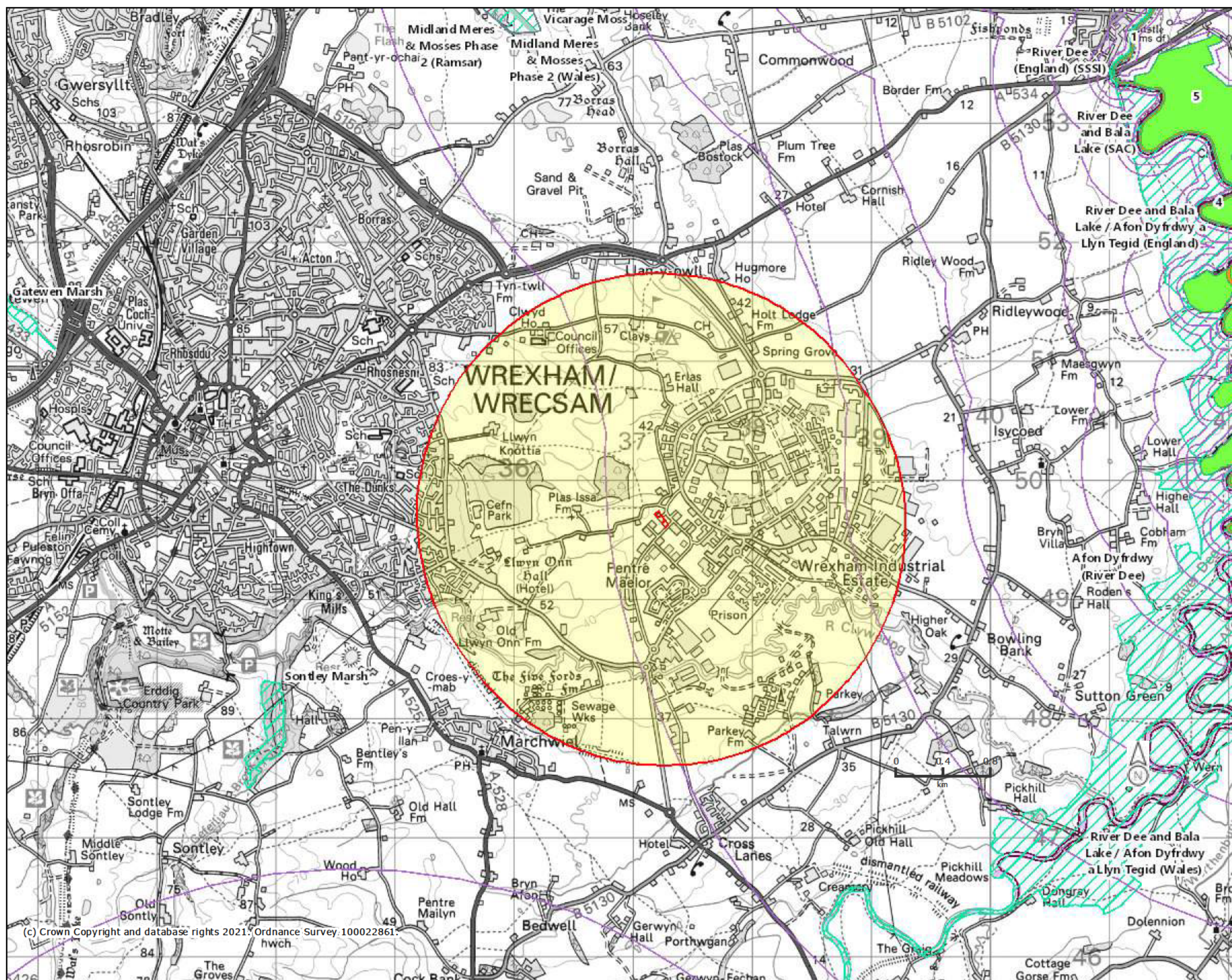
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ymin = 338900

xmax = 360900

ymax = 363200

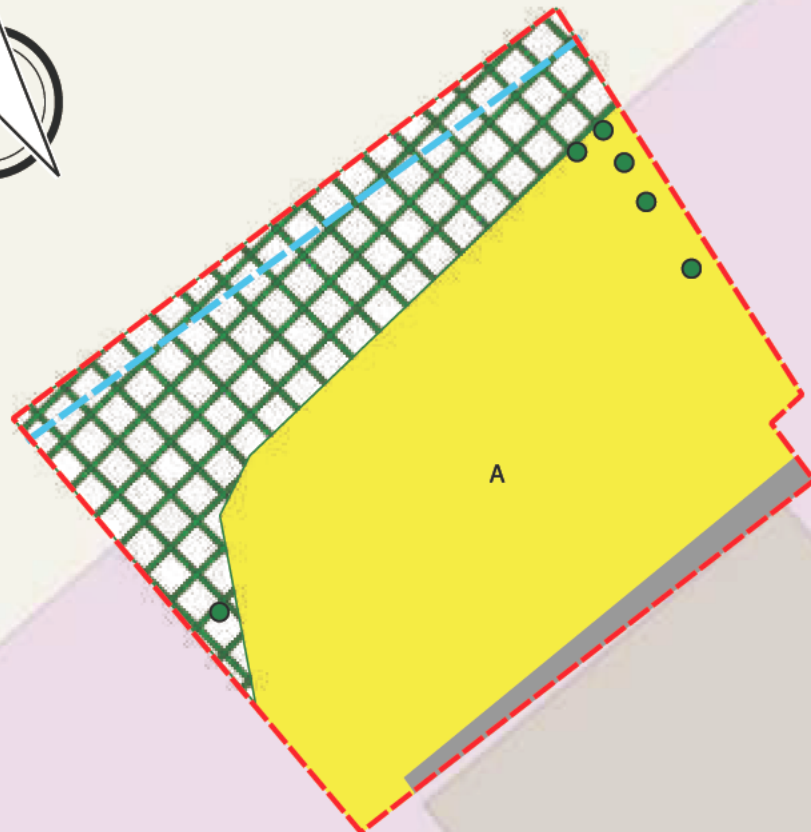
Map produced by MAGIC on 14 December, 2021.
Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGIC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.





Appendix 2 – Phase 1 habitat plan

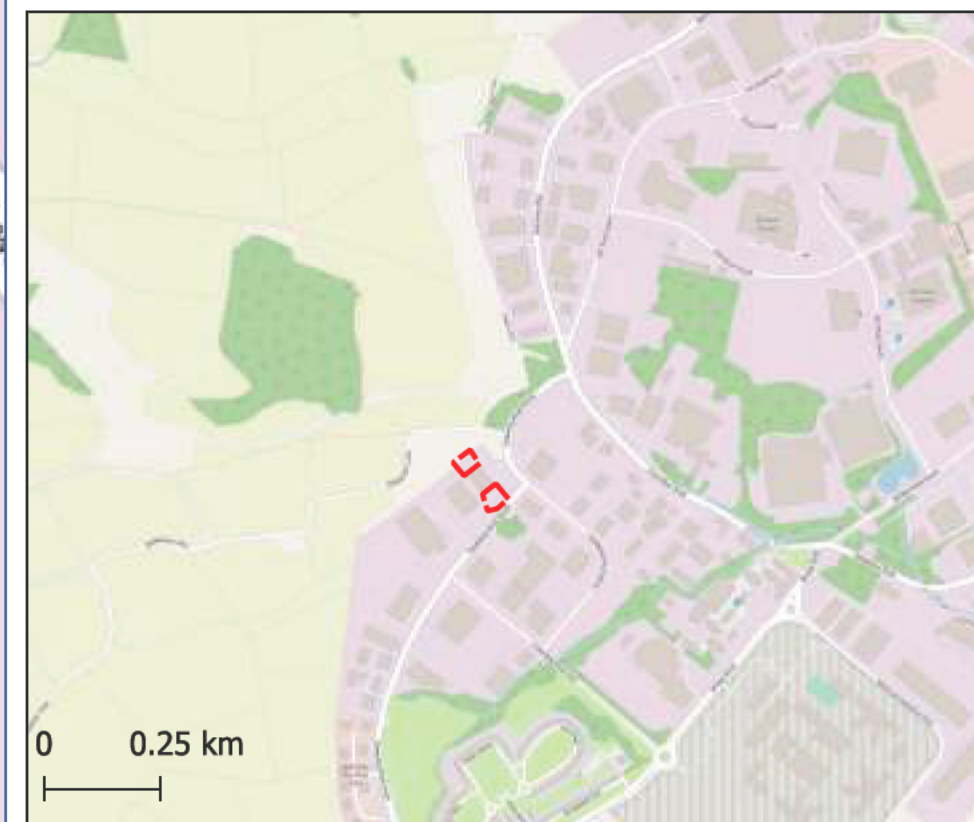
Target Note 1 – Tree with negligible potential roosting feature for bats.



0 25 m

Preliminary Ecological Appraisal

Site: Dragon Packaging,
Wrexham
NGR: (SJ) 337236 349681
Author: Emily Clark
Date: 13/12/21



KEY:

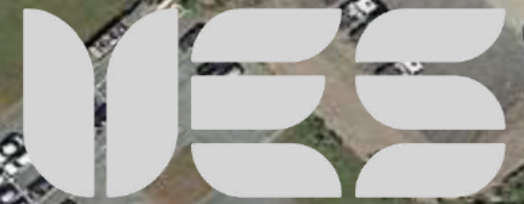
- Survey boundary
- A2.1 - Scrub - dense/continuous
- A3.1 Broadleaved scattered trees
- A J1.2 - Amenity grassland
- J2.6 Dry ditch
- J5 - Hardstanding
- Target notes

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

THIS PLAN IS ISSUED BY UNITED ENVIRONMENTAL SERVICES LTD SUBJECT TO THE CONDITION THAT IT IS NOT COPIED EITHER IN WHOLE OR IN PART OR DISCLOSED TO THIRD PARTIES UNLESS PRIOR WRITTEN AUTHORISATION IS GIVEN.



Appendix 3 – Aerial photographs



Dragon Packaging, Wrexham

Close aerial photograph

— Survey boundary





Dragon Packaging, Wrexham

Wide aerial photograph



Site location





Appendix 4 – Photographs



Photograph 1 – View of northern section of the site, looking west.



Photograph 2 – View of dense scrub and dry ditch along north-western site boundary.



Photograph 3 – View of the northern section of the site, looking east.



Photograph 4 – View of the southern section of the site and view of scattered trees.



Photograph 5 – View of dry ditch.



Photograph 6 – View of hardstanding within the northern section of the site.



Photograph 7 - Showing the single off-site pond which lies within 250m of the proposed development site



Photograph 8 – View of building immediately adjacent to the proposed development site boundary.



Photograph 9 – View of Norway maple with potential roosting feature.



Photograph 10 – Close view of potential roosting feature, found to be superficial when viewed with high powered torch and binoculars.



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 – Landscape design

SPECIES	F	SIZE				LOCATION			SOIL MOISTURE	BENEFITS TO WILDLIFE
		T	S	M	L	H	W	Su/Sh		
TREES										
Alder*	D			Y				Su	M	Seed food for birds
Beech*	D			Y	Y	Y		Su	D	Seed food for birds
Birch*	D		Y	Y	Y			Su	D	Seed food for birds
Bird cherry *	D			Y	Y			Su	D	Food for birds, flowers attract insects
Crab apple*	D		Y	Y	Y			Su	D	Food for birds, flowers attract insects
English oak*	D				Y			Su	D	Food for birds, insects and mammals, nesting sites
European larch*	D				Y			Su	M	Seed food for birds
Holly*	E		Y	Y	Y	Y		Su	D	Fruits eaten by birds, food plant of holly blue butterfly
Juniper*	E							Su	D	Shelter and nest sites, fruits eaten by thrushes
Lime*	D				Y	Y		Su	D	Seed food for birds
Rowan*	D			Y	Y			Su	D	Fruits eaten by birds
Scot's pine*	E				Y			Su	D	Seed food for birds
Swedish whitebeam	D		Y	Y	Y			Su	D	Food for birds, flowers attract insects
Wild cherry*	D			Y	Y			Su	D	Food for birds, flowers attract insects
Yew*	E		Y	Y	Y	Y		Su	D	Food for birds, nesting sites
SHRUBS										
Barberry	B	Y	Y	Y	Y	Y		Su	D	Good shelter and nest cover for birds, berries may provide food
Blackthorn*	D			Y	Y	Y		Su	M	Attracts insects, food for birds, nesting sites
Buckthorn*	D			Y	Y	Y		Su/Sh	D	Food plant of brimstone butterfly, fruits eaten by birds
Butterfly bush	E	Y	Y	Y	Y	Y		Su	D	Attracts insects
Californian lilac	E			Y	Y	Y	Y	Su	D	Flowers attractive to various insects
Dogwood*	D			Y	Y	Y		Su	D	Food for birds, winter stem colour
Elder*	D		Y	Y	Y	Y		Su	D	Food for birds
Escallonia	E			Y	Y	Y		Su	M	Flowers attractive to various insects, tolerant of salt - good in coastal areas
Field maple*	D		Y	Y	Y	Y		Su	D	Good source of insect food for birds
Firethorn	E	Y	Y	Y	Y	Y	Y	Su	D	Berries popular with many bird species
Flowering current	D		Y	Y	Y			Su	D	Early flowers attractive to insects
Forsythia	D		Y	Y	Y	Y	Y	Su	D	Early flowers attractive to insects
Garria	E	Y	Y	Y	Y		Y	Su	D	Winter catkins, early cover for nesting birds
Goat willow*	D	Y	Y	Y	Y			Su	D	Catkins attractive to bees, good source of insect food for birds
Gorse*	E			Y	Y	Y		Su	D	Early flowers attractive to insects, good protection for birds
Rhytismatales	E			Y	Y	Y		Su	D	Good cover, tolerant of salt - good in coastal areas
Guelder-rose*	D			Y	Y	Y		Su	D	Food for birds & insects
Hawthorn*	D		Y	Y	Y	Y		Su	D	Flowers attractive to insects, fruits eaten by birds, good shelter and nesting site
Hazel*	D	Y		Y	Y	Y		Su	D	Food for birds, insects and mammals, nesting sites
Laurel-leaved vibumum	E		Y	Y	Y			Su	D	Early flowers good for insects, good cover for birds

Lavender	E	Y	Y	Y	Y	Su	D	Flowers attract many insects, seeds popular with finches		
Lilac	D	Y	Y	Y		Su	D	Flowers attractive to insects		
Oregon grape	E		Y	Y	Y	Su/Sh	M	Early flowers good for insects		
Pheasant berry	E		Y	Y		Su	D	Berries popular with many bird species		
Privet*	E		Y	Y	Y	Y	Su	D	Flowers attract butterflies, produces berries	
Rose	D	Y	Y	Y	Y	Y	Su	D	Fruits of some varieties attractive to birds	
Rosemary	E	Y	Y	Y	Y	Y	Su	D	Flower attract many insects	
Shad bush	D		Y	Y			Su	M	Flowers attract insects, early forming berries good for thrushes	
Snowberry	D		Y	Y	Y		Su/Sh	D	Flowers attractive to bees, fruits attractive to birds, dense stems provide cover	
Spindle*	D		Y	Y	Y		Su	D	Berries eaten by birds, but poisonous to mammals	
Tamarix	D		Y	Y	Y		Su	D	Flowers attractive to various insects, tolerant of salt - good in coastal areas	
CLIMBERS & RAMBLERS										
Bramble*	D		Y	Y	Y	Y	Y	Su/Sh	D	Food for birds, insects and mammals, nesting sites
Clematis	D	Y	Y	Y	Y			Su	D	Nesting sites
Honeysuckle*	D	Y	Y	Y	Y	Y	Y	Su/Sh	D	Attractive to insects, good nesting site, food for birds
Ivy*	E	Y	Y	Y	Y	Y	Y	Su/Sh	D	Attractive to insects, good nesting site, food for birds
Rose	D	Y	Y	Y	Y	Y	Y	Su	D	Fruits of some varieties attractive to birds
Winter jasmin	E	Y	Y	Y	Y	Y	Y	Su	D	Early flowers attractive to insects
Wisteria	D	Y	Y	Y	Y		Y	Su	D	Attractive to insects, good nesting site

KEY			
*	Native (NB: some varieties are cultivars or non-native)	Location	H = may be used as a hedge plant
F	D = Deciduous		W = may be used as a wall shrub
Foliage type	E = Evergreen		Su = Sunny borders
	B = Both		Sh = Shade tolerant
Size	T = Terraces & balconies		Su/Sh = Grows in partial shade
Suitable for garden sizes	S = Small garden (<= 6m x 4m)	Soil moisture	D = Well drained
	M = Medium gardens (<= 12m x 6m)		M = Moist
	L = Large gardens (> 12m x 6m)		W = Wet soil



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

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.