

# PRELIMINARY ECOLOGICAL APPRAISAL

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KEPAK MERTHYR TYDFIL, PENGARNDDU  
INDUSTRIAL ESTATE, MERTHYR TYDFIL  
for  
YOUR ENERGY SOURCE

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(May 2020)  
(Contract number 284)

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## PROJECT DATA

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|                                        |                                                                             |
|----------------------------------------|-----------------------------------------------------------------------------|
| Site Address                           | Kepak Merthyr Tydfil, Pengarnddu Industrial Estate, Merthyr Tydfil CF48 2TA |
| Project Proposed                       | To construct a ground source heat pump                                      |
| Boundary as Specified by Client        | Yes                                                                         |
| Site Area (Hectares)                   | Approximately 0.03 ha                                                       |
| Central Ordnance Survey Grid Reference | SO 08258 08922                                                              |
| Survey Date                            | 22 May 2020                                                                 |
| Date Report Issued                     | 28 May 2020                                                                 |
| Report Version                         | Version 1                                                                   |

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## SUMMARY

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The site on land at Kepak Merthyr Tydfil, Pengarnddu Industrial Estate, Merthyr Tydfil and its immediate surroundings were surveyed for their ecological interest by means of a desk study and field survey on 22<sup>nd</sup> May 2020.

The site is part of a large industrial unit and is, for the most part, surrounded by Merthyr Tydfil Common to the north and east and other industrial units to the south-west. Habitats on and adjacent to the site include existing industrial buildings/structures, grassland and plantation woodland on sloping ground. There are no ponds on the site and three ponds within 500m of the site marked on Ordnance Survey maps. One of the ponds is no longer holding water and is now a damp depression.

As a whole the survey revealed that the site's habitats which will be affected by works are common and widespread and are considered to be of low intrinsic biodiversity value. The site is not of sufficient ecological value to warrant whole-scale protection from development.

Recommendations which will reduce the risk of harm to any wildlife in the lead up to construction on the site and during the development itself are provided. Proposed ecological enhancements for wildlife include the erection of bird and bat boxes on suitable trees within the adjacent plantation woodland.

Once applied and carried out, the recommended ecological protection and enhancements will provide assurance that there is no net loss to biodiversity and no unacceptable adverse impact on ecosystem services.

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## INTRODUCTION

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This report has been prepared by Craig Emms and Linda Barnett who were contracted by Your Energy Source to undertake a preliminary ecological appraisal of land at Kepak Merthyr Tydfil, Pengarnddu Industrial Estate, Merthyr Tydfil, hereafter referred to as ‘the site’, as well as adjacent areas of land where relevant.

Your Energy Source intends to submit a planning application to construct a ground source heat pump. The purpose of the survey was to identify any ecological constraints to and opportunities for the development in order to inform master planning, so that any adverse ecological effects can be avoided or minimised wherever possible.

The survey and ecological assessment of the site follows the approach set out in guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017).

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## PLANNING POLICY AND LEGISLATION

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The regulatory context of this survey and report includes the Wildlife & Countryside Act (1981) as amended, the Environmental Protection Act (1990), the Countryside and Rights of Way Act (2000), the Protection of Badgers Act (1992), the Hedgerows Regulations (1997), the Habitats Directive (1992), the Birds Directive (2009), the Berne Convention (1982), Bonn Convention (1985), Natural Environment and Rural Communities (NERC) Act (2006), the Environment (Wales) Act (2016), the Wildlife and Natural Environment (Scotland) Act (2011), the Convention on Biological Diversity (1992) and the Conservation of Habitats and Species Regulations (2017).

Please note that there is complex and strict legislation protecting many species and habitats in the United Kingdom. For European Protected Species (including bats, great crested newt, dormouse and otter) there is no longer a clear defence against harm being caused as an incidental result of an otherwise lawful operation. If you are in any doubt about the status of species or habitats on your site, please be sure to contact us before undertaking any site work.

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## METHODOLOGY – DESK STUDY

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Aderyn, the Wales' Biodiversity Information and Reporting Database (Aderyn) was contacted to provide records of protected species and non-statutory sites of nature conservation value within a 2 km search area of the site. A summary of the species data results is provided in Appendix 3.

A search for ponds and other water bodies within 500m and sites with statutory protected site designations within a 2 km radius of the development was conducted using MAGIC (Multi-Agency Geographic Information for the Countryside - [www.magic.gov.uk](http://www.magic.gov.uk)).

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## METHODOLOGY – FIELD SURVEY

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A preliminary ecological appraisal, comprising an extended Phase 1 habitat survey and a protected species assessment was undertaken by appropriately licenced, qualified and experienced personnel during May 2020. It followed the methodology contained in the Handbook for Phase 1 Habitat Survey (JNCC, 2010) and the current guidance on survey methods from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017).

### Extended Phase 1 Habitat Survey

An extended Phase 1 habitat survey was undertaken to assess the ecological value of the site. During this survey the site and its immediate surroundings were evaluated by walking over them at a uniform pace, whilst making a note of the habitats and species present. Habitat descriptions for each habitat type are provided in this report as well as target notes (if applicable) to identify particular areas of interest or concern.

A search was also made for evidence of native weeds (*e.g.* common ragwort), non-native invasive species (*e.g.* Japanese knotweed and muntjac) and serious plant diseases/pathogens (*e.g.* ash dieback).

### Protected Species Assessment

As part of the preliminary ecological assessment, the site was also evaluated for its potential to contain protected or notable species, and any incidental evidence of such species was recorded if encountered. The evaluation of the site was made based on the habitats present and their suitability for protected species including, but not limited to, the species listed below:

- Badgers;
- Bats;
- Dormice;

- Great crested newts;
- Nesting birds (including barn owls);
- Otters;
- Reptiles;
- Water voles.

A preliminary daytime bat roost assessment of all buildings/structures and a preliminary daytime ground level bat assessment of all trees and bushes on or immediately adjacent to the site were undertaken as a part of this survey.

### Badgers

The following badger field signs were searched for on the development site and up to 30m from the boundaries of the site, where accessible, following Kruuk (1978), Thornton (1988), Scottish Badgers (2018) and Lewns *et al* (in press):

- Sett entrances, *e.g.* entrances that are normally 22 - 25cm in diameter and shaped like a 'D' on its side;
- Large spoil heaps outside sett entrances;
- Bedding outside sett entrances;
- Day beds (above ground areas where badgers sleep, characterised by flattened vegetation or bundles of grass);
- Badger footprints;
- Badger paths;
- Badger dung pits and latrines (a group of 5 or more dung pits);
- Badger hairs on fences or bushes;
- Scratching posts;
- Signs of digging for food (snuffles).

If evidence of a badger sett is found further field signs are sought to decide whether the sett is currently in use. The sett is protected from disturbance or damage if there are signs of badgers, even if they are not occupying it at the time. If badger setts are found further surveys may be necessary. A full badger survey was not undertaken.

### Bat Roosts

A preliminary daytime roost assessment of all buildings/structures immediately adjacent to the site was undertaken. This involved a detailed external inspection specifically for potential or actual bat access points and roosting places and any direct evidence of bats, including:

- Live or dead bats
- Droppings
- Urine splashes
- Fur-oil staining
- Squeaking noises

In addition, a preliminary daytime ground level assessment of all trees and bushes on the site or immediately adjacent to the site was undertaken when potential bat roosting features (adapted from BTHK, 2018) were searched for, including:

- Woodpecker-holes
- Squirrel-holes
- Knot-holes
- Pruning-cuts
- Tear-outs
- Wounds
- Cankers
- Compression-forks
- Butt-rots
- Lightning-strikes
- Hazard-beams
- Subsidence-cracks
- Shearing-cracks
- Transverse-snaps
- Welds
- Lifting-bark
- Desiccation-fissures
- Frost-cracks
- Fluting
- Ivy
- Bat, bird or dormouse boxes

Any buildings/structures, trees and bushes were then attributed a grade of negligible, low, moderate or high suitability to support roosting bats according to Bat Conservation Trust guidelines criteria following Collins (2016). Appendix 2 provides a more detailed explanation of the bat roost assessment criteria. If evidence of bats is found further surveys may be necessary.

### Dormice

The habitats within the site's boundaries were assessed for their suitability for dormice based on vegetation structure, connectivity and species composition following both Bright *et al* (2006) and Chanin and Woods (2003). In addition direct evidence of dormice was searched for, including:

- Gnawed hazel nuts
- Nests

- Dormice nest boxes

If direct evidence of dormice is found, or the habitats on the site (if they are to be removed/damaged/disturbed as a result of the development) are assessed as suitable for dormice, further surveys may be necessary. A full dormouse survey was not undertaken.

#### Great Crested Newts

There are no ponds on the site and three ponds within 500m of the site marked on Ordnance Survey maps. The relative suitability of the ponds for great crested newts was evaluated using the Habitat Suitability Index (HSI) methodology (ARG UK, 2010). If the ponds are found to be suitable for breeding great crested newts further surveys may be necessary.

The relative value of the terrestrial habitats within the site's boundaries for great crested newts and other amphibians was noted, although a detailed assessment was not carried out. A full great crested newt survey was not undertaken.

#### Nesting Birds (including Barn Owls)

The relative value of the habitats within the site's boundaries for nesting birds and foraging barn owls was noted, although a detailed assessment was not carried out. A full breeding bird survey was not undertaken.

Potential barn owl nesting/roosting sites and barn owl field signs were searched for in any buildings/structures or trees on and immediately adjacent to the site following the guidelines in Barn Owl Trust (2012). If nesting/roosting sites or evidence of barn owls is found further surveys may be necessary. A full barn owl survey was not undertaken.

#### Otters

There are no waterways/waterbodies either on or adjacent to the site. A full otter survey was not undertaken.

#### Reptiles

The relative value of the terrestrial habitats within the site's boundaries, including potential basking areas, refugia and hibernation places for reptiles was noted, although a detailed assessment was not carried out. A full reptile survey was not undertaken.

#### Water Voles

There are no waterways/waterbodies either on or adjacent to the site. A full water vole survey was not undertaken.

#### **LIMITATIONS**

It should be noted that a single visit to a site will inevitably miss species not visible on the date of survey by reason of seasonality, mobility, habits or chance. The month of May is an optimal survey period for many taxa of nature conservation interest in this part of the United Kingdom. This ecological survey may not be sufficient on its own for planning application purposes

where notable habitats/species are present or potentially present, especially regarding European Protected Species.

The surveyor cannot guarantee that all invasive plant species, such as Japanese knotweed or Himalayan balsam, will be observed at the time of the site visit. A full survey of invasive species potentially present on the site should be commissioned separately and conducted during the growing season when any invasive plants which may be present will be visible.

No constraints were such that they affect the overall conclusions and recommendations made in the report.

## BASELINE ECOLOGICAL CONDITIONS – DESIGNATED SITES

The desk study showed that there are no known sites with statutory protected site designations within a 2 km radius of the development.

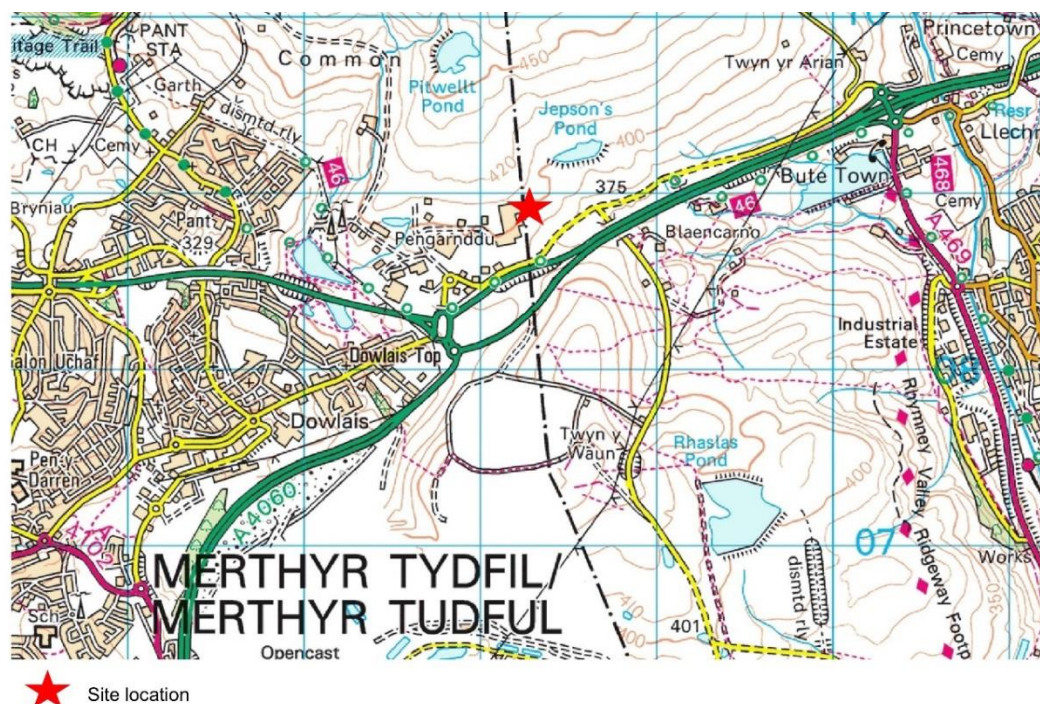
The Aderyn data enquiry and the desk study also showed that six Wildlife Sites/Sites of Interest for Nature Conservation (SINCs) are within the 2 km search radius of the development. These Wildlife Sites/SINCs are: Pan March and Traed y Milwyr, Llechryd (located approximately 51m from the development site); Merthyr Common North (76m from the site); Blaenmorlais (608m); Cefn Gelligaer, West of Deri (1,544m); Tair Carreg Moor, North West of Fochriw (1,651m) and Butetown, Llechryd and Rhymney Grasslands, Rhymney (1,816m from the site).

## BASELINE ECOLOGICAL CONDITIONS - HABITATS

## GENERAL DESCRIPTION

The site (central OS Grid Ref: SO 08258 08922) is located in Merthyr Tydfil (see Figure 1).

### FIGURE 1: LOCATION OF THE SITE



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It is approximately 0.03 ha in extent and situated in a large industrial unit that is, for the most part, surrounded by Merthyr Tydfil Common to the north and east and other industrial units to the south-west (see Plate 1). Habitats on and adjacent to the site include existing industrial buildings/structures, grassland and plantation woodland on sloping ground. There are no ponds on the site and three ponds within 500m of the site marked on Ordnance Survey maps. One of the ponds no longer holds water and merely remains as a damp depression.

**Plate 1:** Aerial photograph of the site and surrounding land



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## HABITAT DESCRIPTIONS

*A list of all plant species recorded during this survey, their scientific names and where relevant their DAFOR scale of abundance is presented in Table 1 in Appendix 1.*

Existing Buildings/Structures: There are two structures adjacent to the southern boundary of the eastern part of the site (see Figure 2 and Plates 2 and 3). Both of these structures have been judged to have negligible potential to support roosting bats as no bat roosting features were observed (refer also to the section on Bats below). They will remain undamaged and *in situ* during the project.



**Plate 2:** the small portacabin-like building adjacent to the site. This building has been judged to have negligible potential to support roosting bats. It will remain undamaged and *in situ* during the project. Photograph taken from the north.



**Plate 3:** the water tank adjacent to the site. This structure has been judged to have negligible potential to support roosting bats. It will remain undamaged and *in situ* during the project. Photograph taken from the north-west.

Semi-improved Grassland: This habitat is present over a part of the eastern half of the site on sloping ground (see Figure 2 and Plates 4 and 5). Plant species recorded in the grassland are shown in Table 1 in Appendix 1. They include only widespread and common species.



**Plate 4:** a view of the small area of semi-improved grassland on the site. Photograph taken from the south.



**Plate 5:** another view of the semi-improved grassland on the site. Photograph taken from the north-east.

Mixed Plantation Woodland: This habitat is present (as immature trees) over a part of the eastern half of the site on sloping ground (see Figure 2 and Plates 6 and 7). All of the trees and bushes on the site have been judged to have negligible potential to support roosting bats as no bat roosting features were observed. The habitat on site is a small part of a much larger plantation woodland adjacent to the site. The trees on the site will be felled and the adjacent woodland will be undamaged and left *in situ* during the project. Plant species recorded in the woodland are shown in Table 1 in Appendix 1. They include only widespread and common species.



**Plate 6:** a view of the mixed plantation woodland on the site. All of the trees and bushes on the site have been judged to have negligible potential to support roosting bats. It is a small part of a much larger plantation woodland adjacent to the site. The trees on the site will be felled and the adjacent woodland will be undamaged and left *in situ* during the project. Photograph taken from the north-west.



**Plate 7:** a view of the interior of the mixed plantation woodland on the site.

Ponds: There are no ponds on the site and three ponds within 500m of the site marked on Ordnance Survey maps, though one of these is no longer a pond. One of the remaining ponds has been evaluated to have ‘poor’ habitat suitability while the other has ‘below average’ habitat suitability for great crested newts (see Plates 8 and 9, and refer also to the Great Crested Newts section below and Table 3 in Appendix 1 for details of the survey results).



**Plate 8:** Pond 1 (known as Jepson's Pond), located approximately 292m north-east of the development site and evaluated as having ‘poor’ habitat suitability for great crested newts.



**Plate 9:** Pond 2, located approximately 238m north-east of the development site and evaluated as having ‘below average’ habitat suitability for great crested newts.

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## BASELINE ECOLOGICAL CONDITIONS – SPECIES AND SPECIES GROUPS

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### PLANTS

Only widespread and common species were observed on the site. A list of all plant species recorded during this survey, their scientific names and where relevant their DAFOR scale of abundance is presented in Table 1 in Appendix 1.

### MACRO-INVERTEBRATES

None were observed on the site.

### FISH

No fish were observed during the survey. There are no aquatic habitats on the site.

### GREAT CRESTED NEWT

No great crested newts were observed on the site. There are no ponds on the site and three ponds located within 500m of the site marked on Ordnance Survey maps. Based on the terrestrial range of individual great crested newts (generally less than 250m, occasionally more than 500m, and rarely up to 1 km from their breeding site), it was considered reasonable to conclude that only ponds within 500m of the site are relevant to the survey. One of the surveyed ponds (located at Ordnance Survey Grid Reference SO 08448 08658) no longer holds water and remains as a damp depression.

One of the surveyed ponds has been evaluated as having ‘poor’ habitat suitability and one has been evaluated as having ‘below average’ habitat suitability for great crested newts (see Plates 8 and 9, and Table 3 in Appendix 1 for details of the survey results).

It is generally accepted that where suitable habitat is present the majority of a great crested newt population will use terrestrial habitats within 50m of the breeding pond (Jehle, 2000).

English Nature (Natural England’s predecessor) published findings of a research report into great crested newt mitigation schemes (Cresswell and Whitworth, 2004) which states that:

*“The most comprehensive mitigation, in relation to avoiding disturbance, killing or injury is appropriate within 50m of a breeding pond. It will also almost always be necessary to actively capture newts 50-100m away. However, at distances greater than 100m, there should be careful consideration as to whether attempts to capture newts are necessary or the most effective option to avoid incidental mortality. At distances greater than 200-250m, capture operations will hardly ever be appropriate.”*

Aderyn returned one record of great crested newt within a 2 km search radius of the site recorded in 1986. This record is located approximately 1,060m from the site. As the two ponds within 500m of the site are considered to have either poor or below average habitat suitability for great crested newts, it is recommended that no further surveys are required.

## OTHER AMPHIBIANS

No amphibians were observed during the survey. There are no suitable aquatic habitats on the site. Aderyn returned 14 records of common amphibians (common toad, common frog and palmate newt) within a 2 km search radius of the site between 1973 and 2019. The closest of these records (of a common toad) is located approximately 283m from the development site. No further surveys are required.

## REPTILES

The grassland on the site is a suitable habitat for low numbers of common lizard *Zootoca vivipara* and slow worm *Anguis fragilis*. All British reptiles are protected from killing or injury (though their habitat is not specially protected) and this could occur as an incidental result of construction. During the survey the above habitat was searched for evidence or indication of reptiles. The habitat is considered to be of limited value to reptiles due to the paucity of potential basking areas, refugia and hibernacula though it is possible that some reptiles are present. However, it is considered unlikely that there is a significant population given the limitations of the habitat that is present. Barred grass snakes *Natrix helvetica* and adders *Vipera berus* may hunt within the site as part of much wider home ranges.

Aderyn returned three records of common lizard within a 2 km search radius of the site between 2007 and 2012. The closest of these records is located 1,141m from the site. Mitigation activities to reduce the risk of harm to any reptiles in the lead up to construction are given in the Recommendations section. After mitigation, significant impacts to reptiles are unlikely. No further surveys are required.

## BIRDS

A typical range of birds commonly associated with the above habitats were recorded during the survey. These included no Red Listed species and no Amber Listed species. The Red and Amber Lists refer to Birds of Conservation Concern (Eaton *et al*, 2015). Red Listed birds are of high conservation concern and Amber Listed birds are of medium conservation concern.

Bird species recorded during the survey included woodpigeon and robin.

### Red-listed Birds

None were observed on site.

### Amber-listed Birds

None were observed on site.

The breeding assemblage is considered to be typical of the habitats present in the geographic location.

Aderyn returned 272 records of 33 Amber listed bird species (dunnock, kestrel, reed bunting, black-headed gull, bullfinch, avocet, whooper swan, green sandpiper, kingfisher, red grouse, snow bunting, goldeneye, marsh harrier, meadow pipit, house martin, lesser black-backed gull,

mallard, wigeon, great black-backed gull, willow warbler, common sandpiper, snipe, redstart, mute swan, swift, teal, sanderling, dunlin, gadwall, short-eared owl, Iceland gull, glaucous gull and yellow-legged gull) within a 2 km search radius of the site.

Aderyn also returned 263 records of 20 Red listed bird species (lapwing, skylark, herring gull, starling, merlin, curlew, hen harrier, linnet, song thrush, house sparrow, redwing, fieldfare, marsh tit, ringed plover, ring ouzel, cuckoo, woodcock, pochard, grey wagtail and mistle thrush) within a 2 km search radius of the site.

All of the above records were recorded between 1973 and 2020. None of the records relate to any bird species recorded on or adjacent to the development site. The closest records are located approximately 283m from the development site.

#### Active Nests Found

None were observed on site.

There were no potential barn owl roosting places or nest sites observed on the site. The habitat covering a part of the site (semi-improved grassland) is a suitable habitat for foraging barn owls as it contains a litter layer, but the amount of this habitat that is present on the site is very small. Aderyn returned two records of barn owl within a 2 km search radius of the site in 2008 and 2014. The closest of these records is located 349m from the site.

It is likely that a number of common farmland and woodland birds may breed each year in the plantation woodland on and adjacent to the site.

The addition of bird nesting boxes on suitable trees within the adjacent woodland (see Recommendations below) will provide new potential nesting places for birds.

#### BATS

There are two buildings/structures adjacent to the eastern part of the site (see Figure 2 and Plates 2 and 3). The first is a small portacabin-type single-storey structure with a single-pitched roofing-felt covered roof. The second structure is a large enclosed water-tank. Both of these structures are considered to have negligible potential to support roosting bats as no bat roosting features were observed during the survey. They will remain undamaged and *in situ* during the project.

All of the immature trees and bushes on the site and adjacent to the site were considered to have negligible potential to support roosting bats as no bat roosting features were observed during the survey.

Aderyn returned 10 records of four identified bat species (common pipistrelle, noctule, Daubenton's bat, lesser horseshoe bat and an unidentified *Myotis* species) within a 2 km search radius of the site, all recorded in 2007. The closest of these records is a common pipistrelle located 637m from the site.

Common species of bats are likely to forage within the site to some extent, especially along the edge of the plantation woodland. However, the majority of this habitat is remaining *in situ* adjacent to the site and will be undamaged during the project. Thus the development is unlikely to have a significant impact on the local bat population, especially given that bats are highly mobile animals.

Nonetheless, since a bat's movement across a landscape can be affected and possibly impaired by artificial light spillage certain aspects of the construction will require controls and constraints. These are described in the Constraints section to minimise such impacts.

The addition of bat roosting boxes on suitable trees within the adjacent woodland (see Recommendations below) will provide new potential roosting places for bats.

No further bat surveys are required.

#### OTTERS

No otters or field signs of otters were observed on the site. There are no suitable aquatic habitats present. Aderyn returned two records of otters within a 2 km search radius of the site, both in 2008 (612m from the site). No further surveys are required.

#### WATER VOLES

No water voles or field signs of water voles were observed on the site. There are no suitable aquatic habitats present. Aderyn returned no records of water voles within a 2 km search radius of the site. No further surveys are required.

#### DORMICE

No dormice or field signs of dormice were observed on the site. Dormice may possibly use the plantation woodland on the site. However, this is considered highly unlikely as the woodland is immature and does not contain a wide range of suitable tree species for foraging dormice. The plantation woodland adjacent to the site is remaining *in situ* and will be undamaged during the project. Aderyn returned no records of dormice within a 2 km search radius of the site. No further surveys are required.

#### BADGERS

No badger setts were observed either on the site or within 30m of the site's perimeter (where access was possible) and no field signs that could be attributed to badgers were observed on the site. Aderyn returned no records of badgers within a 2 km search radius of the site. As no badger setts will be disturbed or damaged no further surveys are required.

#### OTHER MAMMALS

Stoats, weasels, grey squirrels, mice, voles and shrews probably use the habitats on site. Aderyn returned six records of hedgehog and two records of brown hare within a 2 km search radius of the site between 2007 and 2019. The closest of these records is located 1,807m from the site.

As the site is situated within a fenced industrial unit that has heavy traffic within it for 24 hours a day, it is considered highly unlikely that either of these species occurs on or around the site.

#### INVASIVE PLANTS

There were none observed on the site. However, please also refer to the section within Limitations above.

#### WEEDS ACT NATIVES

Broad-leaved dock, creeping thistle and common ragwort were observed on site.

#### INVASIVE ANIMALS

Grey squirrels probably use the site.

#### SERIOUS PLANT DISEASES/PATHOGENS

None observed on the site.

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## ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES

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### FEATURES THAT SHOULD BE RETAINED IF POSSIBLE

All of the adjacent plantation woodland (off-site) should and will be retained *in situ* within the project.

### CONSTRAINTS

To comply with national planning policy framework paragraph 125, unnecessary negative impacts of new lighting at night should be avoided *e.g.* on plants, bats, invertebrates and astronomy. Possible negative impacts of new lighting should also be minimised by keeping the hours when lighting is used as short as possible, avoiding light spillage by using directional down-lighting, reducing the brightness of necessary illumination and keeping light from shining on bat roost entries, bat flyways and foraging areas, and other mammal holes. Luminaires (lighting enclosures, lanterns, or units designed to distribute light from a lamp or lamps) come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires (BCT and ILP, 2018):

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used;
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability;
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component;
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats;
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill;
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional;
- Column heights should be carefully considered to minimise light spill;
- Only luminaires with an upward light ratio of 0% and with good optical control should be used – (see ILE, 2011);

- Luminaires should always be mounted on the horizontal, *i.e.* no upward tilt;
- Any external security lighting should be set on motion-sensors and short (1min) timers;
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

Ecological impacts during construction should also be minimised by generally avoiding unnecessary disturbance and pollution. If there are any steep-sided excavations created during construction, they should be covered/filled/provided with ramps to prevent any mammals becoming trapped.

#### OPPORTUNITIES

In line with best practice and in order to comply with government policy on biodiversity protection and enhancement, habitats and features of ecological interest and wildlife value should generally be retained within the site. New wildlife habitats should be created in these areas that are appropriate to the site's context, *e.g.* through the use of log piles, "wild" corners and native planting.

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## RECOMMENDATIONS FOR MITIGATION AND FURTHER SURVEY

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### RECOMMENDATIONS

- To reduce the risk of harm to reptiles in the lead up to construction the vegetation in the grassland on the site should be kept short through regular strimming/cutting/mowing. This will reduce the amount of favourable habitat within the site where the works will take place and passively move any reptiles into suitable habitat outside of the development footprint. If the land falls out of management before the commencement of construction on the site, consideration should be made for actively managing the above habitats to prevent them becoming more suitable for these species.
- A pre-clearance finger-tip search of the development site using a suitably licenced, qualified and experienced ecologist should be conducted immediately prior to site stripping and any vulnerable taxa removed to safety.
- It is possible that birds nest in the trees on and adjacent to the site. As a precaution, appropriate and pragmatic measures should be taken to avoid committing the offence of killing or injuring a wild bird or damaging or destroying an active nest; all birds, their nests and eggs are protected by the Wildlife & Countryside Act of 1981. This makes it an offence, with certain exceptions, to deliberately take, damage or destroy the nest of any wild bird while it is in use or being built. It is also illegal to take or destroy the egg of any wild bird.
- Any operations that may disturb nesting habitat should be conducted outside the main bird nesting season. The main bird nesting season is usually taken as the beginning of March to the end of August inclusive in this part of Britain. If this is unavoidable, a pre-clearance inspection by a suitably experienced ornithologist will be required immediately prior to construction works to identify whether any nests are present, and ensure appropriate action is taken. If the latter approach is taken and nesting is encountered there is a risk of delay since an 'exclusion zone' may need to be set up around active nests until the young have fledged. Please be aware that some species of bird may occasionally be found nesting outside of the main bird nesting season as detailed above (*e.g.* barn owl, tawny owl, long-eared owl, mistle thrush, robin, yellowhammer, corn bunting, stock dove, feral pigeon, woodpigeon and collared dove *etc.*). Always check potential nesting habitat for signs of nesting birds (*e.g.* look for singing males or birds making strident alarm calls) before disturbing potential nesting habitat when outside of the main nesting season. If you believe that nesting birds *may* be present, instruct a suitably experienced ornithologist to conduct an inspection.

- To enhance the site for birds, four bird nesting boxes of mixed designs should be erected on suitable trees within the adjacent woodland.
- To enhance the site for bats, four bat roosting boxes of mixed designs should be erected on suitable trees within the adjacent woodland.

#### FURTHER SURVEYS

- No further surveys are required.

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### CONCLUSIONS

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Providing the recommendations noted herein are fully implemented, there are no obvious ecological counter indications to the proposed project at this stage. The recommended ecological protection and enhancements, including the erection of bird nesting boxes and bat roosting boxes will provide assurance that there is no net loss to biodiversity and no unacceptable adverse impact on ecosystem services.

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## REFERENCES

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ARG UK (2010) Advice Note 5: *Great Crested Newt Suitability Index*. Amphibian and Reptile Groups of the United Kingdom.

Barn Owl Trust (2012) *Barn Owl Conservation Handbook*. Pelagic Publishing, Exeter, UK.

BCT and ILP (2018) *Guidance Note 08/18. Bats and artificial lighting in the UK: Bats and the Built Environment series*. Bat Conservation Trust and Institution of Lighting Professionals. London and Rugby, UK.

Bright, P. W., Morris, P. A. and Mitchell-Jones, A. J. (2006) *The Dormouse Conservation Handbook, 2nd Edition*. Natural England, Peterborough, UK.

BTHK (2018) *Bat Roosts in Trees – A Guide to Identification and Assessment for Tree-Care and Ecology Professionals*. Pelagic Publishing, Exeter, UK.

Chanin, P. and Woods, M. J. (2003) *Surveying dormice using nest tubes. Results and experiences from the South West Dormouse Project*. English Nature Research Project Report 524. English Nature, Peterborough, UK.

CIEEM (2015) *Guidelines for Ecological Report Writing*. Chartered Institute of Ecology and Environmental Management, Winchester, UK.

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

Collins, J. (Ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edition)*. The Bat Conservation Trust, London, UK.

Cresswell, W. and Whitworth, R. (2004). *An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt Triturus cristatus*. English Nature Research Reports, Number 576, Peterborough, UK.

Eaton, M., Aebischer, N., Brown, A., Hearn, R., Lock, L., Musgrove, A., Noble, D., Stroud, D. and Gregory, R. (2015) *Birds of Conservation Concern 4: the population status of birds in the UK, Channel Islands and the Isle of Man*. British Birds, 108: 708–746.

ILE (2011) *Guidance Notes for the Reduction of Obstructive Light*. Institution of Lighting Engineers. Rugby, UK.

Jehle, R. (2000) *The terrestrial summer habitat of radio tracked great crested newts (Triturus cristatus) and marbled newts (Triturus marmoratus)*. The Herpetological Journal, 10: 137-143.

Joint Nature Conservation Committee (2010) *Handbook for Phase 1 habitat survey: a technique for environmental audit*. JNCC, Peterborough, UK.

Kruuk, H. (1978) *Spatial organization and territorial behaviour of the European badger Meles meles*. Behavioural Ecology and Sociobiology, 4 (1): 75-89.

Lewns, P., Lewns, D. and Clarkson, T. (in press, due autumn 2019) *Badger Survey and Mitigation Guidelines*. Mammal Society. London, UK.

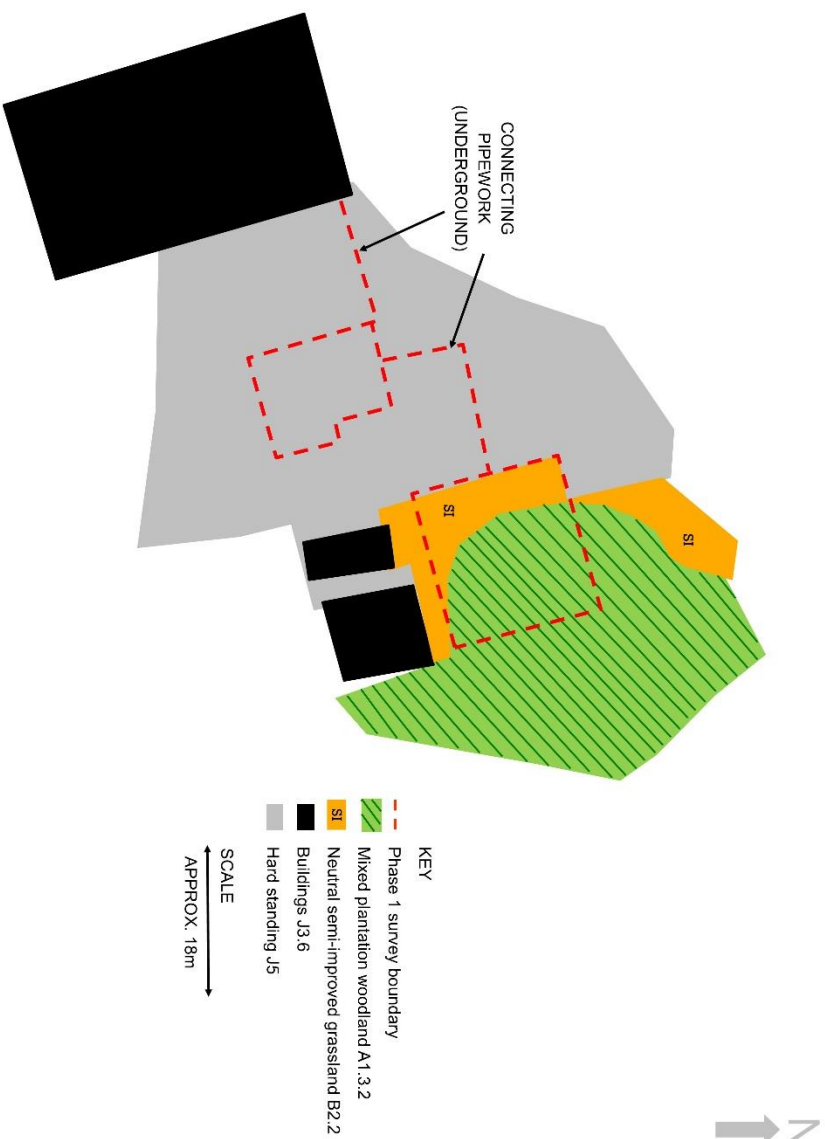
Mammal Society (2018) *Britain's Mammals 2018: The Mammal Society's Guide to their Population and Conservation Status*. The Mammal Society, London, UK.

Preston, C. D., Pearman, D. A. and Dines, T. D. (2002) *New Atlas of the British and Irish Flora*. Oxford University Press, Oxford, UK.

Scottish Badgers (2018) *Surveying for Badgers: Good Practice Guidelines*. Version 1. Scottish Badgers, UK.

Thornton, P. S. (1988) *Density and distribution of badgers in south-west England – a predictive model*. Mammal Review, 18: 11–23.

FIGURE 2: SITE PLAN



Please note: This plan is intended to indicate the approximate location of features and should therefore, not be treated as an accurate scale plan.

## APPENDICES

### APPENDIX 1 – DEVELOPMENT SITE SURVEY DATA

**Table 1:** Botanical Species List on 22<sup>nd</sup> May 2020  
Weather conditions: cloudy and windy (Max. 14°C)

| Common Name               | Status                                         | Scientific Name                  | Semi-improved grassland | Mixed plantation woodland |
|---------------------------|------------------------------------------------|----------------------------------|-------------------------|---------------------------|
| Barren Brome              | Archaeophyte                                   | <i>Anisantha sterilis</i>        | LF                      |                           |
| Black Medick              | Native species                                 | <i>Medicago lupulina</i>         | O                       |                           |
| Broad-leaved Dock         | Native species                                 | <i>Rumex obtusifolius</i>        | F                       |                           |
| Cat's-ear                 | Native species                                 | <i>Hypochaeris radicata</i>      | F                       |                           |
| Cock's-foot               | Native species                                 | <i>Dactylis glomerata</i>        | O                       |                           |
| Coltsfoot                 | Native species                                 | <i>Tussilago farfara</i>         | LF                      |                           |
| Common Birds-foot Trefoil | Native species                                 | <i>Lotus corniculatus</i>        | R                       |                           |
| Common Feather-moss       | Native species                                 | <i>Eurhynchium praelongum</i>    | LF                      |                           |
| Common Nettle             | Native species                                 | <i>Urtica dioica</i>             | O                       |                           |
| Common Ragwort            | Native species                                 | <i>Senecio jacobaea</i>          | F                       |                           |
| Common Sedge              | Native species                                 | <i>Carex nigra</i>               | R                       |                           |
| Common Sorrel             | Native species                                 | <i>Rumex acetosa</i>             | LF                      |                           |
| Creeping Buttercup        | Native species                                 | <i>Ranunculus repens</i>         | LA                      |                           |
| Creeping Cinquefoil       | Native species                                 | <i>Potentilla reptans</i>        | R                       |                           |
| Creeping Thistle          | Native species                                 | <i>Cirsium arvense</i>           | O                       |                           |
| Daisy                     | Native species                                 | <i>Bellis perennis</i>           | F                       |                           |
| Dandelion                 | Apomictic (most species native, some Neophyte) | <i>Taraxacum officinale</i> agg. | F                       |                           |
| Field Horsetail           | Native species                                 | <i>Equisetum arvense</i>         | F                       |                           |
| Field Maple               | Native species                                 | <i>Acer campestre</i>            |                         | X                         |
| Goat Willow               | Native species                                 | <i>Salix caprea</i>              |                         | X                         |
| Great Willowherb          | Native species                                 | <i>Epilobium hirsutum</i>        | O                       |                           |
| Grey Willow               | Native species                                 | <i>Salix cinerea</i>             |                         | X                         |
| Hawthorn                  | Native species                                 | <i>Crataegus monogyna</i>        |                         | X                         |
| Male-fern                 | Native species                                 | <i>Dryopteris filix-mas</i>      | R                       |                           |
| Marsh Thistle             | Native species                                 | <i>Cirsium palustre</i>          | R                       |                           |
| Ribwort Plantain          | Native species                                 | <i>Plantago lanceolata</i>       | R                       |                           |
| Scots Pine                | Native (Scottish highlands,                    | <i>Pinus sylvestris</i>          |                         | X                         |

|                        |                                                                     |                              |   |   |
|------------------------|---------------------------------------------------------------------|------------------------------|---|---|
|                        | introduced elsewhere)                                               |                              |   |   |
| Sessile Oak            | Native species                                                      | <i>Quercus petraea</i>       |   | X |
| Smooth Meadow-grass    |                                                                     |                              | F |   |
| Smooth Sow-thistle     | Native species                                                      | <i>Sonchus oleraceus</i>     | R |   |
| Soft Lady's Mantle     |                                                                     |                              | R |   |
| Tufted Hair-grass      | Native species                                                      | <i>Deschampsia cespitosa</i> | O |   |
| Wavy Bittercress       | Native species                                                      | <i>Cardamine flexuosa</i>    | O |   |
| White Clover           | Native species                                                      | <i>Trifolium repens</i>      | O |   |
| <b>Key to Woodland</b> | X = present                                                         |                              |   |   |
| <b>DAFOR scale</b>     | <b>Dominant, Abundant, Frequent, Occasional, Rare (L = locally)</b> |                              |   |   |

Note 1: the above status refers to (Preston *et al*, 2002): native species – a species present in Britain as the result of only natural processes, with no human intervention; archaeophyte – a species that was introduced in ‘ancient’ times (*i.e.* before 1500), but is now considered to be fully naturalised; neophyte – a species that was introduced in ‘recent’ times (*i.e.* after 1500); apomictic – a species that produces viable seed without fertilisation, these germinating into seedlings that are identical to the parent. These often have large numbers of ‘micro-species’ and no attempt has been made to identify these; hybrid – a result of mixing, through sexual reproduction, of two different species.

Note 2: the above vegetation coverage descriptions make reference to the DAFOR scale (Dominant, Abundant, Frequent, Occasional or Rare); this scale describes the coverage in the area being studied and is not a reference to the national status of the species in question (*i.e.* a ‘rare’ attribute above refers to the species being uncommon on the proposed development site, not that it is of national conservation value).

## **Habitat Suitability Index**

A Habitat Suitability Index (HSI) is a numerical score where 0 indicates unsuitable habitat and 1 represents optimal habitats. The HSI for the great crested newt incorporates ten suitability indices, all of which are factors believed to affect this species.

Categorisation of HSI Scores and proportion of ponds occupied by newts taken from: ARG UK advice note 5 (Amphibian and Reptile Groups of the United Kingdom, 2010):

**Table 2:** HSI scores and suitability of ponds for great crested newts

| <b>HSI Score</b> | <b>Classification of Pond Suitability for Great Crested Newts</b> | <b>Proportion of Ponds Occupied by Great Crested Newts</b> |
|------------------|-------------------------------------------------------------------|------------------------------------------------------------|
| <0.5             | Poor                                                              | 0.03                                                       |
| 0.5 – 0.59       | Below average                                                     | 0.20                                                       |
| 0.6 – 0.69       | Average                                                           | 0.55                                                       |
| 0.7 – 0.79       | Good                                                              | 0.79                                                       |
| > 0.8            | Excellent                                                         | 0.93                                                       |

**Table 3:** Habitat Suitability Indices for Great Crested Newts

| <b>Pond ref</b>                     | <b>Pond 1 (Jepson's Pond)</b> | <b>Pond 2</b>         |
|-------------------------------------|-------------------------------|-----------------------|
| <i>OS Grid ref</i>                  | <i>SO 08580 09220</i>         | <i>SO 08409 09137</i> |
| <i>Size of pond (m<sup>2</sup>)</i> | <i>21,187</i>                 | <i>8</i>              |
| <i>Distance from site (m)</i>       | <i>292</i>                    | <i>238</i>            |
| SI1 - Location                      | 0.5                           | 0.5                   |
| SI2 - Pond area                     | -                             | 0.02                  |
| SI3 - Pond drying                   | 0.9                           | 1.0                   |
| SI4 - Water quality                 | 0.33                          | 1.0                   |
| SI4 - Shade                         | 1.0                           | 1.0                   |
| SI6 - Waterfowl                     | 0.01                          | 1.0                   |
| SI7 - Fish                          | 0.67                          | 1.0                   |
| SI8 - Ponds                         | 1.0                           | 1.0                   |
| SI9 - Terrestrial habitat           | 0.67                          | 0.67                  |
| SI10 - Macrophytes                  | 0.3                           | 0.8                   |
| <i>HSI</i>                          | <i>0.43</i>                   | <i>0.59</i>           |
|                                     | <i>Poor</i>                   | <i>Below average</i>  |

## APPENDIX 2 – BAT ROOST ASSESSMENTS

**Table 4:** Bat Roost Assessment Criteria.

| Suitability | Description of Roosting habitats                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Commuting and foraging habitats                                                                                                                                                                                                                                                                                                                  |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Negligible  | Negligible habitat features on site likely to be used by roosting bats.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Negligible habitat features on site likely to be used by commuting or foraging bats.                                                                                                                                                                                                                                                             |
| Low         | <p>A structure with one or more potential roost sites that could be used by individual bats opportunistically.</p> <p>However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).</p> <p>A tree of sufficient size and age to contain Potential Roost Features (PRFs) but none seen from the ground or features seen with only very limited roosting potential.</p> | Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream or lone tree (not in a parkland situation) or a patch of scrub, but isolated, <i>i.e.</i> not very well connected to the surrounding landscape by another habitat.                                                                 |
| Moderate    | A structure or tree with one or more PRFs that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat, but unlikely to support a roost of high conservation status (with respect to roost type only - the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).                                                                                                                                                                                            | Continuous habitat connected with the wider landscape that could be used by bats for commuting such as lines of trees, scrub, grassland or water or linked back gardens.                                                                                                                                                                         |
| High        | A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.                                                                                                                                                                                                                                                                                                           | <p>Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, tree-lined watercourses, grazed parkland, hedgerows, lines of trees, broad-leaved woodland and woodland edge.</p> <p>Site is close to and connected to known roosts.</p> |

Note: Adapted from Collins, 2016.

## APPENDIX 3 – DATA SEARCH RESULTS SUMMARY (FEBRUARY 2020)

**Table 5:** Non-statutory nature conservation sites within a 2 km search radius.

| Name of site                                       | Status of site                                                   | Distance from development site |
|----------------------------------------------------|------------------------------------------------------------------|--------------------------------|
| Pan March and Traed y Milwyr, Llechryd             | Wildlife Site/Site of Interest for Nature Conservation (adopted) | 51m                            |
| Merthyr Common North                               | Wildlife Site/Site of Interest for Nature Conservation (adopted) | 76                             |
| Blaenmorlais                                       | Wildlife Site/Site of Interest for Nature Conservation (adopted) | 608                            |
| Cefn Gelligaer, West of Deri                       | Wildlife Site/Site of Interest for Nature Conservation (adopted) | 1,544m                         |
| Tair Carreg Moor, North West of Fochriw            | Wildlife Site/Site of Interest for Nature Conservation (adopted) | 1,651m                         |
| Butetown, Llechryd and Rhymney Grasslands, Rhymney | Wildlife Site/Site of Interest for Nature Conservation (adopted) | 1,816m                         |

Note: adapted from information provided by Aderyn

**Table 6:** Protected species within a 2 km search radius.

| DATA SEARCH RESULTS (SUMMARY)                                      |                                                           |                                                                                                                                                                                                  |
|--------------------------------------------------------------------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Source                                                             | Species Data Response                                     | Comment                                                                                                                                                                                          |
| Aderyn, the Wales' Biodiversity Information and Reporting Database | Fish                                                      | No records within a 2 km search radius of the site.                                                                                                                                              |
|                                                                    | Great Crested Newt                                        | One record of great crested newt within a 2 km search radius of the site recorded in 1986. This record is located approximately 1,060m from the site.                                            |
|                                                                    | Other Amphibians (Common Toad, Common Frog, Palmate Newt) | 14 records of amphibians within a 2 km search radius of the site between 1973 and 2019. The closest of these records (of a common toad) is located approximately 283m from the development site. |
|                                                                    | Reptiles (Common Lizard)                                  | Three records of common lizard within a 2 km search radius of the site between 2007 and 2012. The closest of these records is located 1,141m from the site.                                      |
|                                                                    | Birds                                                     | 272 records of 33 Amber listed bird species within a 2 km search radius of the site.                                                                                                             |

| DATA SEARCH RESULTS (SUMMARY) |                                                                                                                     |                                                                                                                                                                                                                                       |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Source                        | Species Data Response                                                                                               | Comment                                                                                                                                                                                                                               |
|                               |                                                                                                                     | 263 records of 20 Red listed bird species within a 2 km search radius of the site.<br><br>All of the above records were recorded between 1973 and 2020. The closest records are located approximately 283m from the development site. |
|                               | Barn Owl                                                                                                            | Two records of barn owl within a 2 km search radius of the site between 2008 and 2014. The closest of these records is located 349m from the site.                                                                                    |
|                               | Bats (Common Pipistrelle, Noctule, Daubenton's Bat, Lesser Horseshoe Bat and an unidentified <i>Myotis</i> species) | 10 records of four identified bat species within a 2 km search radius of the site, all recorded in 2007. The closest of these records is a common pipistrelle located 637m from the site.                                             |
|                               | Otter                                                                                                               | Two records of otters within a 2 km search radius of the site, both in 2008. The closest of these records is located 612m from the site.                                                                                              |
|                               | Water Vole                                                                                                          | No records within a 2 km search radius of the site.                                                                                                                                                                                   |
|                               | Brown Hare                                                                                                          | Two records of brown hare within a 2 km search radius of the site in 2016. The closest of these records is located 1,888m from the site.                                                                                              |
|                               | Dormice                                                                                                             | No records within a 2 km search radius of the site.                                                                                                                                                                                   |
|                               | Hedgehog                                                                                                            | Six records of hedgehog within a 2 km search radius of the site between 2007 and 2019. The closest of these records is located 1,807m from the site.                                                                                  |
|                               | Badger                                                                                                              | No records within a 2 km search radius of the site.                                                                                                                                                                                   |

Note: adapted from information provided by Aderyn

## APPENDIX 4 - RELEVANT LEGISLATION AND POLICY

### LEGISLATION

The Natural Environment & Rural Communities (NERC) Act 2006 (replaced by the Environment (Wales) Act, 2016 in Wales) places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

### BADGERS

In the British Red List badgers are categorised as ‘Least Concern’ (Mammal Society, 2018). Badgers are protected in the UK under the Protection of Badgers Act (1992), making it an offence to:

- Kill, injure or take a badger;
- To cruelly ill-treat badgers;
- To dig for a badger;
- Possess a badger or any part of a dead badger;
- Intentionally or recklessly damage, destroy, or obstruct access to any part of a sett;
- Disturb a badger whilst it is occupying a sett.

However, this legislation is welfare based. It is not based upon conservation needs as badgers are considered to be a widespread and common species throughout most of the UK.

### BATS

There are 18 resident species of bat in Britain (Mammal Society, 2018). All species of bat in Britain are ‘European Protected Species’ and are protected under the Conservation of Habitats and Species Regulations 2017, and the Wildlife and Countryside Act 1981, as amended by the Environmental Protection Act 1990 and the Countryside & Rights of Way Act 2000. These pieces of legislation combine to give substantial protection to bats and their habitats, making it an offence to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
- Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat;
- Intentionally or recklessly obstruct access to a bat roost.

### COMMON REPTILES

In Britain there are four relatively widespread native species of reptile: the adder; grass snake; common lizard and slow worm. These species are protected via part of Section 9(1) of the Wildlife & Countryside Act 1981 (as amended) against:

- Intentional killing and injuring;
- Selling, offering or exposing for sale.

Two other species of reptile: the sand lizard and smooth snake are ‘European Protected Species’. It is illegal to injure, kill, disturb, capture, keep or sell them, or to damage or destroy the habitats in which they live.

#### DORMICE

In the British Red List dormice are categorised as ‘Vulnerable’ in England and Wales and are not recorded in Scotland (Mammal Society, 2018). The hazel dormouse is a ‘European Protected Species’ and is fully protected under national and European legislation. It is listed on Annex IVa of the Habitats Directive and the Directive is transposed into UK law through the Conservation of Habitats and Species Regulations 2017. They are also protected by the Wildlife and Countryside Act 1981, as amended by the Environmental Protection Act 1990 and the Countryside & Rights of Way Act 2000. Dormice are also listed as a Species of Principal Importance under the Natural Environment and Rural Communities (NERC) Act (2006). These pieces of legislation combine to give substantial protection to dormice and their habitat, making it an offence to:

- Intentionally kill, injure or take a dormouse;
- Possess or control any live or dead specimen or anything derived from a dormouse (unless it can be shown to have been legally acquired);
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a dormouse;
- Intentionally or recklessly disturb a dormouse while it is occupying a structure or place which it uses for that purpose.

#### GREAT CRESTED NEWTS

The great crested newt is a ‘European Protected Species’ and is listed on both Annex II and IV of the EC Habitats Directive. The Directive is transposed into UK law through the Conservation of Habitats and Species Regulations 2017. They are also protected by the Wildlife and Countryside Act 1981, as amended by the Environmental Protection Act 1990 and the Countryside & Rights of Way Act 2000. These pieces of legislation combine to give substantial protection to great crested newts and their breeding ponds and terrestrial habitat, making it an offence to:

- Deliberately capture, injure or kill a great crested newt;
- Intentionally or recklessly disturb a great crested newt in a structure or place that they use for shelter or protection or deliberately disturb a group of a great crested newts;
- Damage or destroy a great crested newt resting place/shelter (even if they are not occupying it at the time);
- Possess or advertise/sell/exchange a great crested newt (dead or alive) or any part of a great crested newt (including eggs and all life-stages);
- Intentionally or recklessly obstruct access to a great crested newt resting place/shelter.

#### HEDGEHOGS

In the British Red List hedgehogs are categorised as ‘Vulnerable’ in the UK (Mammal Society, 2018). The population of hedgehogs in Britain is suffering from a serious decline. The most recent analysis of the research done through the combined work of the British Hedgehog

Preservation Society and the People's Trust for Endangered Species indicates that urban populations have fallen by up to 30% and rural populations by at least 50% since the turn of the century. The Mammal Society have estimated that the population of hedgehogs in the UK have declined by as much as 73% between 1995 and 2010 (Mammal Society, 2018).

Currently, hedgehogs have only limited legal protection in the UK. They are listed on schedule 6 of the Wildlife and Countryside Act (1981) which makes it illegal to kill or capture wild hedgehogs. They are also listed under the Wild Mammals Protection Act (1996), which prohibits cruel treatment of hedgehogs.

New planning guidelines state that small holes (of 13cm<sup>2</sup>) must be included in the base of all fences in new developments, creating 'highways' that enable hedgehogs to roam freely between properties to forage.

### NESTING BIRDS

All wild bird nests are protected under The Wildlife and Countryside Act 1981 (as amended), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting.

### BARN OWLS

The barn owl is included in the list of strictly protected fauna and appears in Appendix II of the Berne Convention (Convention on the Conservation of European Wildlife and Natural Habitats). They are also afforded protection under Schedule One of the Wildlife and Countryside Act (1981). This act has been amended on several occasions, most recently by the Countryside and Rights of Way (CROW) Act 2000, the Natural Environment and Rural Communities (NERC) Act 2006 and by the Conservation of Habitats and Species Regulations 2010 and 2017, making it an offence to:

- Intentionally and recklessly disturb barn owls whilst they are building a nest or are in, on or near a nest containing eggs or young, or to disturb their dependent young.

### OTTERS

The European otter is the only native UK otter species. In the British Red List otters are categorised as 'Least Concern' in England, and 'Vulnerable' in Wales and Scotland (Mammal Society, 2018). Otters are a European protected species (EPS) and are also fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to:

- Capture, kill, disturb or injure otters (on purpose or by not taking enough care);
- Damage or destroy a breeding or resting place (deliberately or by not taking enough care);
- Obstruct access to their resting or sheltering places (deliberately or by not taking enough care);

- Possess, sell, control or transport live or dead otters, or parts of otters.

## WATER VOLES

In the British Red List water voles are categorised as ‘Endangered’ in England, ‘Critically Endangered’ in Wales, and ‘Near Threatened’ in Scotland (Mammal Society, 2018). Water voles are protected in the UK under the Conservation of Habitats and Species Regulations, 2017 and Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This legislation makes it an offence to:

- Intentionally kill, take or injure a water vole;
- Possess or control any live or dead water vole, or any part or derivative (not including water voles bred in captivity under licence);
- Intentionally or recklessly damage, destroy or block access to a water voles place of shelter or protection (on purpose or by not taking enough care);
- Intentionally or recklessly disturb a water vole whilst it is occupying a structure or place which it uses for shelter or protection (on purpose or by not taking enough care).

## POLICY

### NATIONAL PLANNING POLICY FRAMEWORK (NPPF)

The National Planning Policy Framework (NPPF) states that the planning system should contribute to and enhance the natural and local environment by:

- Recognising the wider benefits of ecosystem services;
- Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

Other key principles of the NPPF relating to biodiversity are:

- The conservation of International and National statutorily designated sites;
- Protection of ancient woodland and veteran trees;
- The creation, protection, enhancement and management of networks of biodiversity and green infrastructure;
- The preservation, restoration and recreation of priority habitats and ecological networks;
- The recovery of priority species populations.

### HABITATS AND SPECIES OF PRINCIPAL IMPORTANCE

The NERC Act, 2006 requires the Secretary of State to publish lists of habitats and species which are of principal importance for the conservation of biodiversity in England, Wales and Scotland. The lists replace the UK Biodiversity Action Plans (UK BAP) and have been drawn up in consultation with Natural England, Natural Resources Wales and Scottish Natural Heritage as required by the Act. Section 7 of the Environment (Wales) Act, 2016 has now replaced the duty in section 41 of the NERC Act in relation to Wales, with a duty on public authorities to seek to maintain and enhance biodiversity.

The lists are used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 41 of NERC Act and section 7 of the Environment (Wales) Act, 2016, to have regard to the conservation of biodiversity when carrying out their normal functions.

#### HABITATS OF PRINCIPAL IMPORTANCE

Habitats of principal importance (HPI) are included on the lists. These are all the habitats in England, Wales and Scotland that were identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework.

#### SPECIES OF PRINCIPAL IMPORTANCE

Species of principal importance (SPI) are included on the lists. These are the species found in England, Wales and Scotland which were identified as requiring action under the UK BAP and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework.

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## QUALITY ASSURANCE

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This report format is designed to comply with statutory authority (*e.g.* Natural England, Natural Resources Wales and Scottish Natural Heritage) and the Chartered Institute of Ecology and Environmental Management relevant standing advice. Further studies may be required where there is evidence of protected species or if other notable ecological factors are found.

**Craig Emms MSc, MCIEEM**

**Linda Barnett BSc (Hons), PhD, MCIEEM**

Craig and Linda are professional ecologists with over 65 years of combined practical experience in nature conservation, wildlife research and management and ecological consultancy, gained from working in the UK and overseas. Craig has a MSc. in Ecosystems Analysis and Governance and Linda has a PhD in Genetics. Together they have carried out original academic research on a broad range of wildlife; insects, amphibians, reptiles, birds and mammals (including bats), and published the results as scientific papers in a number of international peer-reviewed journals. Linda co-authored the Species Action Plans for Britain's eight most endangered butterflies while working for Butterfly Conservation, and has supervised students in research projects on hazel dormouse, great crested newts and moths whilst she was co-ordinating and lecturing on a Masters course in Analytical Biology at the University of Warwick. Craig was also a lecturer in ecological methods on two Masters courses at the University of Warwick. Linda and Craig are skilled and practiced field ecologists, especially with regard to wildlife and countryside management. They are licenced by Natural England as bat and great crested newt surveyors (and are volunteer bat roost visitors/handlers for Natural England and registered bat carers for the Bat Conservation Trust) and have an extensive and broad experience of a great variety of field surveys including mammals (otter, badger, water vole and bat), birds, reptiles, amphibians, dragonflies, butterflies and moths. Both have undergone training in the use of eDNA methodology and field sample collection. Craig is also licenced by Natural Resources Wales as a bat and great crested newt surveyor, by the British Trust for Ornithology as a bird nest recorder, and has been the named ecologist and clerk of works on many bat mitigation and compensation (development) licences.

Please be aware that ecological reports generally have a limited period of currency. Many statutory authorities now regard one year as the maximum time that should elapse before a report will need to be updated. Where a European Protected Species licence is to be applied for once planning permission has been granted, a walk-over of the site should be carried out within three months of an application being submitted to check that the habitats have not changed significantly since the survey was carried out.

It is a requirement under the CIEEM code of practice to provide recorded data to biological record centres. For certain records (*i.e.* data obtained under a government survey licence) we also have a legal obligation to forward such data.

If you have special cause to restrict the distribution of this data (which will be in the public domain), please contact us to discuss this further within one month of the issue of this report.

Any information relating to legal matters, designs, specifications, advice, suggestions, or comments written or verbal in this report is provided in good faith and for consideration only, and does not purport in any way to give any advice on or interpretation of the law whatsoever. Professional legal advice should always be sought.

*Note. Whilst all due and reasonable care is taken in the preparation of reports, Craig Emms and Linda Barnett accept no responsibility whatsoever for any consequences of the release of this report to third parties. Please be aware that site surveys inevitably miss species not apparent on the date of visit(s) by reason of seasonality, mobility, habits or chance. Results are indicative and given in good faith but they are not a guarantee of presence or absence of any particular taxa.*