

# *Greenscape Environmental Ltd*

**R&R ENGINEERING**

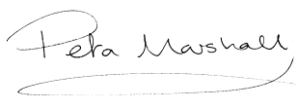
**ECOLOGICAL APPRAISAL**

**SITE ADJACENT TO  
OAK ROAD  
WREXHAM INDUSTRIAL ESTATE  
WREXHAM  
LL13 9RG**

**SEPTEMBER 2019**

**2206 1909R**

**Report by Chloe Sheil MZool (Conservation)**

|                               |                                                                      |                                                                                    |                   |
|-------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------|
| <b>Report Classification:</b> |                                                                      | Ecological Appraisal                                                               |                   |
| <b>Report Status:</b>         |                                                                      | Final                                                                              |                   |
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|                               | <b>Name</b>                                                          | <b>Signature</b>                                                                   | <b>Date</b>       |
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The report should be read in its entirety.

Questions arising from the survey report should be directed to the author of this report who will be pleased to clarify any technical issues raised.

Whilst the surveyors make every reasonable effort, Greenscape Environmental Ltd cannot guarantee that all protected species have been identified and survey results are definitive. Many species are cryptic and transitional in habit.

Reports are considered valid for one year for planning purposes after which time further survey information may be required.

Greenscape Environmental Ltd can provide advice and support for recommendations and planning conditions.

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# 1 Summary

## 1.1 Purpose of the Report

Greenscape Environmental Ltd was commissioned by Gareth Edwards to undertake an Ecological Appraisal of land at Wrexham Industrial Estate to provide supporting information for a planning application for construction of 4 industrial units.

The survey report has three principal aims:

- to provide an initial appraisal of the ecological value of the site in local context
- to provide details supporting further surveys that may be required
- to identify potential ecological constraints relating to the development and recommend measures to avoid, reduce or manage negative effects and to provide a net ecological gain

## 1.2 Methodology

The appraisal of the site included a desk study of the area and a phase 1 environmental appraisal undertaken at the site, OS grid reference SJ39024921 on 16<sup>th</sup> May 2019 by B Jones and C Sheil.

## 1.3 Key Issues

No designated sites were found within the vicinity of the site. Therefore, no negative impact is expected from the development.

Records of protected species within 2km include typical bat species, badger, otter, barn owl and great crested newt. Of particular interest/concern for this site was bats, nesting birds and great crested newts.

The site comprises a yard of hardstanding with patches of grassland used for storage of industrial materials. The site is bound by metal fencing. A shelter lies to the southwest.

The terrestrial habitat on site is of no value to GCN as it is mostly hardstanding. Five ponds are within 250m of the site. Pond 1 scored 0.57 – Below Average and pond 2 scored 0.67 – Average on the HSI assessment. The remaining 3 ponds are unsuitable or dried up. eDNA testing of pond 2 confirmed presence.

As there is negligible value of the site to GCN in their terrestrial phase, phase 2 surveys for newts are not considered necessary. It is considered unlikely that GCN will be found on site and favourable conservation status is likely to be maintained in the area. A strict method statement will be followed to minimise the risk to any individual GCN.

## 1.4 Impacts and Mitigation Measures

It is recommended that the biodiversity is enhanced post-construction with the inclusion of bat and bird boxes. Any vegetation clearance will be conducted at a suitable time of year to minimise negative impact on birds. A method statement outlining reasonable avoidance measures for GCN will be followed. This is deemed sufficient to create a scenario in which the risk to individual newts is negated.

There are no other ecological constraints to the development as currently proposed.

## 2 Introduction

This report has been compiled by Chloe Sheil MZool (Conservation) who has been assisting in conducting ecological appraisals since 2018. It has been reviewed in line with Greenscape's Quality Management System.

For details of surveyors and licences please see Appendix A.

### 2.1 Project Background

Greenscape Environmental Ltd was commissioned by Gareth Edwards of Design and Planning Associates, on behalf of the client, R&R Engineering, to conduct a survey to determine the presence of protected species and potential for the damage or destruction of habitats of ecological value, as part of the planning application for the development of land adjacent to Oak Road, Wrexham Industrial Estate.

The project involves the construction of 4 industrial units on what is currently hardstanding.

### 2.2 Purpose of the Report

The aim of this survey is to locate and describe, as far as reasonably practicable, evidence of wildlife, including all protected and Biodiversity Action Plan (BAP) priority species, which may be disturbed or lost in the event of development.

The purpose of the report is to:

1. Identify the key ecological constraints to the proposed development
2. Inform planning to allow significant ecological effects to be minimised or avoided wherever possible
3. Allow any necessary mitigation or compensation measures to be developed following the Mitigation Hierarchy
4. Identify any additional surveys that may be required to inform the ecological assessment
5. Identify the opportunities offered by a project to deliver ecological enhancement

### 2.3 Planning Policy and Legislation

This section provides a brief summary of the key national and local planning policies and legislation with an intention to identify those to be of most relevance to ecology and provide context to the surveys conducted. Survey findings were considered in line with the following.

The Conservation of Habitats and Species Regulations (2017) – as listed in:

Schedule 2. European protected species of animals

Schedule 5. European protected species of plants

The Wildlife and Countryside Act (1981) – as listed in:

Schedule 1. Birds protected by special penalties at all times

Schedule 5. Protected animals

Schedule 8. Protected plants

Countryside and Rights of Way Act (2000)

The Protection of Badgers Act 1992

Natural Environment and Rural Communities Act 2006 (NERC 2006)

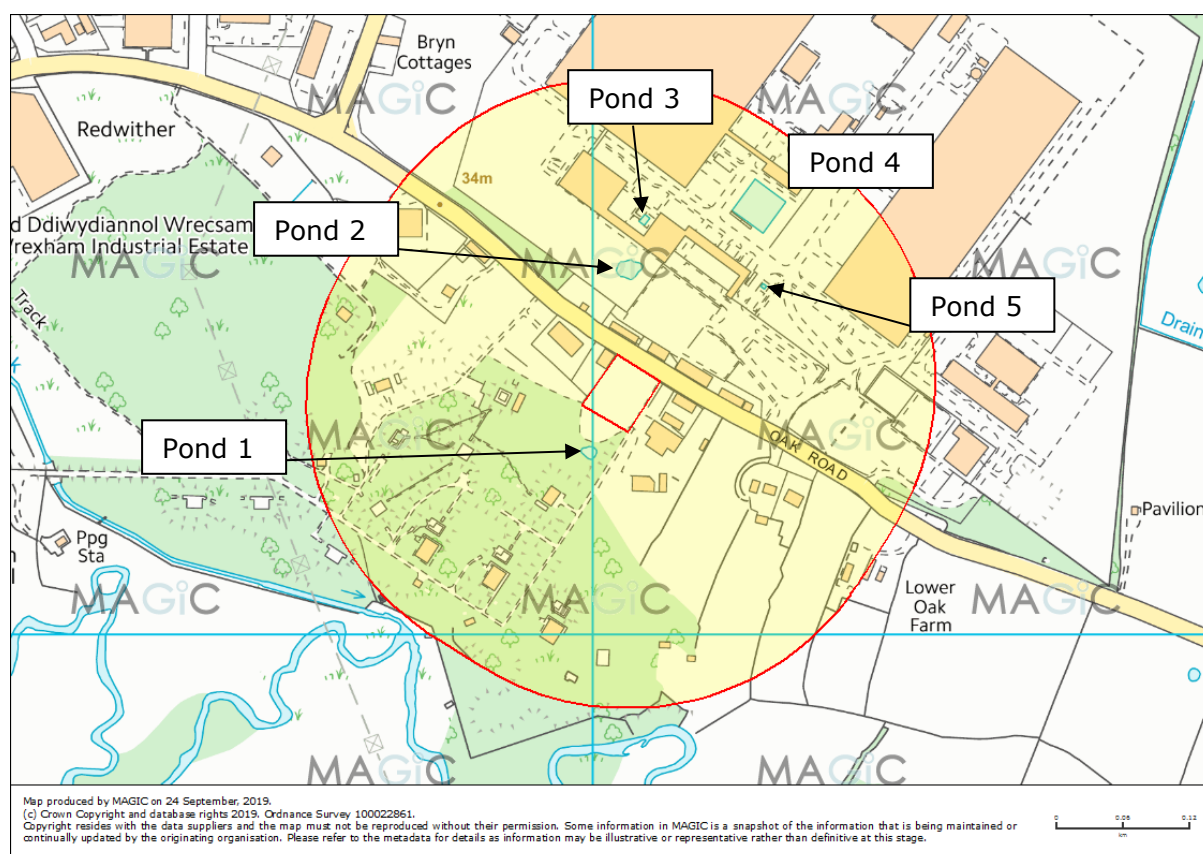
Section 7 of the Environment Act (Wales) 2016

ODPM Circular 06/2005: Biodiversity and Geological Conservation-Statutory obligations and their impact within the Planning System

Wrexham Unitary Development Plan – EC6 Biodiversity Conservation

## 2.4 Site Context and Location

The site is located to the southeast of Wrexham Industrial Estate, OS grid reference SJ39024921. It is set in a rural environment surrounded by the rest of Wrexham Industrial Estate and woodland to the southwest. There is high connectivity to the surrounding countryside via the adjacent woodland which may provide foraging/commuting opportunities for bats, nesting birds, badgers and great crested newts.



**Figure 2.1. An OS map showing the site (centre, highlighted) with a 250m buffer**

Scrutiny of the OS map (Fig 2.1) and a walk around the locality showed there are 5 ponds within 250m of the site.

### 2.4.1 Date and Survey Conditions

The phase 1 ecological appraisal was undertaken at the site on 16<sup>th</sup> May 2019 by B Jones and C Sheil. The conditions on the survey dates were optimal for the type of survey conducted.

**Table 2.1: Survey date and conditions**

| Date       | Time | Temp °C | Condition                 |
|------------|------|---------|---------------------------|
| 16/05/2019 | 9:30 | 17      | Sunny, clear sky, no rain |

### **3 Methodology**

Broad methodologies for data collection and interpretation were informed by guidance outlined in CIEEM (2017) Guidelines for Preliminary Ecological Appraisal.

#### **3.1 Desk Study**

The desk study provides contextual information such as the site's proximity to designated areas and known records of protected/notable species. This assists with the evaluation of the ecological value of the site. This was undertaken in May 2019 with data being supplied by COFNOD.

This level of desk study is considered adequately proportionate to the development proposals, the low complexity of the site and its surrounding landscape context.

#### **3.2 Field Survey**

##### **3.2.1 Habitats**

The level of survey is aimed to identify field signs of, or habitats with the potential to support protected species and therefore assist in the determination for detailed phase 2 surveys.

#### **3.3 Species Survey**

Trees and buildings were assessed for potential for bat roosts, foraging and commuting. This was conducted in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines 3<sup>rd</sup> edition, BCT, Collins (ed.) (2016).

Badgers surveys were conducted using guidance from Scottish Natural Heritage commissioned Report No. 096 (2003).

Trees and buildings were assessed for potential for nesting birds.

The assessment of aquatic habitat for great crested newts is based on the Habitat Suitability Index (HSI).

The terrestrial habitats at the application site were surveyed and assessed regarding their suitability and potential value in supporting great crested newts.

eDNA surveys to establish presence or absence were conducted.

#### **3.4 Constraints of the Survey**

All areas were accessible for this survey. It was conducted at an optimal time of the year for the assessment of flora and fauna. Standard techniques were followed, as outlined in Appendix B. No specific constraints have been identified.

## 4 Site Description

### 4.1 Field Survey-Phase 1 Description and Observations

The site comprises a yard of hardstanding with patches of grassland used for storage of industrial materials which are all raised off the ground. The site is bound by metal fencing and trees. A small shelter lies to the southwest.

A map showing phase 1 habitat codes is not considered necessary for this site due to its lack of complexity and size.

#### 4.1.1 Yard

The yard consists of hardstanding currently used as storage for industrial materials which are raised off the ground. Small areas of grassland were found along the site edges. Species include meadowgrass (*Poa Annua*), Yorkshire fog (*Holcus lanatus*), thistle (*Cirsium arvense*), garlic mustard (*Alliaria petiolata*), common hogweed (*Heracleum sphondylium*), wood sorrel (*Oxalis acetosella*), oxeye daisy (*Leucanthemum vulgare*) and eggs and bacon plant (*Lotus corniculatus*). No evidence of badger was found.



**Figure 4.1 Overview of yard**



**Figure 4.2 Stored materials along northwest**

#### 4.1.2 Boundaries

The boundary along the northeast and part of the boundary along the northwest consist of palisade security fencing. Part of the south eastern boundary consists of metal mesh fencing.



**Figure 4.3 Palisade fencing along north western and north eastern boundary**



**Figure 4.4 Wire mesh fencing along southeast**

There is no formal boundary along the southwest of the site as the development site is a section of a storage yard.

### 4.1.3 Surrounds

The site is surrounded by industrial buildings to the northwest, northeast and southeast. The remaining section of the storage yard and woodland lies to the southwest.



**Figure 4.5 Industrial buildings**



**Figure 4.6 Woodland to the southwest**

### 4.1.4 Open Water

Ponds within 250m have been taken into consideration

**Table 4.1: Ponds within 250m**

| Pond Number | OS Grid Reference | Distance from Site | HSI Score            | eDNA results |
|-------------|-------------------|--------------------|----------------------|--------------|
| 1.          | SJ38994916        | 30m                | 0.57 – Below average | -            |
| 2.          | SJ39034933        | 70m                | 0.67 - Average       | Positive     |
| 3.          | SJ39044937        | 120m               | -                    | -            |
| 4.          | SJ39154938        | 170m               | -                    | -            |
| 5.          | SJ39154931        | 130m               | -                    | -            |

Each of these ponds was assessed using the Habitat Suitability Index (HSI) unless it was found to be dry or extinct.

The results from the HSI calculations and justifications for each value can be seen in the following tables.

### Pond 1

This was very overgrown and access to the water edge could not be gained. The water edge could not be seen but the water level was seen to be very low and heavily dominated by filamentous algae. Emergent vegetation includes yellow flag iris (*Iris pseudacorus*). Woodland lies to the southwest providing foraging and shelter for any GCN in the terrestrial phase.



Figure 4.7 Pond 1

Table 4.2: Details of HSI score for Pond 1

| Pond 1 Grid reference: SJ38994916 |                             |                                                                                                                                                                     |
|-----------------------------------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Geographic Location</b>        | 1                           | Zone A                                                                                                                                                              |
| <b>Pond Area</b>                  | 0.1                         | The pond was less than 100m <sup>2</sup> at the time of the survey                                                                                                  |
| <b>Permanence</b>                 | 0.9                         | Never dries                                                                                                                                                         |
| <b>Water Quality</b>              | 0.33                        | Light almost completely blocked into the pond by emergent vegetation and algae so few submerged plants. Netting not possible.                                       |
| <b>Shade</b>                      | 0.3                         | There was estimated to be 90% shading of the area within 1m of the perimeter                                                                                        |
| <b>Waterfowl</b>                  | 1                           | No waterfowl were observed on the pond                                                                                                                              |
| <b>Fish</b>                       | 0.67                        | No evidence of fish but local conditions suggest they may be present                                                                                                |
| <b>Pond Count</b>                 | 1                           | There were 32 ponds within a 1km radius.                                                                                                                            |
| <b>Terrestrial Habitat</b>        | 0.67                        | The immediate surrounding land to the southwest is a woodland area, however this made up significantly about 30% of the 250m radius area. The rest is hardstanding. |
| <b>Macrophytes</b>                | 0.95                        | There was a lot of floating or emergent vegetation in this pond, cover was estimated to be >60%.                                                                    |
| <b>HSI Score</b>                  | <b>0.57 – Below Average</b> |                                                                                                                                                                     |

## Pond 2

This pond had trees around the entire perimeter providing a lot shade and it had dried slightly due to the warmer weather. Submerged plants were found but no eggs were seen. This pond was tested for eDNA, which came back positive.



**Figure 4.8 Pond 2**

**Table 4.3: Details of HSI score for Pond 2**

| <b>Pond 2 Grid reference: SJ39034933</b> |                       |                                                                                                                                                                                              |
|------------------------------------------|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Geographic Location</b>               | 1                     | Zone A                                                                                                                                                                                       |
| <b>Pond Area</b>                         | 0.4                   | The pond was approximately 200m <sup>2</sup> at the time of the survey                                                                                                                       |
| <b>Permanence</b>                        | 0.9                   | Never dries                                                                                                                                                                                  |
| <b>Water Quality</b>                     | 0.67                  | Moderate invertebrate diversity. Submerged plants found                                                                                                                                      |
| <b>Shade</b>                             | 0.4                   | There was estimated to be 90% shading of the area within 1m of the perimeter                                                                                                                 |
| <b>Waterfowl</b>                         | 1                     | No waterfowl were observed on the pond                                                                                                                                                       |
| <b>Fish</b>                              | 1                     | No records of fish stocking and no fish revealed during survey                                                                                                                               |
| <b>Pond Count</b>                        | 1                     | There were 31 ponds within a 1km radius.                                                                                                                                                     |
| <b>Terrestrial Habitat</b>               | 0.33                  | The immediate surrounding land is hardstanding. There is woodland to the southwest however this made up significantly less than 25% of the 250m radius area and is separated by poor habitat |
| <b>Macrophytes</b>                       | 0.6                   | There was very little floating or emergent vegetation in this pond, cover was estimated to be <30%                                                                                           |
| <b>HSI Score</b>                         | <b>0.67 - Average</b> |                                                                                                                                                                                              |

**Pond 3**

This pond was dried up at the time of the phase 1 survey.



**Figure 4.9 Pond 3**

**Pond 4**

This is a large pond which is ornamental. The water is chlorinated and used in the adjacent factory for cooling. Any GCN in the area would not survive in this pond.



**Figure 4.10 Pond 4**

**Pond 5**

This is a small ornamental pond covered in algae and emergent vegetation. It is an ornamental pond and is set below ground level surrounded by a vertical edge of concrete. If newts were to enter this pond they would not be able to escape. Of the vegetation that could be seen no egg laying material was found. This pond is considered unsuitable for great crested newts.



**Figure 4.11 Pond 5**

## 5 Evaluation of Results

### 5.1 Potential Impacts on Designated Sites and Recorded Species

#### 5.1.1 Designated Areas

Figure C.1 shows that there are no SSSI's within 1km. The nearest SSSI is approximately 2km away. This is Afon Dyfrdwy (River Dee). Given the distance to the site no negative impact is expected.

### 5.2 Habitats on Site

**Table 5.1: Summary of habitats on site**

| Habitat type | Is the habitat capable of supporting protected species       | Impact without consideration |
|--------------|--------------------------------------------------------------|------------------------------|
| Hardstanding | Concrete and gravel                                          | No negative impact           |
| Fence        | Metal security fencing along boundaries. No ecological value | No negative impact           |

There is no habitat of value on site as the site consists of hardstanding, fences and stored materials which are raised off the ground.

### 5.3 Ecologically Important Species

**Table 5.2: Summary of protected species on site with recommendations**

| Species                 | Observations                                                                            | Impact without consideration | Recommendations                                                                            |
|-------------------------|-----------------------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------|
| <b>Mammals</b>          |                                                                                         |                              |                                                                                            |
| Bats                    | No suitable habitat on site                                                             | No negative impact           | No action required. Site to be enhanced post construction with the inclusion of bat boxes. |
| Badgers                 | No evidence found on or around site                                                     | No negative impact           | No action required                                                                         |
| <b>Birds</b>            |                                                                                         |                              |                                                                                            |
| Nesting birds           | No suitable habitat around site, no evidence seen.                                      | No negative impact           | No action required. New nest box provision.                                                |
| <b>Herpetofauna</b>     |                                                                                         |                              |                                                                                            |
| Great Crested Newts     | 5 ponds within 250m. Pond 2 returned a positive eDNA test. No terrestrial value on site | No negative impact           | No action required                                                                         |
| <b>Invasive species</b> |                                                                                         |                              |                                                                                            |
| Japanese knotweed       | No evidence found on site                                                               | No negative impact           | No action required                                                                         |
| Himalayan balsam        | No evidence found on site                                                               | No negative impact           | No action required                                                                         |

The relevant records for this site are typical bat species such as noctules, common pipistrelles and soprano pipistrelles within 600m, badger within 600m, hare within 800m, barn owl within 800m and GCN within 100m. The potential for the site to support bats, nesting birds and GCN was therefore taken into consideration.

Full records from the desk study can be found in Appendix C.

### 5.3.1 Bats

All bat species are protected under the Conservation of Habitats and Species Regulations 2017 which implements the EC Directive 92/43/EEC in the United Kingdom. It is an offence, with certain exceptions, to:

- deliberately capture or kill any wild animal of a European Protected Species.
- deliberately disturb any such animal.
- damage or destroy a breeding site or resting place of such a wild animal.
- keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal or plant of a European Protected Species, or any part of, or anything derived from such a wild animal or plant.

A person found guilty of an offence is liable on summary conviction to imprisonment for a term not exceeding six months or to an unlimited fine or to both.

No potential roosting habitat is present on or around site. No negative impact is expected. There is opportunity to install an artificial roost box to provide a minor enhancement.

### 5.3.2 Other Mammals

#### Badgers

Badgers and their setts are specifically protected under the Protection of Badgers Act 1992. The act was primarily brought into force to prevent the deliberate injury to or death of badgers. Some aspects of the act affect developers. It is important that developers are aware of any badger setts located on the land they intend to develop.

All personnel working on sites where there are badgers should be aware of the Protection of Badgers Act 1992. Under this legislation it is an offence to:

- Damage a badger sett or any part of it.
- Destroy a badger sett.
- Obstruct access to, or any entrance of a badger sett.
- Causing a dog to enter a badger sett.
- Disturbing a badger when it is occupying a badger sett.

A badger sett is defined by the Act as "any structure or place, which displays signs indicating current (within the last 12 months) use by a badger".

No evidence of badgers was found on or around the site so negative impact is expected from the development.

### 5.3.3 Birds

Under Section 1 of the Wildlife and Countryside Act 1981 (as amended), birds, their nests and young are all protected from damage, particularly during the breeding season. The Act allows for fines or prison sentences for every bird, egg or nest destroyed. It makes it an offence to:

- Intentionally kill, injure or take any wild bird.
- Take, damage or destroy the nest of any wild bird whilst it is in use or being built.
- Take damage or destroy the egg of any wild bird.
- To have in one's possession or control any wild bird, dead or alive or egg or any part of a wild bird or egg.

Work at this site will not include the removal of any potential habitat for nesting birds as there is none on site so no negative impact on nesting birds is expected. It will be recommended that nesting boxes are erected post-construction to provide a minor enhancement.

### 5.3.4 Amphibian and Reptiles

All species of amphibians receive a measure of protection under legislation.

The Wildlife and Countryside Act 1981 has been amended by the Countryside and Rights of Way Act (CROW) 2000. This applies to England and Wales only. The key relevant fact is:

- Section 9(4) is amended to create an additional offence of reckless damage to, destruction of, or obstruction of access to, any structure or place used for shelter or protection; and reckless disturbance while occupying such a structure or place.

This means that any application for planning permission has to offer mitigation to the planners to alleviate any potential damage (i.e. provide reasonable avoidance).

### Great Crested Newts

Great crested newts are protected under the Conservation of Habitats and Species Regulations 2017 which implements the EC Directive 92/43/EEC in the United Kingdom. It is an offence, with certain exceptions, to:

- Deliberately capture or kill any wild animal of a European Protected Species.
- Deliberately disturb any such animal.
- Deliberately take or destroy eggs of any such wild animal.
- Damage or destroy a breeding site or resting place of such a wild animal.
- Keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal or plant of an European Protected Species, or any part of, or anything derived from such a wild animal or plant.

Great crested newts are listed as a priority species on the UK BAP and Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

A person found guilty of an offence is liable on summary conviction to imprisonment for a term not exceeding six months or to an unlimited fine, or to both.

Work can be conducted under derogation licence from Natural Resources Wales providing suitable compensation and mitigation is provided and the "three tests" can be met. These are:

1. Regulation 55(2)(e) states: a licence can be granted for the purposes of "preserving public health or public safety" or other imperative reason of overriding public interest

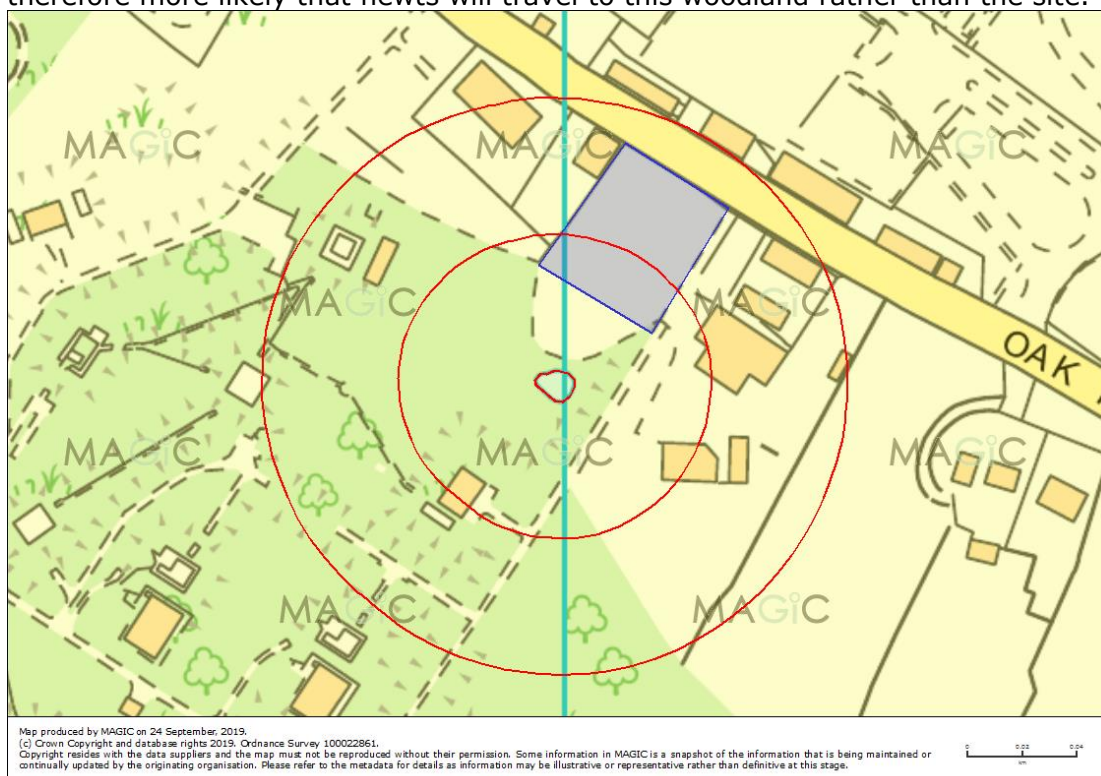
including those of a social or economic nature and beneficial consequences of primary importance for the environment.

2. Regulation 55(9)(a) States: the appropriate authority (Natural Resources Wales) shall not grant a licence unless they are satisfied "that there is no satisfactory alternative"
3. Regulation 55(9)(b) states that the appropriate authority shall not grant a licence unless they are satisfied "that the action licensed will not be detrimental to the maintenance of the population of the species concerned at favourable conservation status in its natural range."

The site offers negligible value terrestrial habitat for GCN. The yard of hardstanding offers no foraging or shelter and the stored materials are raised off the ground on pallets so this also offers no foraging or shelter. The site is also regularly disturbed by constant movement of materials and machines. There are no features on site of any value for newts in their terrestrial phase. The total area of the site is approximately 0.4ha.

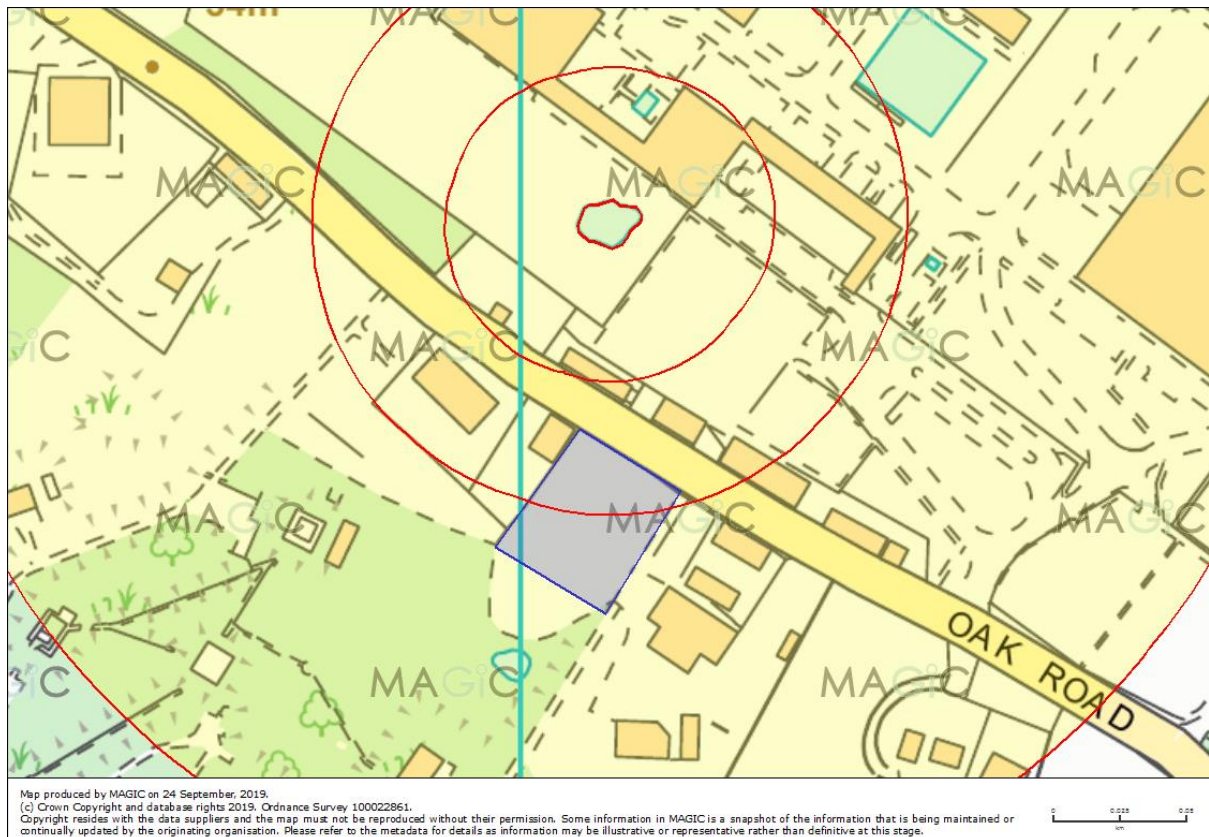
Five ponds were found within 250m of the site. Ponds 3, 4 and 5 were unsuitable for GCN or dried up. Pond 1 is nearest to the site and scored 0.57 – Below Average on the HSI assessment but this could not be surveyed due to the surroundings being so overgrown as to make access unsafe. Pond 2 scored 0.67 – Average on the HSI assessment and the eDNA test results for GCN were positive. However, it is separated from the site by low quality habitat and a busy road.

Although it is considered unlikely and no evidence of was seen that pond 1 contains a breeding population of great crested newts a worst-case scenario would be that it does support breeding newts. As can be seen below, the entire development area falls within 100m of pond 1. This area is sensitive to newts as they may easily travel this distance to forage or shelter. However, to the southwest of pond 1 and the site is a woodland which offers significantly greater value habitat to any great crested newts in the area. It is therefore more likely that newts will travel to this woodland rather than the site.



**Figure 5.1 50 and 100m buffers around the nearest pond**

The nearest pond confirmed to be used by breeding newts is pond 2. As can be seen below approximately 0.2ha of the site falls within 100m of the pond. However, it is separated from the site by a car park and a busy road which present significant barriers to terrestrial dispersal. It is considered unlikely that newts will cross this to reach the site.



**Figure 5.2 50 and 100m buffers around the nearest pond used by breeding GCN**

With a small area of negligible value to be lost, and the woodland to the southwest presenting a markedly superior terrestrial habitat, a licence from Natural Resources Wales is not considered necessary. Works will be conducted under a method statement with the knowledge that newts are present in the area. This will significantly lower the risk of damage or destruction of individual great crested newts. This will create a scenario within which the risk to newts is negated and the chance of a wildlife offence is negligible.

### 5.3.5 Invasive Species

#### Himalayan Balsam

Himalayan Balsam is identified as an invasive non-native plant. It is listed under Section 9 schedule 14 of The Wildlife and Countryside Act. It is illegal to plant or otherwise cause Himalayan Balsam to grow in the wild in the UK.

No evidence of any Himalayan balsam was found on site, so no negative impact is expected.

#### Japanese Knotweed

The management of Japanese knotweed (*Fallopia japonica*) is regulated by several pieces of legislation

- The Wildlife and Countryside Act (as amended) 1981
- The Environment Protection Act 1990
- The Waste (England & Wales) Regulations 2011
- Third party litigation where damages may be sought for allowing Japanese knotweed to spread onto other properties.

Japanese Knotweed is listed in Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to plant, cause the plant, or allow the plant to grow in the wild.

No evidence of any Japanese knotweed was found on the site, so no negative impact is expected.

## 6 Impacts and Mitigation Measures

To reduce or minimise negative impact on biodiversity, the following recommendations have been made.

### 6.1 Bats

Work can be conducted immediately once planning permission has been granted.

#### 6.1.1 Enhancements for Bats

1. It is recommended that provision will be made for roosting opportunities for bats with the erection of at least one Schwegler 3FF bat box or Kent-style bat box in the nearby trees or the new building. These will be erected at a height of 3-4m and in a southerly, westerly or easterly facing direction.



**Figure 6.1. Schwegler 3FF bat box**

#### 6.1.2 Lighting

1. A lighting scheme will be drawn up in line with ILP and BCT Guidance Note 08/18.
2. All of the newly proposed external lighting will be directed away from any vegetated boundary features to retain dark corridors for commuting bats across the site.
3. There will be no direct illumination of any of the enhancements erected around the site.
4. There will be no illumination of the trees to the southwest of the site.
5. All domestic external lighting will be below 1 lux, orientated towards the ground and set on a short timer, controlled by PIR (Passive Infra-Red).

## 6.2 Birds

### 6.2.1 Enhancements for Birds

1. It is recommended that a range of artificial woodcrete boxes are erected around the site to provide an enhancement for passerine birds. A selection of the following nest boxes is recommended.



Cedarwood Sparrow Terrace



Schwegler 1b Bird Box



Schwegler 1ZA Roundhouse  
Wren Box



Schwegler 2H Robin Box

**Figure 6.2: Provision for bird boxes**

## **6.3 Newts**

### **6.3.1 Reasonable Avoidance Measures**

#### **Pre-construction Phase**

1. The site will be kept clear, any plants that begin to grow will be kept short (<10cm) to ensure there is no shelter for great crested newts on the site.

#### **Site set up**

2. Soil and vegetation will be stripped prior to setting up the site compound to ensure the compound contains no vegetation which could potentially attract great crested newts.
3. All cabins and equipment will be located on firm compacted ground, preferably a stone or concrete base.
4. Contractors are advised not to handle newts at any time.

#### **Construction phase**

5. The Site Foreman will be responsible for ensuring all contractors are aware of the potential to find newts and that they are familiar with the appearance of newts. If in doubt the ecologist will be contacted.
6. Contractors are advised NOT to handle newts at any time.
7. Any plants around the site will be kept short to stop the development of a long sward suitable for the terrestrial habitat for newts.
8. Removal of any unwanted plants will be conducted between February and May when there is least opportunity for newts to be hibernating in the roots.
9. All work will be conducted during daylight hours as newts are least likely to move during this time.
10. Trenches will be dug and filled in on the day created or will be covered over with close fitting boards at the end of each working day and checked the following morning. This is particularly important when newts are most active, between March and November.
11. If necessary, a ramp will be placed in trenches to allow newts and small mammals to escape.
12. Any heavy machinery will be stored on an area of hardstanding to avoid refugia being created.
13. Stored material will be raised on pallets to reduce the potential they might act as a temporary resting place. This reduces the potential for damage or destruction of individual newts
14. All waste will be placed straight into skips to reduce the potential of creating refugia.
15. If a newt is found, then work WILL stop immediately, and the ecologist contacted for advice.
16. Great crested newts will not be handled or moved without express permission from Natural Resources Wales as this would constitute an offence.

**Personnel awareness and emergency procedures**

17. It will be ensured all construction workers and personnel are aware of great crested newts legal protection. This will be by a toolbox talk and the ongoing briefing of contractors by the site foreman.
18. A copy of this document will be on site at all times during construction work.
19. If any great crested newts are found on site at any time, the consultant will be contacted immediately for advice.
20. If a great crested newt is found on site, all construction activities should be stopped immediately until the consultant has advised how to proceed.
21. If a great crested newt is found on site, the animal should not be handled or moved from its resting place and any sheltering material should be carefully replaced. If there is immediate danger of injury (e.g. if the newt is found on a road) then the animal will be placed in a clean lidded bucket and stored in a cool but frost-free place for the ecologist to attend to.

**6.4 Timing of Works**

To avoid wildlife offences the following timing schedule will be adhered to.

| Action            | When                      | Justification                                                                                                                                                                                                               |
|-------------------|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Begin groundworks | Winter<br>October-January | There is no hibernation potential for newts within the yard itself. Beginning groundworks when newts are hibernating elsewhere will preclude the chance of damage or destruction of individuals as they will not be mobile. |

## 7 Concluding Remarks

The survey has focused on habitats to be damaged or destroyed as part of this development and the potential for disturbance or damage of protected species.

The survey has focused on nesting birds and GCN.

There is potential habitat for nesting birds in the trees to the southwest of the site. However, these are not to be removed. It is recommended that the site is enhanced by the erection of bird boxes.

The terrestrial habitat on site is of negligible value to GCN as it is mostly hardstanding and there is no shelter or foraging habitat available. Five ponds are within 250m of the site. Pond 1 scored 0.57 – Below Average and pond 2 scored 0.67 – Average on the HSI assessment. The remaining 3 ponds are unsuitable or dried up. eDNA testing of pond 2 confirmed presence.

A site-specific analysis was conducted; the negligible value of the site to GCN in their terrestrial phase and the presence of significantly higher value habitat off-site to the southwest suggest that it is unlikely that GCN will be found on site. A strict method statement will be followed to minimise the risk to any individual GCN.

The method statements provided in this report will be followed, and works will be done at a suitable time of year. This will result in there being no further ecological constraints to the development.

## **Appendices**

- A**        **Details of Surveyors**  
             Sheet(s): 1
- B**        **Detailed Methodology**  
             Sheet(s): 3
- C**        **Desktop Study**  
             Sheet(s): 2
- D**        **Site Plans**  
             Sheet(s): 1
- E**        **Bibliography**  
             Sheet(s): 1

## A Details of Surveyors

**Table A.1: Surveyor experience and licences**

| Name                          | Membership of associations/<br>experience                                                                                                                                                                                                                                                               | Licenses                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Peta Marshall<br>BSc(hons)MA  | <b>Principal Consultant</b><br>MCIEEM PIEMA<br>Peta has a degree in Applied Biology and has been working in commercial environmental assessment for over 10 years. She has 10+ years' experience surveying for protected species.<br><br>As a member of the CIEEM she is bound by professional conduct. | Holder of survey licenses for bats and newts in England and Wales. Registered Consultant for Low Impact Class Licence for Bats<br><br><u>England:</u><br>Bats - 2015-12200-CLS-CLS<br>BLICL - RC084<br>GCN - 2015-18939-CLS-CLS<br>Dormice - 2017-29225-CLS-CLS<br><u>Wales:</u><br>Bats - 77554:OTH:CSAB:2017<br>GCN - 77574:OTH:SA:2017 |
| Logan Maggs<br>BSc(hons)      | <b>Lead Consultant</b><br>Logan has a degree in Conservation and Land Management. He has 10 years' experience conducting environmental appraisals and phase 2 surveys for bats and newts in England and Wales.                                                                                          | Holder of survey licenses for bats and newts in England and Wales.<br><br><u>England:</u><br>Bats - 2016-24901-CLS-CLS<br>GCN - 2017-29218-CLS-CLS<br><u>Wales:</u><br>Bats - 75748:OTH:CSAB:2017<br>Newts - 79665:OTH:SA:2018                                                                                                            |
| Ben Jones<br>BSc(hons)<br>MSc | <b>Lead Consultant</b><br>Ben has a degree in Marine and Freshwater biology and a Master's degree in "Managing the Environment". He has 4 years' experience conducting environmental appraisals and phase 2 surveys for bats and newts in England and Wales.                                            | Holder of survey licenses for bats and newts in England and Wales.<br><br><u>England:</u><br>Bats - 2017-29112-CLS-CLS<br>GCN - 2016-25209-CLS-CLS<br><u>Wales:</u><br>Bats - S085098/1<br>GCN - 78716:OTH:SA:2018                                                                                                                        |
| Chloe Sheil<br>MZool          | Chloe has a master's degree in Zoology with Conservation from Bangor University. She has one years' experience assisting with surveys.                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                           |

## B Detailed Methodology

### Desk Study

**Table A: Data sources**

| Organisation/Resource | Information Assessed                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Local Records Centre  | Protected/UK BAP Species records (2km)                                                                                                                                                                                                                                                                                                                                                                                        |
| MAGIC website         | International statutory designations (1km) <ul style="list-style-type: none"> <li>• Special Protection areas (SPA)</li> <li>• Special Areas of Conservation (SAC)</li> <li>• RAMSAR sites</li> </ul> National statutory designations (1km) <ul style="list-style-type: none"> <li>• Sites of Special Scientific Interest (SSSI)</li> <li>• National Nature Reserves (NNR)</li> </ul> EPS Licenses for protected species (2km) |

A data search was purchased from Cofnod on the 7th May 2019.

A search on Multi Agency Geographic Information for the Countryside (Magic Maps) determined nearby designated areas. The map is presented in Appendix C.

### Field Survey

The level of survey is aimed to identify field signs of or habitats with the potential to support protected species and therefore assist in the determination for detailed phase 2 surveys.

Determination of Ecological Value is based on the general criteria provided by IEEM (IEEM 2006).

**Table B.1 Criteria of ecological values**

| Ecological Value | Description and Examples                                                                                                                                                                                                                                                                                                                                               |
|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| High             | Habitats or features that have high importance for nature conservation, such as statutory designated nature conservation sites of international or national importance or sites maintaining viable populations of species of international or national importance (e.g. Red Data Book species; European protected species).                                            |
| Medium           | Sites designated at a county or district level, e.g. Local Wildlife Site (LWS), ancient woodland site, ecologically 'important' hedgerows or ecological features that are notable within the context of a region, county or district (e.g. a viable area of a Priority Habitat on the county BAP or a site that supports a viable population of a county BAP species). |
| Low              | Sites of nature conservation value within the context of a parish or neighbourhood, low-grade common habitats, such as arable fields and improved grasslands and sites supporting common, widespread species.                                                                                                                                                          |

## **Species Surveys**

### **Bats**

Vegetation and buildings were assessed for potential for bat roosts, foraging and commuting.

An external assessment of all structures on site was undertaken to determine potential roost features (PRF) The potential suitability of the structures assessed was assigned a rating of low to high in accordance with table 4.1 of Bat Surveys for Professional Ecologists: Good Practice Guidelines 3<sup>rd</sup> edition, Collins (2016).

An internal assessment of all structures was undertaken by a Natural Resources Wales licensed surveyor for evidence of roosting bats such as droppings, feeding remains and staining.

All trees examined were categorised on their potential roost features. These features include cracks, splits in limbs, cavities, loose bark and thick stemmed ivy. Where appropriate these features were assessed using binoculars and/or endoscopes.

Daytime surveys were conducted with the aid of a strong torch and a pair of Pentax Papilio 8.5x21 close focus binoculars. Bat species may leave little evidence of their presence. Evidence for the presence of bats includes:

- Holes, cracks and rot holes used as roosts, marked by streaks of urine and faeces.
- Smoothed, darkened edges where bats have rubbed and left natural body oils when entering and exiting a space.
- Faeces under a roof access point, a well-used feeding point or a resting spot.
- Feeding signs such as discarded insect wings under a feeding point.
- Lack of cobwebs around eaves, roof spaces, beams or ceilings where routes are kept clear by bats.
- Presence of roosting or dead bats in or behind any object.

Methodology used is in accordance with recommendations by BCT, Bat Surveys for Professional Ecologists: Good Practice Guidelines 3<sup>rd</sup> edition, Collins (2016).

### **Badgers**

Surveys were conducted using guidance from Scottish Natural Heritage commissioned Report No 096 (2003).

Daytime surveys for badgers involved looking for:

- Scrapings where badgers have dug for food or used as latrines.
- Signs of a sett, including signs of use such as presence of badger hair
- Tracks and prints.

### **Birds**

Evidence of nesting birds, including barn owls using a building or tree involved looking for:

- Presence of nests
- Collections of droppings and/or feathers
- Highly distinctive droppings or splats under roosting points.
- Presence of owl pellets/feathers

**Amphibians and Reptiles**

The assessment of aquatic habitat is based on the Habitat Suitability Index (HSI) and is applied according to guidance set out by the Oldham 2000, superseded by ARG in 2010, ARG UK Advice note 5. The HSI is a quantitative method of assessing the potential quality of a body of water in terms of its ability to sustain a population of great crested newts.

The terrestrial habitats at the application site were surveyed and assessed for their suitability and potential value for the support of GCN. The general topography, ground conditions and presence or absence of vegetation were recorded. A refugia search was conducted for amphibians and reptiles by looking under any logs, large stones and other debris.

Egg searches were conducted by checking aquatic vegetation for folded leaves. Where possible, these leaves were unfolded to check for the presence of an egg. This is a destructive search, and so if a great crested newt egg was found the search was considered complete and no more leaves unfolded.

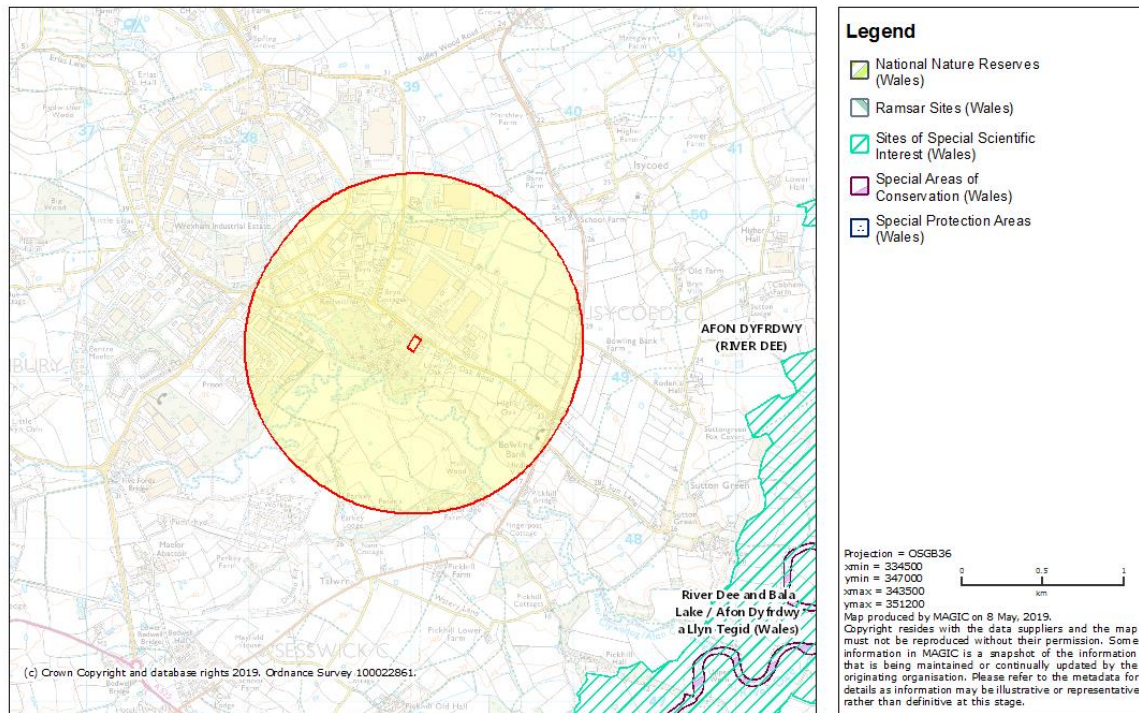
An eDNA test for great crested newts was conducted in accordance with the protocol set out in the Defra technical advice note WC1067, Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford. Water samples were analysed by NatureMetrics.

## C Desktop Study

### Designated Sites

MAGiC

#### Wrexham Industrial Estate



**Figure C.1: Designated sites within 1km of Wrexham Industrial Estate**

The map from Natural England presented in Figure C.1 indicates that the site is not within 1km of a designated area.

The nearest SSSI is approximately 2km east of the site. This is Afon Dyfrdwy (River Dee) and is a section of a river valley.

## Records

A desk search was conducted focussing on the area within 2km of the site. The following species have official records in that area:

### Bat species:

- Whiskered (*Myotis mystacinus*)
- Noctule (*Nyctalus noctula*)
- Common pipistrelle (*Pipistrellus pipistrellus*)
- Soprano pipistrelle (*P. pygmaeus*)
- Unknown pipistrelle (*Pipistrellus* sp.)
- Unknown bat (*Chiroptera* sp.)

The nearest records are of noctules, common pipistrelles and soprano pipistrelles approximately 600m away and are from 2016. The nearest records of whiskered bat are approximately 600m away, but these are from 1999. The nearest records of an unknown bat are approximately 800m away and are from 2015.

### Other mammals:

- Hare (*Lepus europaeus*)
- Otter (*Lutra lutra*)
- Badgers (*Meles meles*)

The nearest records of badger are within 400m but these are historic and are from 1983. The nearest records of hare are approximately 800m to the northeast and are from 2005.

### Birds

- Goshawk (*Accipiter gentilis*)
- Peregrine (*Falco peregrinus*)
- Kestrel (*Falco tinnunculus*)
- Barn owl (*Tyto alba*)

The nearest records of kestrel are approximately 500m away and are from 2008. The nearest records of goshawk and barn owl are within 800m and are from 2005. The nearest records of peregrines are within 1km and are from 2016.

### Amphibians and Reptiles

- Slow-worm (*Anguis fragilis*)
- Common toad (*Bufo bufo*)
- Smooth newt (*Lissotriton vulgaris*)
- Common frog (*Rana temporaria*)
- Great crested newt (*Triturus cristatus*)
- Adder (*Vipera berus*)

The nearest recent GCN record is approximately 100m to the north but these are historic and are from 1992. The nearest records of common toad are approximately 500m to the northwest, near Oak Road, and are from 2016. The nearest records of smooth newt are approximately 100m to the north, near Prysmian Cables & Systems, and are from 1992.

### Invasive species

- Japanese knotweed (*Fallopia japonica*)
- Himalayan balsam (*Impatiens glandulifera*)
- American mink (*Neovison vison*)

The nearest records of Himalayan Balsam are approximately 400m to the southwest, in a woodland, and are from 2016. The nearest records of American mink are approximately 800m to the northeast and are from 2005. The nearest records of Japanese knotweed are approximately 900m away and are from 2011.

D Site Plans



Figure D.1: Proposed plans

## E Bibliography

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Natural England – Nature on the Map, Magic Maps. Copyright Natural England, containing Ordnance Survey data, crown copyright and database right 2018:

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