

Greenscape Environmental Ltd

R&R ENGINEERING

ECOLOGICAL APPRAISAL

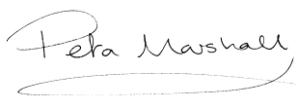
**SITE ADJACENT TO
OAK ROAD
WREXHAM INDUSTRIAL ESTATE
WREXHAM
LL13 9RG**

SEPTEMBER 2019

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Report by Chloe Sheil MZool (Conservation)

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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 four industrial units.

The survey report has the principal aims:

- to provide an initial appraisal of the ecological value of the site in local context
- 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 16th 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 1km include typical bat species, badger, otter, barn owl and great crested newt. Of particular concern for this site was 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.

The terrestrial habitat on site is of no value to great crested newts 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.

Since the phase 1 and submission of the original report, WCBC has reported that pond 1 has been found to contain a medium sized population of great crested newts. Given the distance to the site it is likely that great crested newts will be found on site during works.

1.4 Impacts and Mitigation Measures

The development must be done under a great crested newt derogation licence from Natural Resources Wales as an offence is likely to be committed. No further surveys are required prior to applying for this licence.

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.

2 Introduction

This report has been compiled by Chloe Sheil MZool (Conservation) who has 1 year of experience conducting ecological appraisals. 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 four 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)

The Nature Recovery Plan for Wales: Setting the course for 2020 and beyond (2015)

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 or commuting opportunities for bats, nesting birds, badgers and great crested newts.

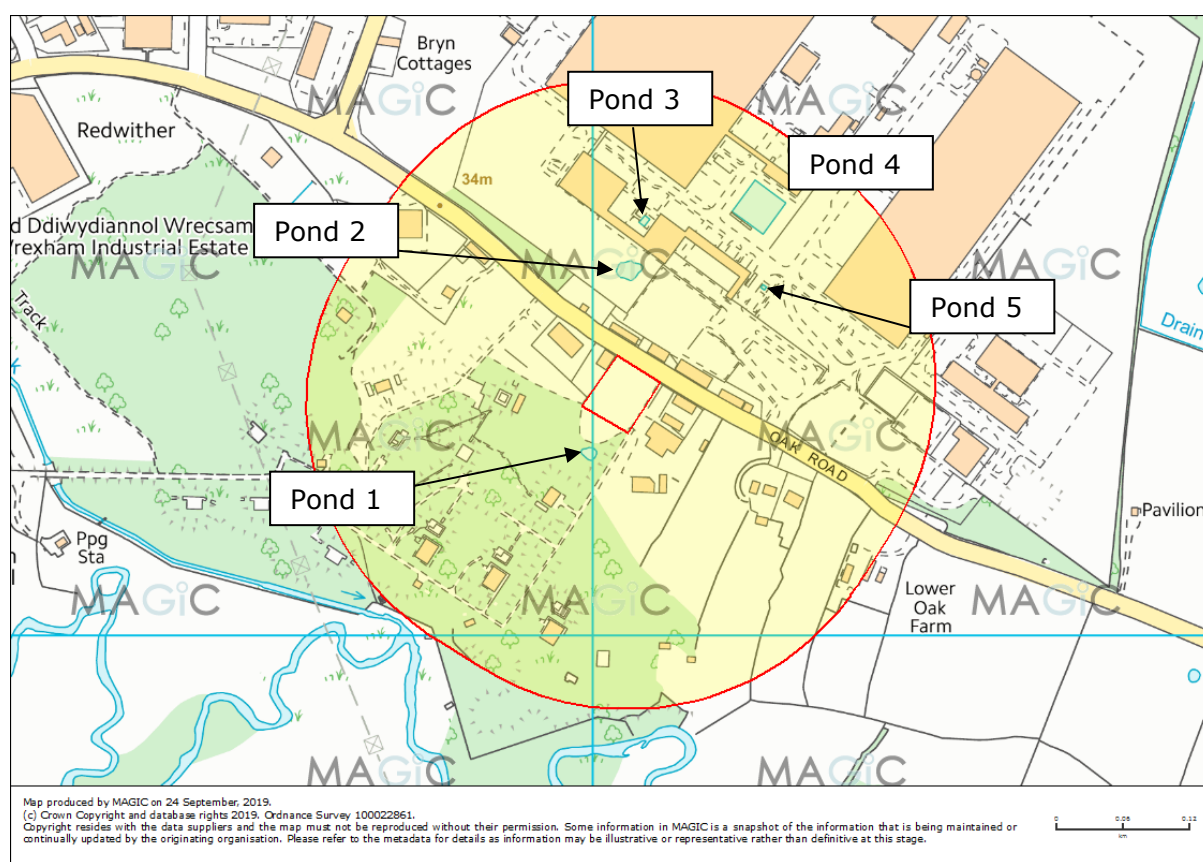


Figure 2.1. An OS map showing the site (centre, highlighted) with a 250m buffer

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 16th 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

An assessment of habitats was conducted following the JNCC Handbook for Phase 1 Surveys 2010. Target notes were used where appropriate to identify potential for protected or notable species or habitats, and to give more detailed site descriptions.

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

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

Trees 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 of great crested newts 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

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 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*). No evidence of great crested newts was seen. Woodland lies to the southwest providing foraging and shelter for any great crested newts in the terrestrial phase.



Figure 4.7 Pond 1

Table 4.2: Details of HSI score for Pond 1

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

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 eDNA tested, which came back positive.



Figure 4.8 Pond 2

Table 4.3: Details of HSI score for Pond 2

Pond 2 Grid reference: SJ39034933		
Geographic Location	1	Zone A
Pond Area	0.4	The pond was approximately 200m ² at the time of the survey
Permanence	0.9	Never dries
Water Quality	0.67	Moderate invertebrate diversity. Submerged plants found
Shade	0.4	There was estimated to be 90% shading of the area within 1m of the perimeter
Waterfowl	1	No waterfowl were observed on the pond
Fish	1	No records of fish stocking and no fish revealed during survey
Pond Count	1	There were 31 ponds within a 1km radius.
Terrestrial Habitat	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
Macrophytes	0.6	There was very little floating or emergent vegetation in this pond, cover was estimated to be <30%
HSI Score	0.67 - Average	

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 great crested newts 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
Mammals			
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
Birds			
Nesting birds	No suitable habitat around site, no evidence seen.	No negative impact	No action required. New nest box provision.
Herpetofauna			
Great Crested Newts	Five ponds within 250m. Pond 2 returned a positive eDNA test and pond 1 has since been found to support a medium population of GCN. No terrestrial value on site	Potential negative impact	Work must be conducted under licence from Natural Resources Wales. No further surveys are required.
Invasive species			
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 great crested newts within 100m. The potential for the site to support bats, nesting birds and great crested newts 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 great crested newts. 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.

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.

Five ponds were found within 250m of the site. Ponds 3, 4 and 5 were either unsuitable for great crested newts or completely dried up. Pond 1 is nearest to the site and scored 0.57 – Below Average on the HSI assessment. At the time of survey the immediate pond surrounds were heavily overgrown as to make complete access unsafe. Pond 2 scored 0.67 – Average on the HSI assessment and the eDNA test results for great crested newts was positive. However, it is separated from the site by low quality habitat and a busy road.

Since the original copy of the report was submitted, WCBC have reported that pond 1 has been surveyed and is confirmed to contain great crested newts, we have been told to presume a medium sized population is present, though this information was not present in the data search purchased from Cofnod.

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.

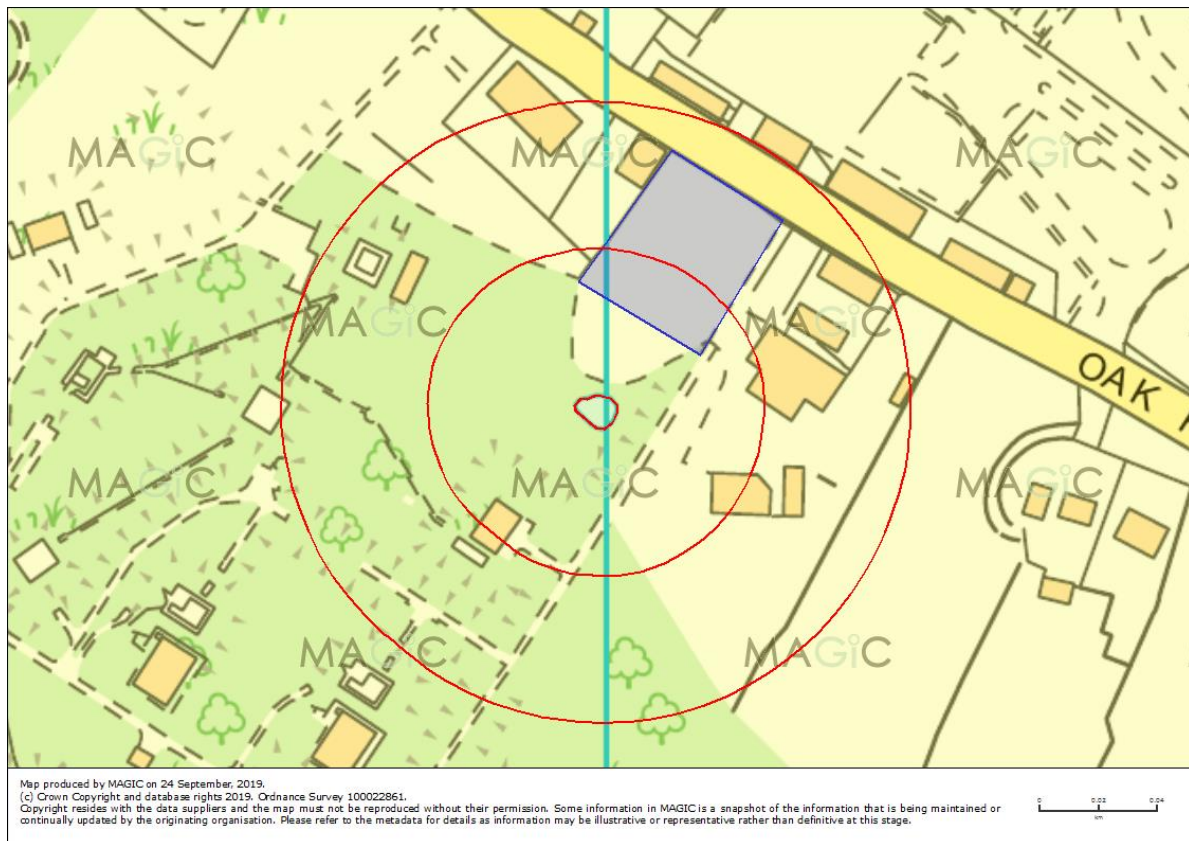


Figure 5.1. 50 and 100m buffers around pond 1

The total area of the site is approximately 0.4 ha. Despite the site being a small area of negligible value to newts, and the woodland to the southwest presenting a markedly superior terrestrial habitat, it is very possible that great crested newts could be found on site during works and an offence may be committed.

After discussion with Wrexham Council, it has been agreed that the development will be conducted under licence from Natural Resources Wales as there will be disturbance of land within 100m of the pond, and there will be potential of the damage and/or destruction of individual newts. It is also considered impossible for the work to be conducted on site by reducing the risks without erecting newt fencing.

There may be opportunity to provide terrestrial enhancements between the pond and the development area.

It is considered that favourable conservation status will be maintained through the measures listed above.

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

Work will be conducted under licence from Natural Resources Wales, with a medium population being assumed. The licence will outline a method statement such as the one below.

6.3.1 Licence Method Statement

Pre-construction Phase

1. The site is concrete, supporting no plants except for on the boundaries. Should any successional growth be found on site it will be removed immediately to ensure there is no shelter for great crested newts on the site.

Site set up

2. A consultant will be employed as the ECoW to oversee the work in areas sensitive to great crested newts on site. This person will need to be licensed and an experienced surveyor for great crested newts.
3. The ECoW will provide contractors with a toolbox talk prior to work commencing. This will include information about the legal status of newts and responsibilities of the construction company to ensure no offence is committed. A document to assist the identification of newts will be left on site and available for all contractors to view.
4. The red line area of the site will be completely surrounded by amphibian-proof fencing prior to any construction works taking place. The fencing will remain in place for the entire development. As the site is solid hardstanding, it will not be possible to bury plastic fencing in the typical fashion, in which case over-ground fencing will be used, with the base concreted down to fill in any gaps. The ECoW will be on site when this occurs.
5. The site boundary will be checked thoroughly by the ECoW, prior to fencing being installed, with a walkover search. This will confirm there are no newts present and that there are no places where newts could be sheltering, prior to commencement.



Figure 6.3. Example over-ground newt fencing section

6. The site will be trapped out for 30 days. Although a medium population is being assumed this is proportionate to the value of the site.
7. All cabins and equipment will be located on firm compacted ground, preferably a stone or concrete base.
8. Contractors are advised not to handle newts at any time.

Construction phase

9. 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 ECoW will be contacted.
10. Contractors are advised NOT to handle newts at any time.
11. Any heavy machinery will be stored within the fencing to avoid refugia being created and used by newts.
12. Stored material will be kept inside the fencing where possible. Should it require storage outside the fencing, it 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
13. All waste will be placed straight into skips to reduce the potential of creating refugia.
14. If a newt is found, then work WILL stop immediately and the ECoW contacted for advice.
15. Great crested newts will not be handled or moved without express permission from Natural Resources Wales as this would constitute an offence.
16. It is recommended that regular site visits are carried out by the ECoW to ensure compliance with the legislation and the Method Statement. A record of these visits will be made as part of the audit trail.

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.

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 great crested newts.

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 great crested newts 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. Pond 1 (the nearest pond) has tested positive for the presence of great crested newts, as per information provided by Wrexham Council, a medium sized population is to be assumed. Given the distance to the site and the lack of any barriers between pond 1 and the site, there is a reasonable likelihood that great crested newts will be found on site during works and an offence may be committed. The development must therefore be done under a licence from Natural Resources Wales, with the site being surrounded by newt-proof fencing prior to works commencing, and the fencing remaining in-situ for the entire development stage.

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**
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- D** **Site Plans**
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A Details of Surveyors

Table A.1: Surveyor experience and licences

Name	Membership of associations/ experience	Licenses
Peta Marshall BSc(hons)MA	Principal Consultant MCIEEM PIEMA 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. 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 <u>England:</u> Bats - 2015-12200-CLS-CLS BLICL - RC084 GCN - 2015-18939-CLS-CLS Dormice - 2017-29225-CLS-CLS <u>Wales:</u> Bats - 77554:OTH:CSAB:2017 GCN - 77574:OTH:SA:2017
Logan Maggs BSc(hons)	Lead Consultant 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. <u>England:</u> Bats - 2016-24901-CLS-CLS GCN - 2017-29218-CLS-CLS <u>Wales:</u> Bats - 75748:OTH:CSAB:2017 Newts - 79665:OTH:SA:2018
Ben Jones BSc(hons) MSc	Lead Consultant 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. <u>England:</u> Bats - 2017-29112-CLS-CLS GCN - 2016-25209-CLS-CLS <u>Wales:</u> Bats - S085098/1 GCN - 78716:OTH:SA:2018
Chloe Sheil 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) • Special Protection areas (SPA) • Special Areas of Conservation (SAC) • RAMSAR sites National statutory designations (1km) • Sites of Special Scientific Interest (SSSI) • National Nature Reserves (NNR) 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 3rd 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 3rd 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

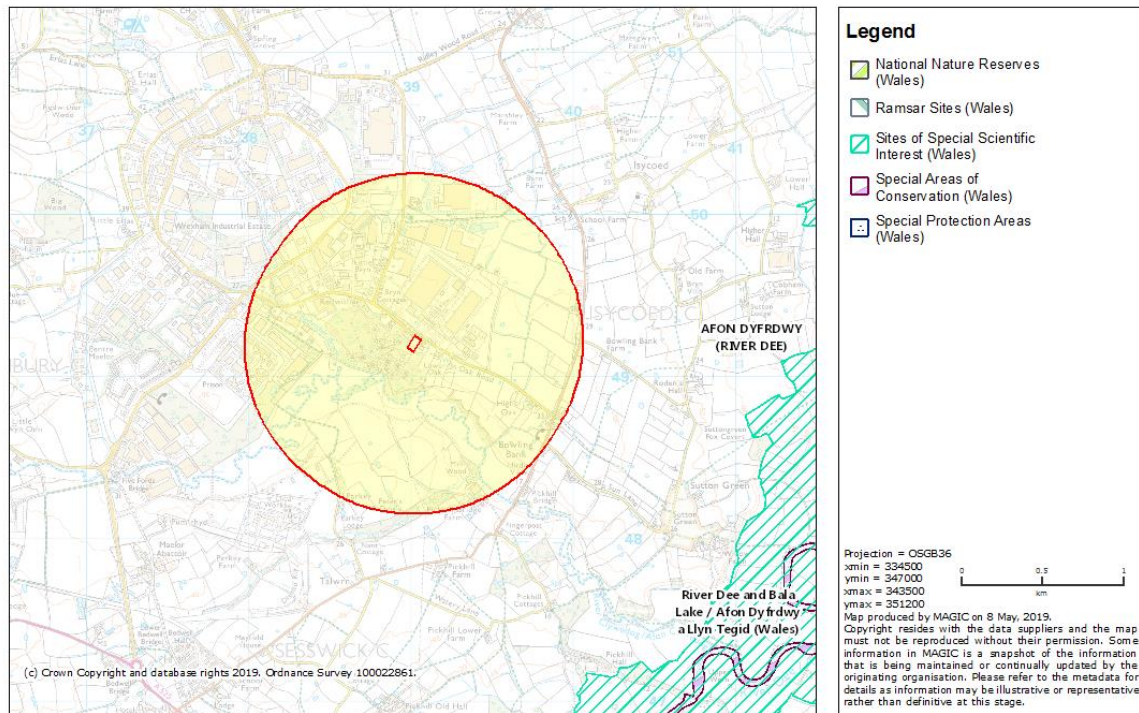


Figure C.1: Designated sites within 1km of Wrexham Industrial Estate

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 purchased from Cofnod 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 great crested newt record is approximately 100m to the north, near Prysmian Cables & Systems, and is from 2004. 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.

It is understood that the pond near the southern boundary contained great crested newts, though the data was not present in the Cofnod search at the time of purchase. This information has come from Wrexham Council.

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.

Invertebrates

Small Heath (*Coenonympha pamphilus*)
Figure of Eight (*Diloba caeruleocephala*)
Dingy Skipper (*Erynnis tages*)
Wall (*Lasiommata megera*)
Grizzled Skipper (*Pyrgus malvae*)
Shaded Broad-bar (*Scotopteryx chenopodiata*)
Blood-Vein (*Timandra comae*)
Cinnabar moth (*Tyria jacobaeae*)

The nearest records are of small heath, dingy skipper and grizzled skipper approximately 200m to the northwest, from 2004. The nearest recent records of blood-vein are approximately 700m to the southeast, from 2006. The nearest records of cinnabar are approximately 900m to the southeast, from 2009.

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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