ECOLOGICAL ASSESSMENT (EA)

December 2019

Penkford School (Phase 1)
Newton-le-Willows
St. Helens

URBAN GREEN

QUALITY MANAGEMENT

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NON-TECHNICAL EXECUTIVE SUMMARY

Galliford Try are proposing to develop land at Penkford School, Newton-Le-Willows, St. Helens (hereafter referred to as 'the site').

The planning application for the wider site is phased; Phase 1 (this application) is confined to areas of existing buildings, hardstanding, two ornamental ponds and a small area of amenity grassland; Phase 2 includes a wider range of habitats. The boundary of the Phase 2 site is detailed in the Habitat map in Appendix 2.

Urban Green have been appointed to complete an Ecological Assessment of the Phase 1 site. A desk-based study and a field study were conducted to identify habitats and determine the suitability for any 'protected and notable' species to occur on site. Following the survey work, the key recommendations are summarised in the table below.

Constraints to the Site

Species	Recommendations
Roosting Bats	Emergence /re-entry surveys of Vardy House and the substation building on site indicate that neither building supports a bat roost. All other buildings scheduled for demolition were assessed as having negligible suitability for roosting bats. A European Protected Species Licence (EPSL) is therefore not required prior to demolition of any of these buildings. There is opportunity to enhance the site for roosting bats post-construction by including roosting provisions within the design of the proposed development. The locations and specifications of roost boxes should be determined by an ecologist once the final development layout is available.
Commuting and Foraging Bats	Any site lighting (construction and permanent) should be designed in accordance with Guidance Note 08/18 issued by the Bat Conservation Trust and Institute of Lighting Professionals (BCT & ILP, 2018) to minimise the risk of causing disturbance to commuting and foraging bats that are likely to use the adjacent rail way land and any other nearby suitable habitats.
Great Crested Newts	eDNA results have indicated that Pond 1 supports GCN. However, the pond is being retained and other habitats on site comprise hardstanding, buildings and small areas of regularly mown amenity grassland which provide limited suitability as a terrestrial habitat for GCN. The higher quality GCN habitat is located off-site to the south and west where there is tall ruderal, scrub and modified neutral grassland which are more suitable for GCN in terrestrial phase. It will be necessary to maintain a corridor between Pond 1 and the higher quality newt habitat along the railway line. Because the on-site habitat provides very limited opportunities for GCN in terrestrial phase, it is suggested that the proposed works could take place without first undertaking full GCN population count surveys of Pond 1 and, if necessary* subsequently securing an EPSL from Natural England, so long as the appropriate precautionary measures are implemented. The Phase 2 planning application will involve loss of higher quality terrestrial habitat for GCN. Therefore, works associated with the Phase 2 application (including the demolition of Vardy House) should not commence until further population count

Species	Recommendations
	surveys for GCN have been undertaken at Pond 1 and if necessary*, an EPSL has been secured from Natural England. **With the relatively poor quality terrestrial habitat in the vicinity of Pond 1, the lack of connectivity of Pond 1 to superior habitat in the wider area, the fact that Pond 1 was constructed relatively recently (i.e. within the last 10 years) as opposed to being long established and the eDNA result returning only a 1/12 positive score for GCN, it is considered possible that the eDNA survey may have provided a 'false positive' result. If this is the case, then in fact GCN may not be present in Pond 1 at all, in which case no EPSL licence and associated mitigation strategy would be required. However, this can only be confirmed through undertaking a full survey effort in accordance with the guidance, as outlined above.*

CONTENTS

1 Introduction

1.1 Background to the Scheme

Galliford Try are proposing to develop land at Penkford School, Newton-Le-Willows, St. Helens (hereafter referred to as 'the site'). The proposals are confined to areas of existing hardstanding, buildings, two ornamental ponds and a small area of amenity grassland.

Urban Green have been appointed to undertake an Ecological Assessment (EA) of the site.

1.2 Site Context

The site is located at National Grid Reference SJ 59312 94480 (see solid red line boundary in Figure 1).

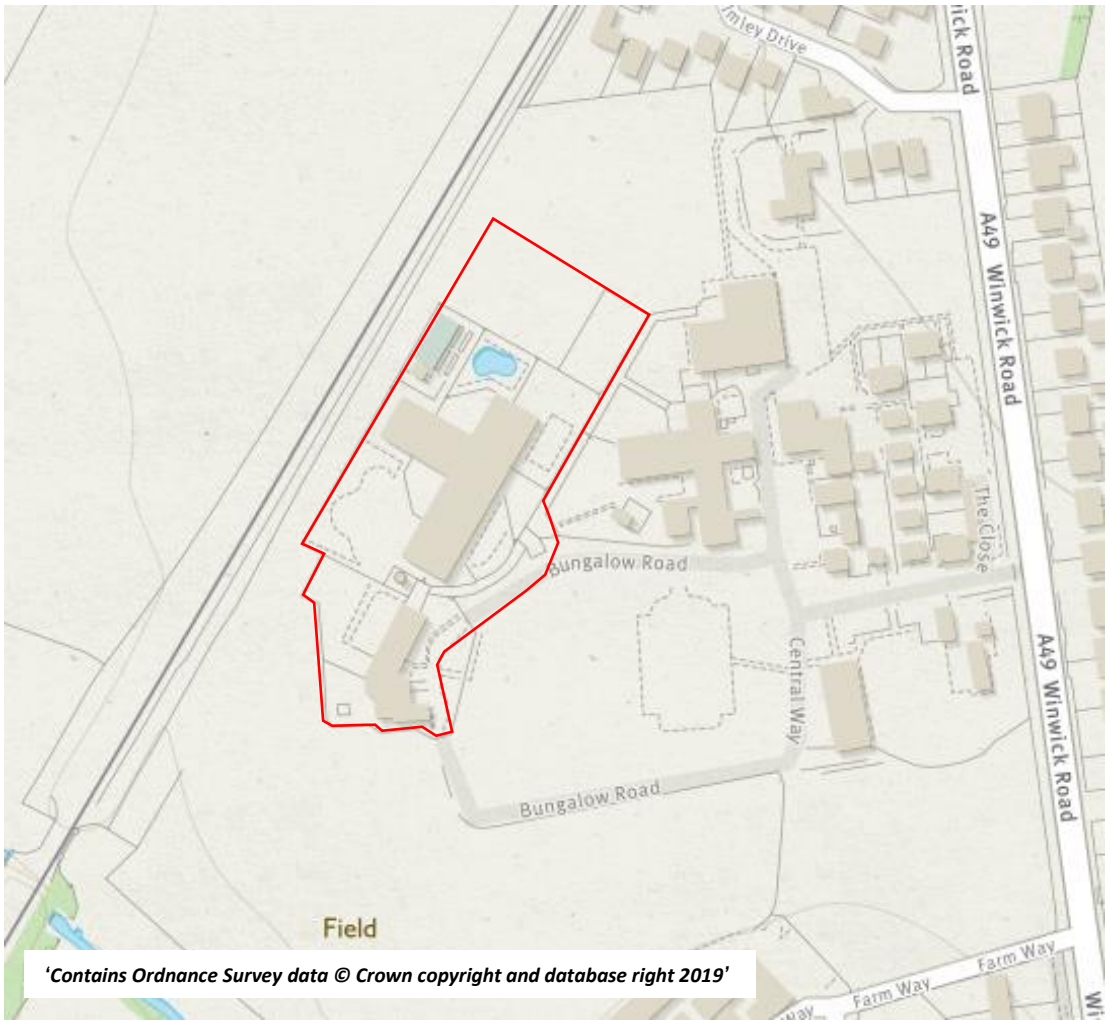


Figure 1 – Site Extent

The site is located in a suburban setting approximately 2.9km south east of the town centre of Newton-le-Willows, St Helens.

Residential dwellings are present north of the site. A railway line runs adjacent to the northwest of the site, beyond which lies arable land. To the east of the site are residential properties and the A49 carriageway. Arable land is present to the south of the site.

1.3 Purpose of this Report

This report has been produced to set out the methods, results, and conclusions of an Ecological Assessment.

Further information and details of UK legislation for those species which are formally protected is defined in Appendix 1.

1.4 Definitions

For the purposes of this report, the term 'protected and notable species' relates to:

- species included on Schedules 2 and 4 of *The Conservation of Habitats and Species Regulations 2017*;
- species included on Schedules 1, 5 and 8 of the *Wildlife and Countryside Act 1981* (as amended), excluding species that are only protected in relation to their sale (see section 9[5] and 13[2]);
- invasive non-native species included on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended);
- species of principal importance for the conservation of/maintaining and enhancing biodiversity as required under: Section 41 of the *Natural Environment and Rural Communities Act 2006* (England), Section 7 of the *Environment (Wales) Act 2016*, Section 2[4] of the *Nature Conservation (Scotland) Act 2004*;
- local species of importance as identified within various local biodiversity action plans; and,
- badgers, which are protected under the *Protection of Badgers Act 1992*.

2 Methods

2.1 Desk Study

2.1.1 Online Resources and Local Records Centre

Sources of information used in the desk study are presented in Table 1.

Table 1 – Desk Study Sources of Information

Source	Date Consulted	Information Sought
MAGIC website (www.magic.gov.uk)	13/06/2019	Locations of statutory designated sites within 5km of the site boundary. Locations of Natura 2000 sites (Ramsar, SAC and SPA) within 5km of the site boundary.
Natural England (https://designatedsites/.naturalengland.org.uk/)	13/06/2019	Relevant statutory designated site citations.
JNCC (https://jncc.defra.gov.uk/	14/06/2019	Information on European wildlife sites. Details of relevant Section 41 species and habitats.
Biobank (Merseyside) & rECOrd (Cheshire) Local Record Centres	29/05/2019 & 04/06/2019	Locally designated wildlife sites within 2km of site boundary. Records of protected and notable species within 1km of the site boundary.
North Merseyside Local Biodiversity Action Plans	14/06/2019	Species and habitats which are given special conservation status at the local level.
St Helens (https://www.sthelens.gov.uk/planning-building-control/natural-built-and-historic-environment/local-wildlife-sites/)	14/06/2019	Information about non-statutory local wildlife sites within North Merseyside.

2.1.2 Previous Reports

Urban Green were not provided with any previous ecological reports for the site at the time of writing.

2.2 Field Survey

The site was subject to a field survey on 10th June 2019, by Principal Ecologist Alexander Baldwin (Class 2 Bat Licence ref: 2018-38153-CLS-CLS) and Ecologist Rosie McEwing. The weather conditions were as follows: sunny with air temperature of 17°C, no precipitation, light breeze and cloud cover of approximately 3/8 oktas.

A further ecological walkover survey was undertaken by senior ecologist Natasha Seaward on 13th November 2019.

The methods were based on the standard 'Phase 1' habitat survey technique (JNCC, 2010), which was extended (IEA, 1995) to include any relevant information on evidence or suitability for use by protected or notable species. Phase 1 habitat descriptions are used within this report with the following adaptations:

1. In respect of grassland habitats, an additional modified neutral grassland category will be used when this is applicable. This grassland type occurs predominantly in urban fringe or post-industrial sites and does not correspond well to the descriptions of standard Phase 1 habitats.

The modified neutral grassland category is used when a grassland:

- comprises neutral species;
- is not managed or improved in such a way as to correspond to existing Phase 1 habitats;
- where the species compositions do not indicate improved or semi-improved grassland categories;
- although not improved, it does not correspond to the rarity or species diversity implied by the description of unimproved grassland in the Phase 1 handbook (JNCC, 2010).

Species details are provided in corresponding target notes.

2. Where habitats comprise a mixture of habitat types rather than a single type, the habitat will be mapped as the most abundant type. Details of the composition and species are provided in corresponding target notes.

Species abundance is described using the DAFOR scale as shown in Table 2. Percentages are an approximate indication rather than a quantitative measure.

Table 2 – Key to Species Abundance

		Description	Indicative Percentage Ranges
D	Dominant	Covers most of the area	90% or greater
A	Abundant	Very common throughout the area.	50 – 90%
F	Frequent	Common or with many individuals.	20 – 50%
O	Occasional	Occurs in several places but not throughout. Populations are not large.	5 – 20%
R	Rare	Occurs in low numbers in relation to size of area.	Less than 5%
"L" will be used to indicate abundance in a localised area, e.g. LA = Locally abundant			

2.3 Great Crested Newt – Habitat Suitability Index (HSI) Assessment

Two ponds (Ponds 1 and 2 – see Figure 2 for locations) within the site boundary were assessed in line with the Habitat Suitability Index (HSI) (Oldham et al. 2000). The method uses a series of 10 indices that combined provide a score between 0 and 1. The calculated score corresponds to the following suitability.

Table 3 – Habitat Suitability Index (HSI) score

HSI	Pond Suitability
<0.5	Poor
0.5-0.59	Below Average
0.6-0.69	Average
0.7-0.79	Good
>0.8	Excellent

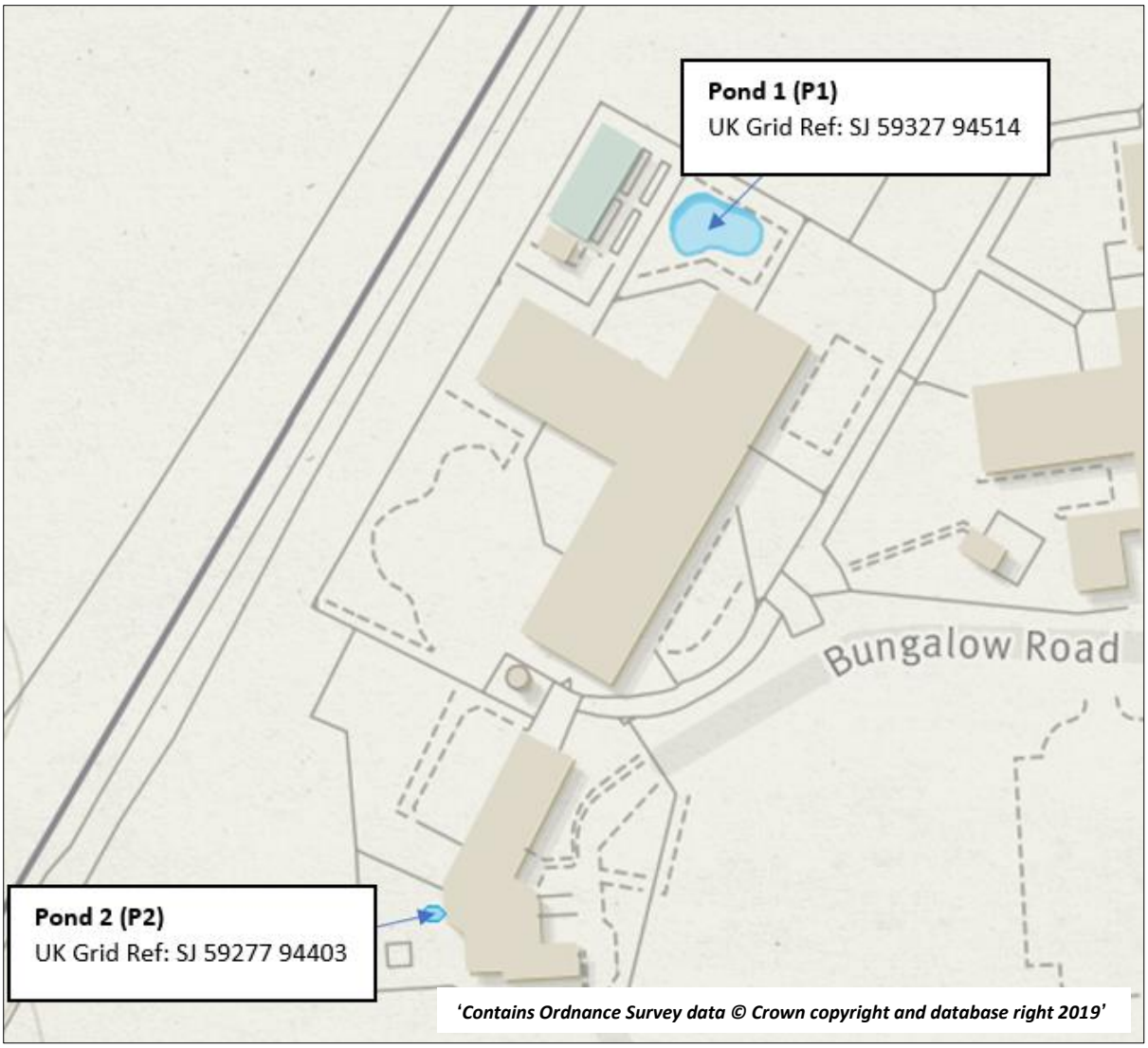


Figure 2 – Pond Locations

2.4 Environmental DNA (eDNA) Surveys

2.4.1 Sample Collection Protocol

Further to the HSI assessment surveyors attended site on 25th June 2019 to undertake GCN eDNA sampling of Pond 1. Collection of the eDNA samples was undertaken by Ecologist Jessica Flanagan

(Natural England GCN class licence registration number: 2017-28615-CLS-CLS) and Assistant Ecologist Jana Baeumer. Both Jessica and Jana have received training in the field sampling technique and understand factors that affect the likelihood of false negatives or positives.

The eDNA sampling was carried out in accordance with the stringent survey methodologies defined within Natural England's accepted protocol (Biggs et al, 2014 - WC1067 Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA). The Samples were taken from site on 25th June 2019 and were also sent to the laboratory for processing on 25th June 2019.

One eDNA sampling kit was used for the pond. A total of 20 water samples were taken from Pond 1 to form the basis of the eDNA sample. The samples were taken using a sterile ladle and emptied into a sterile self-supporting Whirl-Pak bag (100% of the perimeter could be accessed). Once all 20 samples were collected the sterile self-supporting bag was shaken to mix any DNA across the whole pond sample. A sterile plastic pipette was used to transfer approximately 15 ml of the mixed pond sample water into a sterile conical tube. This was undertaken for each of the six sterile conical tubes in the kit. Each sterile conical tube contained 35 ml of ethanol to preserve any DNA within the samples. The box of six sterile conical tubes were returned the same day at ambient air temperature to the SureScreen eDNA testing service for laboratory analysis

2.4.2 eDNA Analysis

SureScreen Scientifics eDNA testing service analysed the samples and provided the following text to describe the laboratory analysis methodology:

"*The laboratory testing adheres to strict guidelines laid down in WC1067 Analytical and Methodological Development for Improved Surveillance of The Great Crested Newt, Version 1.1*

The analysis is conducted in two phases. The sample first goes through an extraction process where all six tubes are pooled together to acquire as much eDNA as possible. The pooled sample is then tested via real time PCR (also called q-PCR). This process amplifies select part of DNA allowing it to be detected and measured in 'real time' as the analytical process develops. qPCR combines PCR amplification and detection into a single step. This eliminates the need to detect products using gel electrophoresis. With qPCR, fluorescent dyes specific to the target sequence are used to label PCR products during thermal cycling. The accumulation of fluorescent signals during the exponential phase of the reaction is measured for fast and objective data analysis. The point at which amplification begins (the Ct value) is an indicator of the quality of the sample. True positive controls, negatives and blanks as well as spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared so they act as additional quality control measures.

The primers used in this process are specific to a part of mitochondrial DNA only found in GCN ensuring no DNA from other species present in the water is amplified. The unique sequence appropriate for GCN analysis is quoted in DEFRA WC 1067 and means there should be no detection of closely related species."

2.5 Bat Assessment

2.5.1 Roosting Bats

A Bat Roost Assessment (BRA) was carried out on the site buildings and trees. Ladders were used to access roof voids (where safe to do so) and potential roost features were inspected with a high-powered torch and a Ridgid micro CA-300 endoscope. Ladders were used to provide access to some features on the external aspect of buildings. Trees were assessed from ground level only, using binoculars where necessary.

The BRA methodology is based on information contained within the Bat Conservation Trust (BCT) guidelines, 3rd edition (Collins, 2016). The categorisation within this report is based on that set out in Table 4, which is used as a basis for determining the requirement for further surveys.

Table 4 – Suitability of Buildings and Trees for Roosting Bats (adapted from Collins, 2016)

Category of Suitability	Typical Characteristics	Further Survey Requirements
High Roost Suitability	A structure/tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	3 separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. Surveys can be undertaken between May and September, with at least two surveys between May and August.
Moderate Roost Suitability	A structure/tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but are unlikely to support a roost of high conservation status.	2 separate survey visits. One dusk emergence and a separate dawn re-entry survey. Surveys can be undertaken between May and September with at least one survey between May and August.
Low Roost Suitability	A structure/tree with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate condition and/or suitable surrounding habitat to be used on a regular basis by larger numbers of bats.	**Structures:** 1 emergence/re-entry survey between May and August. **Trees:** No further survey required but precautionary methods of felling recommended.
Negligible Suitability	Negligible habitat features on site likely to be used by roosting bats.	No further work required.

2.5.2 Commuting and Foraging Bats

The site was assessed for its suitability for use by commuting and foraging bats.

The commuting and foraging assessment methodology is based on information contained within the Bat Conservation Trust guidelines 3rd edition (Collins, 2016). The categorisation within this report is based on that set out in Table 5, which is used as a basis for determining the requirement for further surveys.

Table 5 – Suitability of Site for Foraging and Commuting Bats (adapted from Collins, 2016)

Category of Suitability	Typical Characteristics
High Suitability	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting or foraging bats such as; river valleys, streams, hedgerows, lines of trees or woodland edge. Site is close to or connected to known roosts.
Moderate Suitability	Continuous habitat connected to the wider landscape that could be used by commuting bats such as lines of trees, scrub or linked back gardens. Habitat connected to wider landscape that could be used for bats for foraging such as; trees, scrub, grassland or water.
Low Suitability	Habitat that could be used by small number of commuting bats such as; defunct hedgerow, isolated features not well connected to surrounding habitat or Isolated habitat that could be used by a small number of foraging bats such as a lone tree or patch of scrub.
Negligible Suitability	No features on site suitable for use by commuting and foraging bats.

2.5.3 Bat Emergence / Re-entry Surveys

Further to the BRA findings (see Section 3.3.2) two buildings on site were assessed as having suitability for roosting bats.

In accordance with the current guidance (Collins, 2016), buildings with 'low' suitability for roosting bats were subjected to one emergence survey. Buildings with 'moderate' suitability for roosting bats were subjected to one emergence survey and one re-entry survey. Emergence surveys commenced at least 15 minutes before sunset until at least an hour and a half after sunset. Re-entry surveys commenced at least 1.5 hours before sunrise and continued until 15 minutes after sunrise.

During each survey, buildings were monitored by the appropriate number of surveyors (2 surveyors for the substation, 4 surveyors for Vardy House) equipped with an Elekon Bat Scanner stereo for bats exiting / re-entering identified potential roost entry points.

Full details of the surveys are provided in Table 6. See Figures 3 and 4 for plans illustrating surveyor positions.

Table 6 – Dusk Emergence/Dawn Re-entry Survey Details

Date	Building	Sunrise / Sunset Time	Survey Time	Surveyors	Weather Conditions
22/07/2019	Substation	21:22	21:05 – 23:00	Surveyor 1 – Rosie McEwing Surveyor 2 – Natasha Seaward	22°C, 5/8 oktas, 6mph wind speed, no precipitation
29/07/2019	Vardy House	21:12	20:57 – 22:42	Surveyor 1 – Jana Baeumer Surveyor 2 – Natasha Seaward Surveyor 3 – Rosie McEwing Surveyor 4 – Alexander Baldwin	22°C, 5/8 oktas, 3mph wind speed, no precipitation

Date	Building	Sunrise / Sunset Time	Survey Time	Surveyors	Weather Conditions
15/08/2019	Vardy House	05:49	04:12 – 06:05	Surveyor 1 – Jana Baeumer Surveyor 2 – Matt Pilkington Surveyor 3 – Rosie McEwing Surveyor 4 – Alexander Baldwin	16°C, 7/8 oktas, 14mph wind speed, occasional very brief, light rain

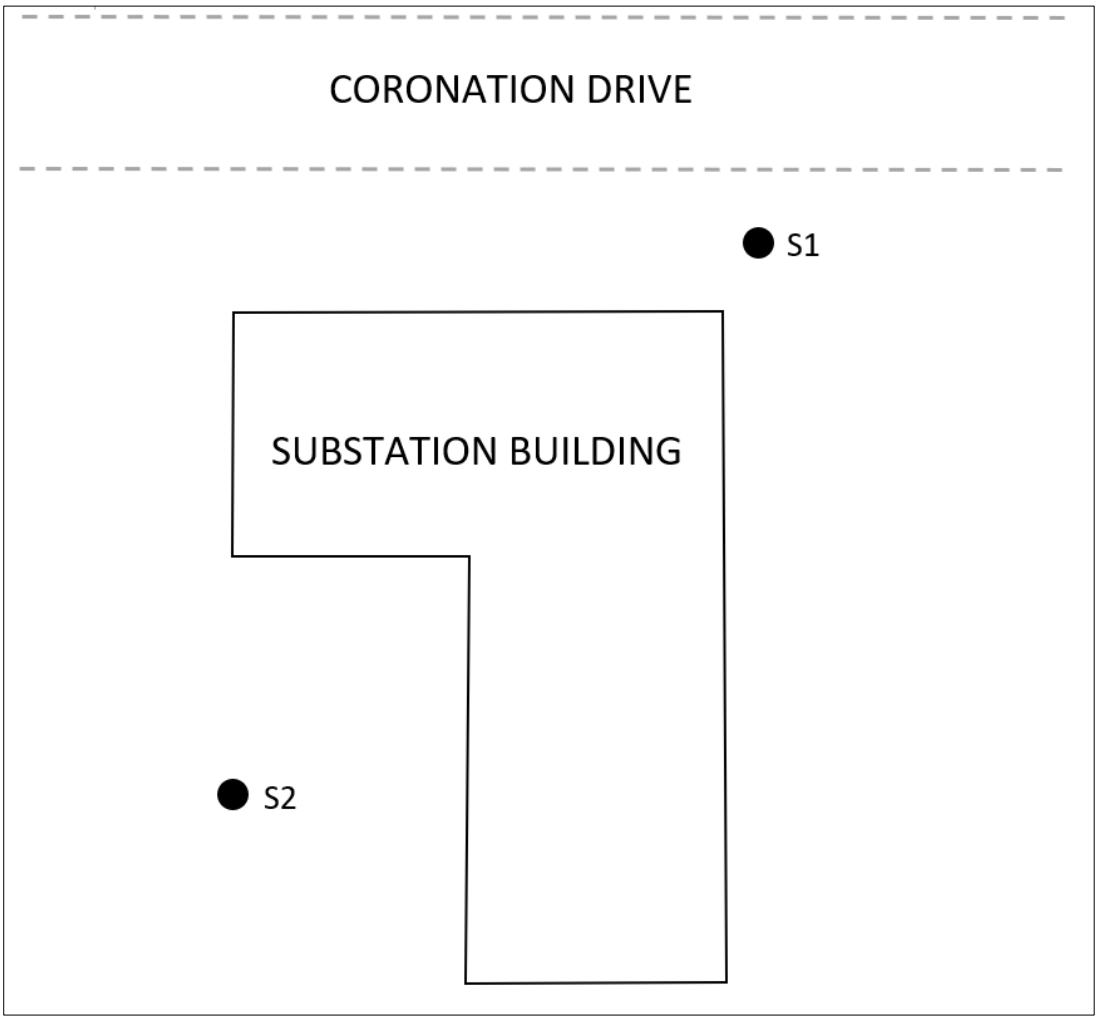


Figure 3 – Surveyor Locations for Substation Building

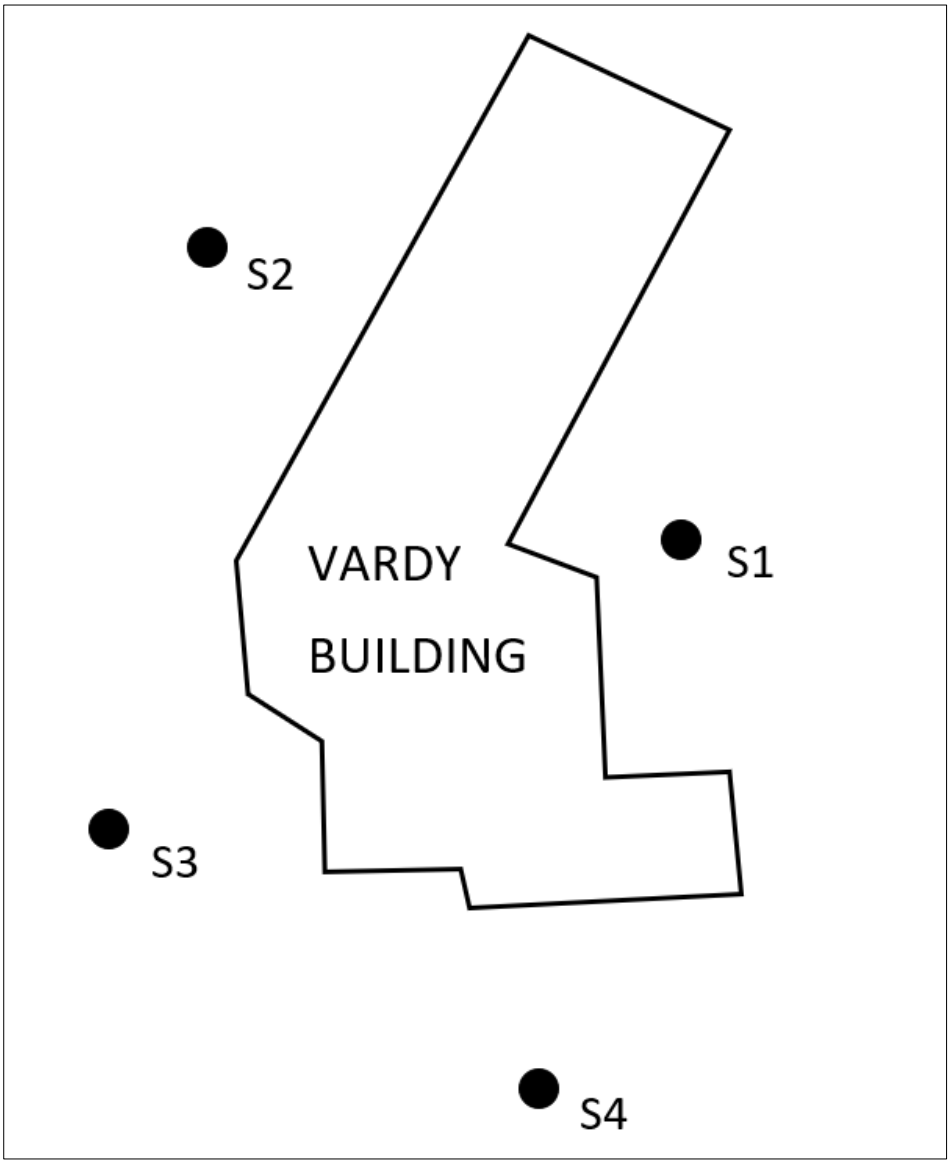


Figure 4 – Surveyor Locations for Vardy House

2.6 Constraints to the Surveys

Whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.

This EA does not constitute a full botanical survey. The protected species assessment provides a view of the likelihood of protected species occurring on the site based on the known distribution of species in the local area and the suitability of the habitat. It should not, however, be taken as providing a full and definitive survey of any protected species group.

Where a lack of records is found during the desk search for a defined geographical area, it does not necessarily mean that there is a lack of ecological interest; the area may be simply under-recorded.

The conclusions and recommendations detailed in this report are based upon the site redline boundary and the development proposals as outlined by the client at the time of writing. Should there be any changes to the site redline boundary or development proposals at a later stage, this assessment should be reviewed to determine whether any amendments or additional survey work is required.

In accordance with CIEEM's Advice Note on the Lifespan of Ecological Reports and Surveys (CIEEM, 2019), the details of the initial site visit report will remain valid for a period of **18 months** from the date of the survey (i.e. until 10th December 2020). Dates of the reptile survey are considered valid for a period of 24 months form the date of the final survey (i.e. until 7th July 2021). Dates of the bat emergence / re-entry surveys are considered valid for 12 months from the final survey (i.e. until 15th August 2020). After this date, this assessment should be reviewed to determine whether any update surveys are required.

3 Baseline Ecological Conditions

3.1 Desk Study

A total of two statutory designated sites are located within 5km and 17 non-statutory designated sites are located within 2km of the site. No Natura 2000 sites are located within 5km of the site. Site details are provided in Table 8.

Table 8 – Designated Sites within the Search Areas

Designated Site	Approx. Distance from Site	Details
Statutory Sites		
Colliers Moss Local Nature Reserve (LNR)	4.8km west	Besides relict mosslands the LNR consists of habitats such as lagoons, grass-, heath- and woodland as well as untreated colliery spoil which is being colonised. A diverse range of dragonfly species are abundant including species such as migrant hawker and black tailed skimmer.
Highfield Moss Site of Special Scientific Interest (SSSI)	3.	A site consisting of lowland acid and neutral grassland, lowland fen, marsh and swamp habitat. It includes marsh gentian, a nationally scarce plant.
Non-statutory Sites		
Black Brook and Sankey Valley Corridor Nature Improvement Area (NIA)	1.4km southwest	A large site with grass-, wood- and wetlands which serves as an important wildlife corridor.
Castle Hill Local Wildlife Site (LWS)	1.8km north	A site that is dominated by grassland but also contains a swamp area.
Collingwood Road, openspace LWS	1.7km northwest	A site providing small woodland patches.
Gallows Croft LWS	300m southeast	A site with mature broad-leaved woodland on the banks of a stream.
Hospital Wood (Ancient Woodland Inventory)	1.5km west	A small site with woodland that connects to other designated sites and the nearby Sankey Brook.
Knowsley and St.Helens Mosslands NIA	950m northeast	A wetland supporting lowland bog and fen and running water habitats.
Mesnes Park and stream LWS	1.1km northwest	A small park with wetland, meadow and woodland that was planted as part of the Mersey Forest.
Mucky Mountains LWS	1.9km west	A grassland site with an interesting flora such as the locally rare Pyramidal Orchid and lime-loving Quaking Grass.
Newton Brook LWS	440m south	A site with a diversity of habitats ranging from flood plain, stream, marginal vegetation, scrub and sandstone. The site supports nationally, regionally and locally important species.
Newton Brook 05 LWS	190m west	A site with woodland and running water habitats.
Newton Lake and southern woodland LWS	1.3km north	A large lake with associated swamp areas forming habitat for a variety of birds. The surrounding woodland contains a rookery site.

Designated Site	Approx. Distance from Site	Details
Old Hey Wood LWS	1.3km west	An elongated woodland site that runs parallel to the Sankey Canal and connects to other nearby designated sites.
Red Brow Wood LWS	1.5km west	A site with woodland that connects to other designated sites and the nearby Sankey Canal.
Sankey Brook, Sankey Valley LWS	2km west	An extensive grassland site including swamp and woodland habitat.
Wargrave Quarry, Newton-le-Willows Local Geological Site	1.7km west	A small site with woodland that connects to other designated sites and the nearby Sankey Brook.
Wargrave Road LWS	900m west	A small woodland site.
Willow Park LWS	1km north	A park with woodland that is part of the Mersey Forest.

In addition, presented below is a summary of protected/notable species records that have been recorded within 2km of the site. Records that have been submitted in the past 10 years are considered current and have been included. Records submitted more than 10 years ago are considered historic and, unless specified, have not been included in this report.

3.1.1 Amphibians

Great Crested Newt (*Triturus cristatus*)

There is one record of great crested newt within 2km of the site (2010). The record is located approximately 1.8km north-west of the site.

A search of MagicMap indicates that no EPSLs for GCN have been granted within 2km of the site.

Other Amphibians

Other recorded amphibians include common frog (*Rana temporaria*), common toad (*Bufo bufo*) and smooth newt (*Lissotriton vulgaris*) with the closest record of a common frog located approximately 920m west of the site (2018).

3.1.2 Birds

There are 199 bird records within the search area. Species include:

- Birds with special protection in the UK (listed on Schedule 1 of *The Wildlife & Countryside Act 1981*): barn owl (*Tyto alba*), black-necked grebe (*Podiceps nigricollis*), black tern (*Chlidonias niger*), fieldfare (*Turdus pilaris*), greenshank (*Tringa nibularia*), little ringed plover (*Charadrius dubius*), merlin (*Falco columbarius*), peregrine (*Falco peregrinus*) and redwing (*Turdus iliacus*). The closest record is that of a redwing in 2012, located approximately 1.8km south of the site.

- Birds that are national priority species (listed on Section 41 of the *NERC Act 2006*) consisting: corn bunting (*Emberiza calandra*), dunnock (*Prunella modularis*), grey partridge (*Perdix perdix*), herring gull (*Largus argentatus*), house sparrow (*Passer domesticus*), lapwing (*Vanellus vanellus*), linnet (*Linaria cannabina*), reed bunting (*Emberiza schoeniclus*), starling (*Sturnus vulgaris*), tree sparrow (*Passer montanus*), willow tit (*Poecile montana*) and yellowhammer (*Emberiza citronella*). In 2014, located approximately 610m north-west of the site a dunnock was recorded as the closest record.

- The following species are listed on the Species Action Plan for the North Merseyside Biodiversity Action Plan 2008: house martin (*Delichon urbicum*), nuthatch (*Sitta europaea*), skylark (*Alauda arvensis*) and song thrush (*Turdus philomelos*). The closest record is that of a song thrush in 2014, located approximately 620m north-west of the site.

3.1.3 Invertebrates

38 records of insects exist within the search area. There is one record of a centre-barred sallow (*Atethmia centrago*) (listed on Section 41 of the *NERC Act 2006*). Other records are of species that are of particular local significance and listed on the North Merseyside Action Plan (NM BAP) including: azure damselfly (*Coenagrion puella*), banded demoiselle (*Calopteryx splendens*), black darter (*Sympetrum danae*), blue-tailed damselfly (*Ischnura elegans*), brown hawker (*Aeshna grandis*), common darter (*Sympetrum striolatum*), common hawker (*Aeshna juncea*), emerald damselfly (*Lestes sponsa*), four-spotted chaser (*Libellula quadrimaculata*), migrant hawker (*Aeshna mixta*), ruddy darter (*Sympetrum sanguineum*) and southern hawker (*Aeshna cyanea*). There are four records of Adonis' ladybird (Hippodamia variegate), a nationally notable species.

The closest record is that of a southern hawker, located approximately 1.1km west of the site.

3.1.4 Bats

There are 22 field records of bats within the search area including: common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*), Daubenton's bat (*Myotis daubentonii*), noctule (*Nyctalus noctula*), unknown pipistrelle species, unknown Myotis species and unidentified bats. The closest record is that of an unidentified bat species, located approximately 110m south-east of the site.

A search of MagicMap indicates that no EPSLs for bats have been granted within 2km of the site.

3.1.5 Badger

No current badger records were returned within the data search. However, there is one historic record dated from 2005, located approximately 830m south-east of the site.

3.1.6 Other Species

Brown Hare (*Lepus europaeus*)

There are two records of brown hare. The closest is located approximately 1.7km south of the site recorded in 2016.

Hedgehog (*Erinaceus europaeus*)

13 records exist within the search area with the closest to site approximately 1km north-west from 2016.

Otter (*Lutra lutra*)

One otter record exists, located approximately 760m north-east of the site in 2014.

Water Vole (*Arvicola amphibious*)

There are two records within the search area, both located approximately 1.4km south-west of the site. They were recorded in 2009 and are situated between the Sankey Brook and the Sankey Valley Trail.

3.1.7 Flowering Plants

Bluebell (*Hyacinthoides non-scripta*)

There are five records of bluebell existent within the search area. The closest is located approximately 540m south-east of the site.

Limestone Woundwort (*Stachys alpine*)

One record exists within the search area from 2016, located approximately 1.2km of the site.

Invasive non-native botanical species (INNS)

There are 50 records of INNS within the search area consisting of Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and common rhododendron (*Rhododendron ponticum*). The closest record is that of Japanese knotweed, located approximately 510m north-east of the site.

3.2 Field Survey

The site habitats and accompanying Target Notes are presented in the Phase 1 Habitat Map in Appendix 2. Habitat descriptions are provided below, whilst Appendix 3 details the full plant species list.

The site largely comprises a combination of buildings, hardstanding and grassland. A small area of **amenity grassland** is present in the north of the site. This appeared to have been fairly recently mown at the time of survey and was dominated by perennial ryegrass (*Lolium perenne*), Yorkshire fog and creeping buttercup.

Photograph 1– Amenity grassland towards north of site

There are areas of hard standing around the main buildings and the access road itself also comprises hardstanding (Photograph 2). This habitat is not vegetated and is of very little ecological value.

Photograph 2 – Hard standing along the access road

There are some **scattered trees** on site, predominantly along the border of the access road.

There are five **buildings** on site, which are described further in Section 3.3.2. There are two **ponds** on site which are described further in Section 3.3.5.

3.3 Protected and Notable Species

3.3.1 Badger

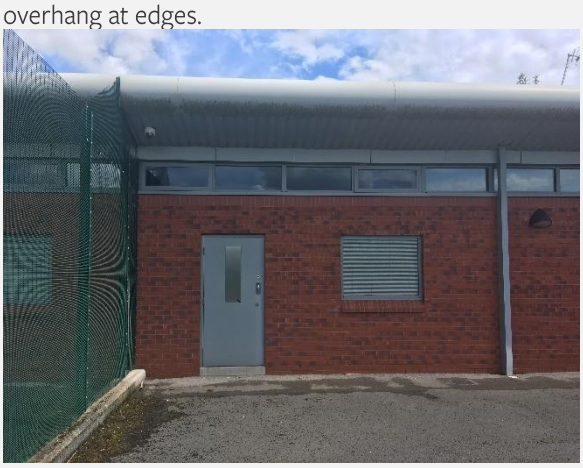
There was no evidence of badger presence on site, and the habitats on site provide very little opportunities for badgers.

3.3.2 Roosting Bats

Table 9 presents the results of the BRA carried out on the site buildings and trees. Table 10 presents the emergence / re-entry survey results.

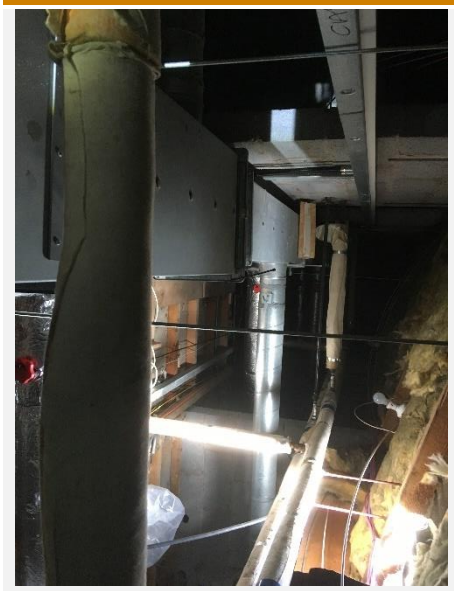
Table 9 – BRA Summary

Building Reference	Description	Evidence	Category of Suitability
B1	Single-storey brick building. Plastic corrugated roofing panels, very slightly pitched, with curved	None	Negligible

Building Reference		Description	Evidence	Category of Suitability
		overhang at edges.  Plastic fascias appear secure and are present around most of the building's perimeter, with the exception of the metal veranda area. There is an approximate 3cm gap between fascia and wall on south east but this appears shallow and does not penetrate far. Internally there are suspended ceilings and metal girders. Ceilings are open (not to the exterior of the building) in some parts as a result of damage caused when the building was broken into approximately 1 year previous to site visit. Some internal areas have plaster ceilings (rather than suspended) which are tight and secure. 		
B2 (Vardy)	B2a	Two-storey 'house' like building with double garage area. Brick and mortar walls with pitched, slate tiled roof with some loose tiles.	None	Moderate

Building Reference	Description	Evidence	Category of Suitability
	 Loft space accessed (~80%) – timber frame with breeze block and brick internal walls. Occasional gaps in roof from exterior which could provide internal access to bats.  		
	B2b Single-storey, cell block building, ~6m in height. Pitched roof with slate tiles – large numbers missing from damage resulting from theft of wiring. Also further loose tiles on the upper south eastern aspect.		

Building Reference	Description	Evidence	Category of Suitability
	 Interior comprises a series of duplicate rooms and a corridor with plaster ceiling.  Loft space accessed (~80%) – timber frame with breeze block and brick internal walls. Large openings where roof has been damaged provide easy access for bats. Fibreglass loft insulation material and underfelting.		

Building Reference	Description	Evidence	Category of Suitability
			
B3 (poly tunnel)	Semi-circular poly-tunnel. Metal framed, single space with no roof voids. 	None	Negligible
B4 (storage building near B1)	Small , cuboid brick building with no windows and metallic shutter doors. Flat concrete roof. 	None	Negligible
B5 (small substation near site entrance)	Single storey brick building with flat roof. Open doors and boarding provide access for bats.	None	Low

Building Reference	Description	Evidence	Category of Suitability
			
Trees	No trees on site have significant potential roost features suitable for roosting bats	None	Negligible

Table 10 – Bat Emergence / Re-entry Survey Results

Building Reference	Survey Number	Survey Findings
B5 (substation)	1 of 1	No bat emergences observed
B2 (Vardy House)	1 of 2	No bat emergences observed
B2 (Vardy House)	2 of 2	No bat re-entries observed

No bats were observed emerging from or re-entering either the substation of Vardy House, indicating that roosting bats are likely absent from both buildings. During the dusk survey of B5 (substation) occasional common pipistrelle passes were observed with brief periods of foraging. During the dusk and pre-dawn survey of B2 (Vardy House), occasional noctules were observed passing high over the site and reasonably regular common pipistrelle passes and foraging activity was observed, especially to the south of the building in the south of the site.

3.3.3 Commuting and Foraging Bats

The site itself provides very few opportunities for foraging and commuting bats, comprising predominantly hardstanding and buildings with a small area of amenity grassland.

3.3.4 Birds (Nesting)

The site buildings have suitability for nesting birds and evidence of old nests was observed in both Vardy House (B2) and the substation building (B5) near the entrance of the site. Furthermore, trees and scrub areas on site have suitability to support nesting birds.

3.3.5 Great Crested Newt

HSI Assessment

Two ponds are present on site (see Figure 2 for locations). Pond 1 is located to the north of the main site buildings and appears to be an artificially constructed ornamental pond. Pond 2 is a very small,

plastic-moulded pond located amongst some ornamental planting adjacent to the west of Vardy House (B2). Both ponds were subjected to HSI assessment, the results of which are displayed in Table 11.

Table 11 – HSI Assessment Results

Pond Ref and Photograph	HSI Assessment			HSI Rating
	Indices	Field Score	HSI Score	
Pond 1 – grid ref: SJ 59326 94514 	SI1 - Location SI2 - Pond Area SI3 - Pond Drying SI4 - Water Quality SI5 – Shade SI6 – Waterfowl SI7 – Fish SI8 – Ponds SI9 – Terrestrial SI10 - Macrophytes	A 85m² Never dries Moderate 0% Minor Possible 8 Poor 20%	1 0.2 0.9 0.67 1 0.67 0.67 0.83 0.33 0.50	0.61 AVERAGE
Pond 2 – grid ref: SJ 59278 94403 	SI1 - Location SI2 - Pond Area SI3 - Pond Drying SI4 - Water Quality SI5 – Shade SI6 – Waterfowl SI7 – Fish SI8 – Ponds SI9 – Terrestrial SI10 - Macrophytes	A <50m² Never dries Poor 95% Absent Absent 8 Poor 0%	1 0.05 0.90 0.33 0.20 1 1 0.83 0.33 0.30	0.43 POOR

The HSI results indicated that Pond 1 had average suitability and therefore was subjected to an eDNA survey to determine whether or not it supported GCN.

eDNA Survey

The eDNA survey returned a 'positive' result indicating likely presence of GCN within Pond 1.

3.3.6 Reptiles

The habitats on site were considered to offer negligible suitability for reptiles.

4 Conclusions and Recommendations

4.1 Designated Sites

The site is sufficiently distant from and lacks connectivity (i.e. hydrological or terrestrial through habitat such as woodland strips) to any Natura 2000 or Ramsar sites such that the proposed development is extremely unlikely to have any impact. Furthermore, the proposals are to resituate a school to the site, and as such there should not be any increase in resident numbers in the local area, meaning there should be no significant increase in recreational pressure on any designated sites.

All of the non-statutory designated sites are considered sufficiently distant and lack connectivity to the site and therefore are considered unlikely to be impacted by the proposed development. The closest is Gallows Croft LWS which comprises a stretch of broadleaved woodland along a small watercourse approximately 300m east of site. This LWS is separated from the development site by Red Bank Farm and Winwick Road and is considered unlikely to be impacted by the development.

4.2 Habitats

Ponds are listed as priority habitats under the North Merseyside Local Biodiversity Action Plan. Both ponds are man-made and historical aerial imagery reveals that neither pond was present on site 10 years ago. Pond 1 is being retained within the new development. Pond 2 will be lost to the new development, but is only of very limited ecological value being constructed from a plastic mould, completely shaded and covered by low-growing coniferous shrubs and covering only a very small area (<5m^2). Therefore, it is considered that loss of Pond 2 will not result in any significant impact to local ecology.

The amenity and modified neutral grassland on site are not classified as priority habitats and are not considered rare or uncommon within the wider area. Scattered trees offer potential for nesting birds but are not rare in the wider area and can be replaced through planting within the new development.

4.3 Protected and Notable Species

4.3.1 Roosting Bats

The emergence / re-entry surveys indicate that no roosting bats were present within the substation or Vardy House. All other buildings scheduled for demolition were assessed as having negligible suitability for roosting bats. Therefore, no European Protected Species Licence (EPSL) is required prior to demolition of any of these buildings. However, depending on when demolition is carried out, it may be necessary to undertake updated surveys (see Section 2.6 for timings and validity of surveys).

There is an opportunity to enhance the site for roosting bats post-construction by including roosting provisions within the design of the proposed development. The locations and specifications of roost boxes should be determined by an ecologist once the final development layout is available.

4.3.2 Nesting Birds

Vegetation removal (namely scattered trees) and building demolition should be undertaken outside of the breeding bird season (March to August inclusive). If this is not possible, a suitably experienced ecologist should check the habitat for breeding bird activity no more than 48 hours before clearance. If nesting activity is found, nests must be left in situ until the young have fledged.

It should be noted that not undertaking necessary vegetation clearance outside of the bird nesting season and subsequently relying on a nesting bird check during the bird nesting season frequently leads to delays in schedule. It is therefore strongly recommended to undertake vegetation clearance outside of bird nesting season to avoid such delays.

4.3.3 Great Crested Newt

eDNA results have indicated that Pond 1 supports GCN. However, the other on-site habitats provide limited suitability as a terrestrial habitat for GCN comprising hardstanding, buildings and regularly mown amenity grassland. The higher quality habitat is located within the Phase 2 application site along the western boundary and to the south of the site where there is tall ruderal, scrub and modified neutral grassland, all of which provide more shelter and cover and appear to be subject to less disturbance from management, making them more suitable for GCN in terrestrial phase.

Pond 1 will be retained within the new development. It will be necessary to maintain a corridor between Pond 1 and the higher quality GCN habitat along the railway line to the west of the site.

Because the habitat in the immediate vicinity of Pond 1 provides very limited opportunities for GCN in terrestrial phase, it is proposed that works in this area could take place without first undertaking full surveys of Pond 1 and, if necessary* subsequently securing an EPSL from Natural England, so long as a Reasonable Avoidance Method Statement is adopted which has been written by a suitably qualified and experienced ecologist.

Proposed works to the south of Vardy House which form the Phase 2 planning application (including demolition the demolition of Vardy House and construction of a new artificial sports field) will involve loss of higher quality terrestrial habitat for GCN and are therefore considered far more likely to cause disturbance to GCN. Works under the Phase 2 planning application should not commence until further survey for GCN has been undertaken at Pond 1 and if necessary*, an EPSL has been secured from Natural England.

A GCN Technical Note which outlines the likely mitigation strategy should the 2020 GCN surveys find a presence of GCN within pond 1 is provided as Appendix 4.

**With the relatively poor quality terrestrial habitat in the vicinity of Pond 1, the lack of connectivity of Pond 1 to superior habitat in the wider area, the fact that Pond 1 was constructed relatively recently (i.e. within the last 10 years) as opposed to being long established and the eDNA result returning only a 1/12 positive score for GCN, it is considered possible that the eDNA survey may have provided a 'false positive' result. If this is the case, then in fact GCN may not be present in Pond 1 at all, in which case no EPSL licence and associated mitigation strategy would be required. However, this can only be confirmed through undertaking a full survey effort in accordance with the guidance, as outlined in the previous paragraph.*

5 Other Recommendations

5.1 General Mitigation and Opportunities for Enhancement

The National Planning Policy Framework (NPPF) (2018) highlights the requirement for planning policies and decisions to conserve and enhance the natural environment.

Paragraph 170 states that this should be achieved by:

a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Paragraph 175d also states that: "opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity".

Specific recommendations for the site include the following:

- Fences between plots should be permeable to wildlife to make sure the wildlife corridors are not fragmented.
- Bat and Bird boxes could be placed on the new buildings / retained trees. A plan to show the locations of these boxes and the specifications should be produced by a suitably qualified ecologist once the layout is finalised.
- A lighting scheme should be designed (construction and permanent) to prevent disturbing the foraging and commuting bats (as well as other nocturnal wildlife).

Construction works have the potential to have significant negative impacts on site and its surrounding habitat if not undertaken properly. Therefore, all construction activities should comply with general environmental best practice measures, including:

- A Construction Environmental Management Plan (CEMP) should be implemented on site. This will detail measures avoid, minimise or mitigate any potential negative effects caused by construction practices on the environment on and surrounding the site.
- Appropriate measures to suppress dust should be put in place during hot, dry, or windy weather.
- Excavations should be sealed overnight or should have at least one shallow-sloping side allowing animals to escape should they fall in.

6 References

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IEA (1995). Guidelines for Baseline Ecological Assessment. E & F Spon.

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Gent, A.H & Gibson, S.D. (2003) Herpetofauna Workers' Manual. Joint Nature Conservation Committee, Peterborough.

Bat Conservation Trust (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (Third Edition). The Bat Conservation Trust, London.

English Nature (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

Joint Nature Conservation Committee (2004). Bat Workers Manual. JNCC, Peterborough.

Appendix 1 – Relevant Legislation

Bats

All species of bat are listed on Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and Schedule 2 of *The Conservation of Habitats and Species Regulations 2017*, making them *European Protected Species*. They are afforded full protection under Section 9(4) of the Act and Regulation 41 of the Regulations. These make it an offence to:

- deliberately capture, injure or kill any such animal;
- deliberately disturb any such animal, including in particular any disturbance which is likely to:
    - impair its ability to survive, breed, or rear or nurture their young;
    - impair its ability to hibernate or migrate.
    - affect significantly the local distribution or abundance of that species; or
- damage or destroy a breeding site or resting place of any such animal; or
- intentionally or recklessly disturb any of these animals while it is occupying a structure or place that it uses for shelter or protection; or
- intentionally or recklessly obstruct access to any place that any of these animals uses for shelter or protection

In addition, five British bat species are listed on Annex II of the Habitats Directive. These are:

- Greater horseshoe bat (*Rhinolophus ferrumequinum*)
- Lesser horseshoe bat (*Rhinolophus hipposideros*)
- Bechstein's bat (*Myotis bechsteinii*)
- Barbastelle (*Barbastella barbastellus*)
- Greater mouse-eared bat (*Myotis myotis*)

Amphibians

Great crested newt (*Triturus cristatus*) and natterjack toad (*Epidalea calamita*) are both listed on Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and Schedule 2 of *The Conservation of Habitats and Species Regulations 2017*, making them *European Protected Species*. They are afforded full protection under Section 9(4) of the Act and Regulation 41 of the Regulations. These make it an offence to:

- deliberately capture, injure or kill any such animal;
- deliberately disturb any such animal, including in particular any disturbance which is likely to:
    - impair its ability to survive, breed, or rear or nurture their young;
    - impair its ability to hibernate or migrate.
    - affect significantly the local distribution or abundance of that species; or

- damage or destroy a breeding site or resting place of any such animal; or
- intentionally or recklessly disturb any of these animals while it is occupying a structure or place that it uses for shelter or protection; or
- intentionally or recklessly obstruct access to any place that any of these animals uses for shelter or protection.

Badger

The *Protection of Badgers Act 1992* consolidates previous legislation (including the *Badgers Acts 1973 and 1991*, and the *Badgers* (*Further Protection*) *Act 1991*). It makes it an offence to:

- wilfully kill, injure or take, or attempt to kill, injure or take a badger;
- cruelly ill-treat a badger, dig for a badger; use badger tongs in the course of killing or taking, or attempting to kill or take a badger; or use for the purpose of killing or taking a badger any firearm other than that stated under the exceptions within the Act;
- intentionally or recklessly interfere with a badger sett;
- sell or offer for sale a live badger, or have possession or control of a live badger; and
- mark a badger or attach any ring, tag, or other marking device to a badger.

Section 3 of the Act defines interference (with a sett) as:

- damaging a sett;
- destroying a sett;
- obstructing access to, or any entrance of, a sett;
- causing a dog to enter a sett; or
- disturbing a badger when it is occupying a sett.

Under Section 14 of the Act, a sett is defined as "any structure or place which displays signs indicating current use by a badger".

Under Section 10 (1)(d) of the Act, a licence may be granted by Natural England to interfere with a badger sett for the purpose of development, as defined by Section 55(1) of the *Town and Country Planning Act 1990*.

Breeding Birds

With certain exceptions[1], all wild birds, their nests and eggs are protected by Section 1 of the *Wildlife and Countryside Act 1981* (as amended). Therefore, it is an offence to:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; or

[1] Some species, such as game birds, are exempt in certain circumstances.

- intentionally take or destroy the egg of any wild bird.

These offences do not apply to hunting of birds listed in Schedule 2 subject to various controls.

Bird species listed on Schedule 1 of the Act receive further protection, thus for these species it is also an offence to:

- intentionally or recklessly disturb any bird while it is nest building, or is at a nest containing eggs or young; or
- intentionally or recklessly disturb the dependent young of any such bird.

Reptiles

The four widespread[2] species of reptile that are native to Britain, namely common or viviparous lizard (*Zootoca vivipara*), slow worm (*Anguis fragilis*), adder (*Vipera berus*) and grass snake (*Natrix helvetica*), are listed on Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and are afforded limited protection under Section 9 of this Act. This makes it an offence, inter alia, to intentionally kill or injure any of these species.

Hedgehog

The hedgehog was added to the list of UK BAP species in 2007 and is on the Biodiversity Lists for England and Wales (Listed as species of principal importance under the *NERC act 2006*, and Northern Ireland (listed as a Priority Species in the Northern Ireland Priority Species List, March 2010).

Otter

The Eurasian otter is fully protected under Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and Schedule 2 of *The Conservation of Habitats and Species Regulations 2017*, making it a *European Protected Species*. It is therefore an offence to;

- intentionally or deliberately capture, injure or kill an otter.
- damage or destroy a breeding or resting place of an otter, or intentionally or recklessly damage or destroy any structure or place used for shelter or protection.
- intentionally or recklessly disturb an otter in a place used for shelter or protection, or deliberately disturb otters in such a way as to be likely significantly to affect (i) the ability of any significant group of otters to survive, breed, rear or nurture their young, or (ii) the local distribution or abundance.
- intentionally or recklessly obstruct access to a place used for shelter or protection.

A licence is required from Natural England (or the equivalent statutory body) if an otter is known to be in residence on site and will be physically disturbed.

[2] The other native species of British reptile (sand lizard and smooth snake) receive a higher level of protection under *The Habitats and Species Regulations 2017* and (in England and Wales only) the *Wildlife and Countryside Act 1981* (as amended). However, the distribution of these species is restricted to only a very few sites. All marine turtles (Cheloniidae and Dermochelyidae) are also protected.

Water Vole

The water vole received limited legal protection in April 1998 through its inclusion in Schedule 5 of the *Wildlife & Countryside Act 1981* (as amended). This protection was extended in April 2008, so that Water voles were fully protected under Section 9.

Legal protection makes it an offence to:

- intentionally kill, injure or take (capture) a water vole
- possess or control a live or dead water vole, or any part of a water vole
- intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection or disturb water voles while they are using such a place

Invasive Non-native Plant Species

The *Wildlife and Countryside Act 1981* (as amended) is the principal piece of legislation in the UK that regards invasive non-native species. It is an offence under Section 14 (2) (a) to "plant or otherwise cause to grow in the wild" any species listed on Schedule 9, Part II of the Act.

Species listed on Schedule 9, Part II are detailed in the Table below:

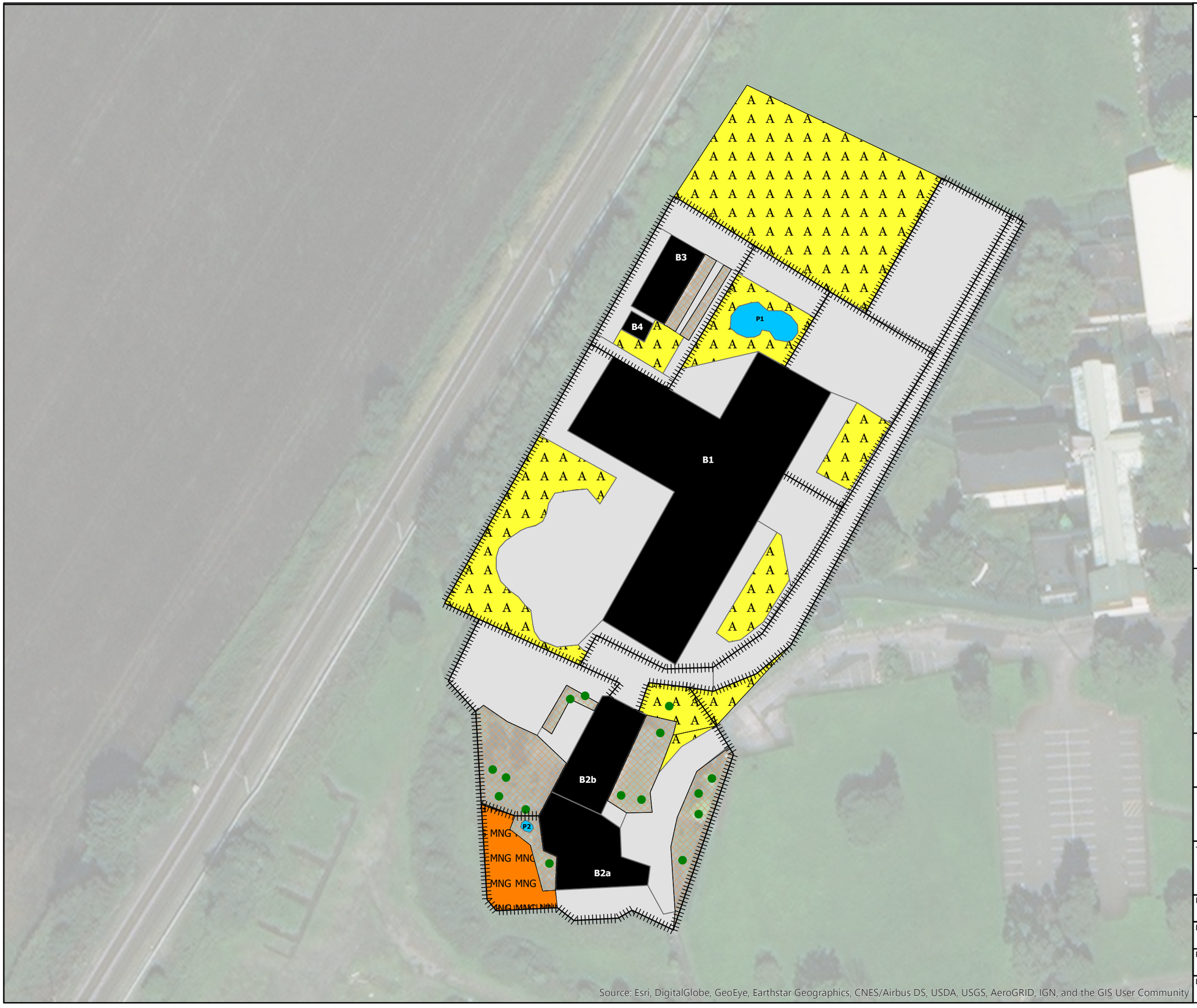
Invasive plant species listed in Schedule 9			
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Californian red seaweed	*Pikea californica*	Japanese seaweed	*Sargassum muticum*
Curly waterweed	*Lagarosiphon major*	Laver seaweeds (except native species)	*Porphyra* spp
Duck potato	*Sagittaria latifolia*	Montbretia	*Crocosmia x crocosmia*
Entire-leaved cotoneaster	*Cotoneaster integrifolius*	New Zealand pygmyweed	*Crassula helmsii*
False Virginia creeper	*Parthenocissus inserta*	Parrot's-feather	*Myriophyllum aquaticum*
Fanwort / Carolina water-shield	*Cabomba caroliniana*	Perfoliate Alexanders	*Smyrnium perfoliatum*
Few-flowered garlic	*Allium paradoxum*	Pontic rhododendron	*Rhododendron ponticum*
Floating pennywort	*Hydrocotyle ranunculoides*	Purple dewplant	*Disphyma crassifolium*
Floating water primrose	*Ludwigia peploides*	Red algae	*Grateloupia luxurians*
Giant hogweed	*Heracleum mantegazzianum*	Rhododendron	*Rhododendron ponticum* × *Rhododendron maximum*
Giant kelp	*Macrocystis* spp.	Small-leaved cotoneaster	*Cotoneaster microphyllus*
Giant knotweed	*Fallopia sachalinensis*	Three-cornered garlic	*Allium triquetrum*
Giant rhubarb	*Gunnera tinctoria*	Variegated yellow archangel	*Lamiastrum galeobdolon* subsp. *argentatum*
Giant salvinia	*Salvinia molesta*	Virginia creeper	*Parthenocissus quinquefolia*
Green seafingers	*Codium fragile*	Wakame	*Undaria pinnatifida*
Himalayan cotoneaster	*Cotoneaster simonsii*	Wall cotoneaster	*Cotoneaster horizontalis*
Hollyberry cotoneaster	*Cotoneaster bullatus*	Water fern	*Azolla filiculoides*
Hooked asparagus seaweed	*Asparagopsis armata*	Water hyacinth	*Eichhornia crassipes*
Hottentot fig	*Carpobrotus edulis*	Water lettuce	*Pistia stratiotes*
Hybrid knotweed	*Fallopia japonica* × *Fallopia sachalinensis*	Water primrose	*Ludwigia grandiflora* & *Ludwigia uruguayensis*

Invasive plant species listed in Schedule 9			
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Indian (Himalayan) balsam	*Impatiens glandulifera*	Waterweeds	*Elodea* spp.
Japanese knotweed	*Fallopia japonica*	Yellow azalea	*Rhododendron luteum*
Japanese rose	*Rosa rugosa*		

In accordance with Sections 33 and 34 of the *Environmental Protection Act 1990*, if taken from their place of origin, any plant listed on Schedule 9, Part II of the *Wildlife and Countryside Act 1981* (as amended) and their associated material (e.g. soil and ash) are classed as controlled waste and must be disposed of at a licenced landfill site by a licenced waste carrier. Any waste being disposed of must be accompanied by appropriate waste transfer documentation.

In accordance with Section 79 of the *Environmental Protection Act 1990*, in certain circumstances Local Authorities have the power to deal with plants that are considered to be a statutory nuisance. A statutory nuisance is defined as: "any premises in such a state as to be prejudicial to human health or a nuisance". For instance, giant hogweed can be considered a statutory nuisance where the plant is growing along pathways or on land which is easily accessible to users or passers-by as the plant is a risk to human health upon contact.

Appendix 2 – Habitat Map and Target Notes



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

- Amenity grassland
- Buildings
- Hardstanding
- Introduced shrub
- MNG Modified neutral grassland
- Standing water
- Fence
- Scattered trees

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Client: **GALLIFORD TRY**

Project: **UG102 PENKFORD SCHOOL/ REDBANK (Phase one)**

Title: **PHASE ONE HABITAT MAP**

Issue: **PLANNING**

Drawn:	Checked:	Approved:
RMu	NS	NS
Project:	**Scale @ A3:**	**Date:**
UG102	1:1250	20/12/19
Dwg No:		**Revision:**
UG_102_ECO_HM_02		02

Appendix 3 - Botanical Species List

DAFOR = (L = Locally) D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare.

Common Name	Scientific Name	DAFOR*
Modified Neutral Grassland		
Red fescue	*Festuca rubra*	D
Yorkshire fog	*Holcus Lanatus*	D
Cinquefoil	*Potentilla sp.*	D
Creeping buttercup	*Ranunculus repens*	A
Yarrow	*Achillea millefolium*	F
Common bent	*Agrostis capillaris*	O
Common mouse ear	*Cerastium fontanum*	O
Creeping thistle	*Cirsium arvense*	O
Cock's-foot	*Dactylis glomerata*	O
Herb Robert	*Geranium robertianum*	O
Ribwort plantain	*Plantago lanecolata*	O
Broadleaf dock	*Rumex obtusifolius*	O
Ragwort	*Senecio jacobaea*	O
Chickweed	*Stellaria media*	O
Dandelion	*Taraxacum officinalis*	O
White clover	*Trifolium repens*	O
Scattered Trees		
Birch	*Betula spp.*	O
Privet	*Ligustrum ovalifolium*	O
Poplar	*Populus spp.*	O
Willow	*Salix spp.*	O
Elder	*Sambucus nigra*	O
Norway maple	*Acer platanoides*	R
Alder	*Alnus glutinosa*	R
Lawson Cypress	*Chamaecyparis sp.*	R
Hawthorn	*Cratageus monogyna*	R
Cedar	*Cedrus spp.*	R
Beech	*Fagus sylvatica*	R
Ash	*Fraxinus excelsior*	R
Laburnum	*Laburnum anagryoides*	R
Cherry	*Prunus sp*	R
Whitebeam	*Sorbus sp.*	R
Lime	*Tilia spp.*	R

Appendix 4 – GCN Technical Note

GCN Technical Note

December 2019

Penkford School
Newton-le-Willows
St. Helens

URBAN GREEN

QUALITY MANAGEMENT

Project No.:	UG201		
Project:	Penkford School		
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Background to the Scheme

A Preliminary Ecological Appraisal was undertaken by Urban Green at the former Red Bank Secure Unit in 2019.

One of the ponds on site is an artificially constructed ornamental pond within the hardstanding of the existing buildings. This pond was considered to provide a sub-optimum habitat for GCN due to the following:

- the immediate surroundings of the pond comprise hardstanding and regularly mown amenity grassland which have limited suitability as a terrestrial habitat for GCN;
- the pond was constructed within the last 10 years; and
- there is a kerb and solid mesh fence which separate the pond from the rest of the site, which would restrict the dispersal of GCN throughout the site as illustrated in the photographs below.

Photograph 1: Pond and existing fencing/kerb

eDNA analysis on the abovementioned pond in 2019 indicated that there is a likely presence of GCN within the pond, returning a result of a 1/12 positive score for GCN. Due to the suboptimal suitability of the pond as outlined above and the low result score, it cannot be ruled out there is a possibility that the eDNA survey has returned a false positive result. Full GCN surveys will be undertaken on the pond in Spring 2020 to confirm the result (and if present, make a population size assessment).

There is higher quality GCN habitat present on site along the western boundary and in the south of the site where there is tall ruderal, scrub and modified neutral grassland, all of which provide more shelter and cover and appear to be subject to less disturbance from management, making them more suitable for GCN in terrestrial phase.

Due to the results of the eDNA assessment, the wider scheme is now progressing with two separate planning applications; Phase 1 encompassing areas of the site which are not a suitable habitat for GCN (notably the hardstanding and existing buildings) to be submitted prior to full GCN surveys on the pond and Phase 2 encompassing the areas of the site which are suitable for GCN (notably the scrub, tall ruderal and modified neutral grassland) to be submitted once full GCN surveys have been undertaken.

This Technical Note has been produced to outline the GCN mitigation strategy that would be adopted, should the 2020 surveys find a population of GCN in the pond, in order to support the Phase 1 application.

GCN Survey

Conventional pond surveying will be 6 visits undertaken between mid-March and mid-June inclusive to confirm the presence/absence of GCN, with at least three visits undertaken between the peak season of mid-April and mid-May, and will encompass three methods, ideally: torch searching, bottle trapping and egg searching.

Phase 1 Mitigation

The existing fencing and kerb surround the pond will be retained as works are carried out under the Phase 1 application, which will act as a barrier to the dispersal of GCN throughout the site. Phase 1 works will be carried out in accordance with a Reasonable Avoidance Method Statement (RAMS) that involves the following:

- A no work buffer from the pond will be retained at all times in which works will not be permitted (i.e. excavation, clearance, excavation, storage of materials, etc.).
- Before works start, a toolbox talk should be delivered to all site personnel explaining the legal implications of harming / disturbing GCN, what GCN look like and that should anyone suspect they have observed GCN within the construction zones on site, all works should cease immediately and an ecologist should be consulted for further guidance.
- Any excavation of amenity grassland within 250m of Pond 1 should be preceded by a hand search by a GCN licensed Ecological Clerk of Works (ECoW) to check that no GCN are present. Should any GCN be found, works must cease until a European Protected Species Licence (EPSL) has been secured from Natural England, however, this is deemed unlikely due to the poor suitability of this amenity grassland habitat for GCN.
- Excavations should be sealed overnight or should have at least one shallow-sloping side allowing animals including GCN to escape should they fall in.
- Any spoil, plant arisings or other waste materials generated from the works must not be left piled on site where possible. Should it be necessary to leave these piled on site, they should be positioned as far from Pond 1 as possible and should be securely covered by an impermeable membrane such that GCN (or other animals) cannot gain access into them.

Phase 2 Mitigation

Should the 2020 GCN surveys find a population of GCN present in the on-site pond, once planning permission has been granted for the Phase 2 application, an application for an EPSL will be submitted to Natural England. The mitigation strategy will involve fencing off the areas of higher quality GCN habitat on site and translocating the GCN to a purpose-built designated area to the north of the site.

Terrestrial habitat improvements will be required in the GCN Mitigation Area as the land is currently amenity grassland, which will involve seeding with an appropriate wildflower grass seed mix as well as hibernacula creation. The GCN mitigation area will be created in advance of the translocation and will be already established when the translocation programme begins. The area will be fenced with Temporary Amphibian Fencing (TAF) immediately prior to the translocation of any GCN.

The pond on site will be retained within the new development and connectivity to the pond and the GCN habitat on site will be comparable pre and post development, with the scrub and tall ruderal vegetation along the western boundary acting as the main corridor along the site.

The suitable GCN habitat on site will be compartmentalised into suitable areas practical for trapping and drift fencing will be installed in these areas. The installation of fencing would require an initial hand search by the licenced ecologist (or the accredited agent) followed by hand strimming to a minimum of 150mm. The installation of fencing will be supervised by the licensed ecologist. Fencing will need to be carefully maintained until the completion of the GCN translocation programme to ensure that it is performing its function.

A combination of pitfall traps and refuges will be used, which will be placed at approximately 5-meter intervals on the interior and exterior side of any drift fencing and along any perimeter fencing intervals. Traps will be checked daily before 11am and any amphibians captured will be moved to the appropriate GCN mitigation area as soon as possible.

The level of effort required for a small population is a minimum of 50 traps/ha and a minimum effort of 30 nights of trapping between late March and mid-October until there are five clear nights with no GCN trapped. The 30 nights of trapping need to be during suitable weather conditions were GCN capture is likely, and so the programme is likely to run over 30 days.

When the trapping period has finished and 5 consecutive nights are recorded, the internal drift fencing will be removed carefully, so that works can proceed, whilst maintaining the perimeter fence.

Figure 1. GCN Mitigation Strategy