



WE KNOW SERVICES

ECOLOGY SURVEY AND ASSESSMENT

VALLEYFIELD
NORTH END LANE
HALEWOOD
KNOWSLEY
L26 5QB

APRIL 2021

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Summary

- This ecological appraisal presents the ecological, biodiversity and nature conservation status of Valleyfield, North End Road, Halewood. The appraisal was requested in connection with proposals to demolish and rebuild the existing dwelling.
- The results of a desktop study and extended Phase 1 Habitat Survey carried out in April 2021 are presented. The scope of the ecology survey and assessment is appropriate to enable the identification of any potential ecological constraints, the scope of mitigation if required and opportunities to enhance biodiversity at the site.
- The site comprises of mixed trees, hedges, introduced shrubs, amenity grassland, an ornamental pond, buildings and hard standing.
- The proposals will have no adverse direct or indirect effect on statutory or non-statutory designated sites for nature conservation.
- The site contains only common widespread species and none of the habitats are significant in terms of their plant species composition.
- Features suitable for roosting bats were detected at the existing dwelling. Further surveys are recommended at **Section 4.3** to confirm the presence or absence of roosting bats. If the presence of roosting bats is confirmed a licence from Natural England must be obtained and an appropriate mitigation strategy must be implemented prior to the commencement of works at these buildings.
- Habitats within the site are suitable for foraging and nesting passerine bird species. Recommendations for the protection of nesting birds and opportunities presented by the proposals to create provision for nesting birds are described at **Section 5.3**.
- The site supports suitable foraging and sheltering habitat for hedgehog (a priority species). However, the proposals will not result in loss of sheltering and foraging habitat for hedgehog and suitable habitat will remain available in the site and the surrounding landscape.
- No other protected species have been detected. Appropriate survey effort and assessment in accordance with standard survey guidance has been carried out to reasonably discount adverse impacts on badger, great crested newt, invertebrates, reptiles and riparian mammals.
- It is considered that the proposals are feasible and acceptable in accordance with ecological considerations, wildlife legislation and relevant planning policy.

1.0 Introduction

- 1.1 We Know Services were instructed to carry out an ecological appraisal of Valleyfield, North End Road, Halewood (hereafter referred to as the 'site'). The Ordnance Survey (OS) grid reference at the centre of the site is SJ 44144 87272. The appraisal was requested in connection with proposals to redevelop the site.
- 1.2 This report details the results of the following ecology surveys and assessments:
- Desktop study to collate known ecology information at the site and local area.
 - Extended Phase 1 Habitat Survey.
 - Assessment of the ecological value of habitats within the site and its surrounds.
 - Survey and assessment of all habitats for protected and notable species including amphibians, badger (*Meles meles*), bats, birds, invertebrates, reptiles and riparian mammals.
- 1.3 The information gathered has been used to identify the ecological constraints on the proposals and the scope of mitigation and ecological enhancement required in order to comply with wildlife legislation and planning policy guidance. In addition, details relating to the need for any further surveys or precautionary actions that may be required prior to commencement of site works are provided.

2.0 Survey Methodology

2.1 Desktop Study

- 2.1.1 The following sources of information were consulted:
- Multi-Agency Geographic Information for the Countryside (MAGIC) at magic.defra.gov.uk.
 - Natural England at gov.uk/government/organisations/natural-england.
 - Merseyside BioBank.

2.2 Plant Species and Habitats

- 2.2.1 An extended Phase 1 Habitat Survey of the site was conducted on the 23rd April 2021 by Dr Nicola Wallbank B.Sc (Hons) Ph.D. ACIEEM.

- 2.2.2 A habitat map (**Figure 7.1** at **Appendix 1.0**) was produced for the site based on the methodology as detailed in *Handbook for Phase 1 Habitat Survey: A technique for environmental audit* (JNCC, 2010).
- 2.2.3 Plant species abundance was estimated using the DAFOR system: D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = rare. To describe the species abundance with greater accuracy the terms Locally (L) and Very (V) have been used.
- 2.2.4 A search for invasive species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended), including Japanese Knotweed (*Fallopia japonica*), Indian Balsam (*Impatiens glandulifera*) and Giant Hogweed (*Heracleum mantegazzianum*).
- 2.3 **Fauna**
- 2.3.1 The methods applied to establish the presence or potential presence of protected and notable animal species on site and within the immediate surroundings are detailed in **Table 2.1**, below.

Table 2.1: Summary of Protected and Priority Species Survey Methods

Species/Group	Survey Methodology
Badger	The site was inspected for badger activity. The survey area covered the site and extended to accessible land within a 30-metre radius of the site boundary. The survey was conducted in accordance with <i>Badgers: surveys and mitigation for development projects</i> (Natural England, 2015) and involved searching for signs of badger such as setts, footprints, latrines and hairs
Bats	The suitability of all buildings and trees within the site for roosting bats and the value of habitats on and adjacent to site for commuting and foraging bats was assessed in accordance with Table 4.1 of <i>Bat Surveys for Professional Ecologists: Good Practice Guidelines</i> (3 rd edn) (Collins, J. (ed.), 2016)
Birds (Including Barn Owl)	All bird species observed and heard during the habitat survey were recorded and habitats within the site were assessed for their value to roosting, feeding and nesting birds, as indicated by the amount of shelter, feeding value and habitat structure The suitability of the site to support barn owl (<i>Tyto alba</i>) was assessed as indicated by the presence of appropriate nest and/or roost sites such as farm buildings, mature trees, mounted nest boxes as well as favourable foraging habitat in accordance with <i>Barn Owl Tyto alba Methodology and Techniques for use in Ecological Assessment</i> (Shawer, 2001) and <i>Barn Owl Conservation Handbook</i> (Barn Owl Trust, 2012).
Great crested newt	In accordance with <i>Great crested newts: surveys and mitigation for development projects</i> (Natural England, 2015) all ponds within an unobstructed 500 metre radius of a site were be considered for their suitability to support breeding great crested newts (<i>Triturus cristatus</i>)

Species/Group	Survey Methodology
Invertebrates	The site was assessed for its potential to support notable invertebrate assemblages as indicated by the presence of habitat features such as heathland, bogs, mire, ancient woodland, water bodies, floristic diversity and deadwood
Reptiles	The site and its surrounds were assessed in terms of their suitability for use by reptiles species based on their habitat requirements as detailed in the <i>Reptile Habitat Management Handbook</i> (Edgar et al., 2010)
Riparian mammals	There are no watercourses on site or within 500 metres of the site. In addition, there are no ditches on site or within the surrounding landscape that have connectivity with the site. Therefore, the presence of riparian mammals is reasonably discounted.
Other wildlife	The site was assessed for its suitability for use by notable species associated with residential properties in rural landscapes such as hedgehog (<i>Erinaceus europaeus</i>)

2.4 Survey Limitations

- 2.4.1 No survey limitations were experienced during the habitat survey as it was conducted within the optimum Phase 1 Habitat Survey period (April to October inclusive) and all areas of the site were accessible.

3.0 Results

3.1 Desktop Study

Site Designations

- 3.1.1 The site has no statutory or non-statutory designation for nature conservation. One non-statutory site, Knowsley Local Wildlife Site (LWS), was identified within one kilometre of the site (as detailed in **Table 3.1**, below).

Table 3.1: Designated Nature Conservation Sites within 1 Kilometre

Site	OS Grid Reference	Distance from Site
Tributory of Netherley Brook	SJ445 874	215 metres north

- 3.1.2 The site lies within a Site of Special Interest (SSSI) Impact Risk Zone for the Mersey Estuary SSSI, Special Protection Area (SPA) and Ramsar site which is situated approximately 5.25 kilometres to the south-east. Residential proposals within this Impact Risk Zone do not require further consultation.

Protected and Notable Species Records

- 3.1.3 There are no protected or notable species records for the site. **Table 3.2** below details the protected and notable species records identified within one kilometre of the site.

Table 3.2: Protected and Notable Species Records within 1 Kilometre

Group	Species and Designation	Notes
Amphibians	Common Toad (<i>Bufo bufo</i>) – S41	Eight records between 1997 and 2017 the nearest being on Lee Park Golf Course
	Great Crested Newt (<i>Triturus cristatus</i>) – EPS, WCAs5, S41 and LBAP	A total of 45 records between 1999 and 2008 the nearest being on Lee Park Golf Course
Birds	Kingfisher (<i>Alcedo atthis</i>) – WCAs1	One record from 2014 at Netherley Brook
	S41 and LBAP - Corn Bunting (<i>Emberiza calandra</i>), Grey Partridge (<i>Perdix perdix</i>), House Sparrow (<i>Passer domesticus</i>), Lapwing (<i>Vanellus vanellus</i>), Skylark (<i>Alauda arvensis</i>), Song Thrush (<i>Turdus philomelos</i>), Starling (<i>Sturnus vulgaris</i>) and Swift (<i>Apus apus</i>).	
	S41 - Bullfinch (<i>Pyrrhula pyrrhula</i>), Dunnock (<i>Prunella modularis</i>), Grasshopper Warbler (<i>Locustella naevia</i>) Lesser Spotted Woodpecker (<i>Dendrocopos minor</i>), Reed Bunting (<i>Emberiza schoeniclus</i>), Tree Sparrow (<i>Passer montanus</i>), Willow Tit (<i>Poecile montana</i>), Yellowhammer (<i>Emberiza citrinella</i>). LBAP - House Martin (<i>Delichon urbicum</i>) and Swift (<i>Apus apus</i>).	
Flowering plants	WCAs8 -Bluebell (<i>Hyacinthoides non-scripta</i>)	
	S41 - Cornflower (<i>Centaurea cyanus</i>)	
Invertebrates	S41 - Wall (<i>Lasiommata megera</i>), Buff Ermine (<i>Spilosoma lutea</i>) and Rosy Minor (<i>Litoligia literosa</i>) LBAP - Azure Damselfly (<i>Coenagrion puella</i>), Banded Demoiselle (<i>Calopteryx splendens</i>), Black-tailed Skimmer (<i>Orthetrum cancellatum</i>), Blue-tailed Damselfly (<i>Ischnura elegans</i>), Broad-bodied Chaser (<i>Libellula depressa</i>), Brown Hawker (<i>Aeshna grandis</i>), Common Blue Damselfly (<i>Enallagma cyathigerum</i>), Common Darter (<i>Sympetrum striolatum</i>), Emperor Dragonfly (<i>Anax imperator</i>), Four-spotted Chaser (<i>Libellula quadrimaculata</i>), Large Red Damselfly (<i>Pyrrhosoma nymphula</i>), Migrant Hawker (<i>Aeshna mixta</i>), Red-eyed Damselfly (<i>Erythromma najas</i>), Ruddy Darter (<i>Sympetrum sanguineum</i>) and Southern Hawker (<i>Aeshna cyanea</i>)	

Group	Species and Designation	Notes
Terrestrial mammal	Daubenton's Bat (<i>Myotis daubentonii</i>) – EPS, WCAs5	One record from 2017 on Lee Park Golf Course
	Red Squirrel (<i>Sciurus vulgaris</i>) – WCAs5	Two records from 2008 within one km
	European Water Vole (<i>Arvicola amphibius</i>) – WCAs5	Five records between 1996 and 2000 the nearest being at Netherley Brook
	Noctule (<i>Nyctalus noctula</i>) – EPS, WCAs5	One record from 2017 at Lee Park Golf Course
	Common Pipistrelle (<i>Pipistrellus pipistrellus</i>) – EPS, WCAs5	Five records between 2007 and 2015 the nearest on Lee Park Golf Course
	Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>) – EPS, WCAs5	One record from 2017 at Lee Park Golf Course
	West European Hedgehog (<i>Erinaceus europaeus</i>) – S41	A total of 20 records between 1993 and 2019 the nearest being North End Farm
Key: EPS – European Protected species under <i>The Conservation of Habitats and Species Regulations 2010</i> (as amended) WCAs1 - Protected under Schedule 1 of the <i>Wildlife and Countryside Act 1981</i> (as amended). WCAs8 - Protected under Schedule 8 of the <i>Wildlife and Countryside Act 1981</i> (as amended). S41- Species of principal importance for conservation, as listed under Section 41 of the <i>NERC Act 2006</i> . and LBAP – North Merseyside Priority Species		

3.2 Plant Species and Habitats

3.2.1 The site measures approximately 0.2 hectares in size and lies within a rural setting on the fringe of Halewood. The four boundaries are defined by hedges or fencing beyond. To the north, west and south of the site lies agricultural land. To the east of the site are residential houses and their associated gardens.

3.2.2 The site comprises of mixed trees, hedges, introduced shrubs, amenity grassland, an ornamental pond, a dwelling, garage and hard standing.

3.2.3 A Phase 1 Habitat map is appended at **Figure 7.1**

Mixed Trees and Introduced Shrubs

3.2.4 There are several mixed trees within the site. Species comprise Cedar (*Cedrus* species), *Eucalyptus* species, Cypress (*Cupressus* species), Scots Pine (*Pinus sylvestris*), Willow (*Salix* species), Maple (*Acer* species), English Oak (*Quercus robur*), Plum (*Prunus domestica*), Wild Cherry (*Prunus avium*), Apple (*Malus* species.), *Magnolia* species and Hawthorn (*Crataegus monogyna*).

- 3.2.5 The suitability of the trees to support roosting bats is assessed at **Section 3.3**.

- 3.2.6 In addition, there are several ornamental planting beds within the site which comprise species such as Cherry Laurel (*Prunus laurocerasus*), *Euonymus*, *Hydrangea*, *Photinia*, *Viburnum*, *Mahonia*, *Berberis* and Box (*Buxus sempervirens*).

Hedges

Hedge 1

- 3.2.7 Hedge 1 (refer to **Figure 7.1**) defines the western boundary. The hedge is approximately 80 metres long, one metre wide and 2.0 metres high. The hedgerow comprises entirely of Leyland Cypress (*Cupressus x leylandii*). The comprises locally abundant Ivy (*Hedera helix*), frequent Cleavers (*Galium aparine*) and Yorkshire Fog (*Holcus lanatus*) as well as occasional Creeping Thistle (*Cirsium arvense*) and Bramble (*Rubus fruticosus* agg.).

Hedge 2

- 3.2.8 Hedge 2 (refer to **Figure 7.1**) is situated on the southern boundary. The hedge is approximately 8 metres long, 0.5 metres wide and 2.0 metres high. The hedge comprises entirely of Garden Privet (*Ligustrum Ovalifolium*). There are no understorey plants.

Amenity Grassland

- 3.2.9 The majority of the site comprises closely mown amenity grassland. This habitat is characterised by dominant Perennial Rye-grass (*Lolium perenne*), abundant Red Fescue (*Festuca rubra*), occasional Selfheal (*Prunella vulgaris*), White Clover (*Trifolium repens*) and Daisy (*Bellis perennis*) and very locally frequent Springy Turf-moss (*Rhytidiadelphus squarrosus*).

Ponds

- 3.2.10 A single ornamental pond is present on site (refer to **Photograph 7.1**). The pond is situated within a planting bed and is constructed from a rubber liner with stones stacked around all sides. The pond is less an 1m² in size. Duckweed (*Lemna minuta*) is present within the waterbody.

Buildings

Dwelling

- 3.2.11 Refer to **Photographs 7.2 to 7.8**.
- 3.2.12 The detached two-storey dwelling is constructed from mortared brick walls with a pitched roof of clay tiles. There are two conservatories attached to the dwelling on the north-eastern and north-western

elevation. Adjoining the dwelling is an oil tank (to the north-east) and garage (to the south-east). The dwelling supports one brick chimney, one dormer window and one bay window. The roof is supported by traditional timber purlins and rafters.

- 3.2.13 Lifted tiles were observed on the north-western and north-eastern roof elevations. In addition, gaps are present at the roof verge (edge of roof as it meets the gable end) where mortar has fallen away, and open vents provide access into the roof void from the building's exterior.

Garage

- 3.2.14 Refer to **Photographs 7.9** and **7.10**. Adjacent to the dwelling is a single storey garage which is constructed from walls of brick and corrugated sheeting with a pitched roof of corrugated asbestos. Attached to the garage is a timber woodstore covered with corrugated metal sheeting. This structure does not support a loft space.

Invasive Species

- 3.2.15 No Japanese Knotweed or any other species listed on Schedule 9 of the *Wildlife and Countryside Act 1981* (as amended) is present within the site.

3.3 Fauna

Badger

- 3.3.1 No setts or signs of badger activity were observed within the site or its surrounds. As such, the presence of badger is reasonably discounted.

Roosting Bats

- 3.3.2 No bats or signs of bats were detected at the external elevations or internal areas of the building of the dwelling or garage.
- 3.3.3 It is acknowledged that part of the roof space within the dwelling provides adequate space for free flight and opportunities for shelter suitable for use by loft dwelling species such as brown long-eared bats (*Plecotus auritus*). However, no physical evidence suggesting the presence of this species was identified.
- 3.3.4 No opportunities for use by hibernating bats at the site were detected.
- 3.3.5 No evidence was observed to suggest the presence of crevice dwelling species such as *Pipistrellus* sp. However, it should be noted that signs of crevice dwelling bats are not always observable and features that have the potential to support crevice dwelling species were identified on the dwelling. As such, the presence of individual roosting bats cannot be reasonably discounted.

- 3.3.6 **Table 3.2** below details the trees identified within the site and their suitability to support roosting bats. None of the trees on site contain any features suitable for use by roosting bats. As such, all trees on site are of negligible suitability for roosting bats in accordance with **Table 2.1**.

Table 3.2: Description of Trees On-site and Suitability to Support Roosting Bats

Tree/Group Reference (refer to Figure 7.1) *	Species Common Name	Age	Height (M)	DBH (mm)	Description / Potential Roosting Features (PRFs)	Bat Roost Suitability
T1	Hawthorn	EM	7.5	110	In good condition with no PRFs. Stem and lateral branches intact with no cracks, crevices or peeling/lifted bark or other sheltered spaces suitable to support bats	Negligible
T2	Maple	EM	6.5	200	In good condition with no PRFs. Stem and lateral branches intact with no cracks, crevices or peeling/lifted bark or other sheltered spaces suitable to support bats	Negligible
T3	Cedar	M	16.0	390	In good condition with no PRFs. Stem and lateral branches intact with no cracks, crevices or peeling/lifted bark or other sheltered spaces suitable to support bats	Negligible
T4	Eucalyptus	M	18.0	610	In good condition with no PRFs. Stem and lateral branches intact with no cracks, crevices or peeling/lifted bark or other sheltered spaces suitable to support bats	Negligible
T5	Pine	M	22.0	630	In good condition with no PRFs. Stem and lateral branches intact with no cracks, crevices or peeling/lifted bark or other sheltered spaces suitable to support bats	Negligible
T6	Cypress	M	17.0	600	In fair condition with no PRFs. This tree has some minor stem decay at however, wound wood is present and there are no sheltered spaces or	Negligible

Tree/Group Reference (refer to Figure 7.1) *	Species Common Name	Age	Height (M)	DBH (mm)	Description / Potential Roosting Features (PRFs)	Bat Roost Suitability
					access points to internal cavities associated with this feature.	
T7	Oak	EM	15.0	400	In good condition with no PRFs. Stem and lateral branches intact with no cracks, crevices or peeling/lifted bark or other sheltered spaces suitable to support bats	Negligible
T8	Cherry	Y	3.0	80	Not of suitable size or age to support potential roosting features	Negligible
T9	Magnolia	M	5.0	110	Not of suitable size to support potential roosting features	Negligible
T10	Cypress	Y	3.0	75	Not of suitable size or age to support potential roosting features	Negligible
T11	Magnolia	M	4.5	250	Not of suitable size to support potential roosting features	Negligible
T12	Cypress	EM	8.0	150	Not of suitable size to support potential roosting features	Negligible
G1	6 Fruit trees	Y	5.0	100 Avg.	Not of suitable size or age to support potential roosting features	Negligible
G2	Cypress	M	7.5	200 Avg.	In good condition with no PRFs. Stems and lateral branches intact with no cracks, crevices or peeling/lifted bark or other sheltered spaces suitable to support bats	Negligible
G3	3 Cypress & 1 Cherry	M	9.0	200 Avg.	In good condition with no PRFs. Deadwood branches are present in the group, but these do not contain any crevices, peeling bark or other sheltered spaces suitable to support bats	Negligible

Tree/Group Reference (refer to Figure 7.1) *	Species Common Name	Age	Height (M)	DBH (mm)	Description / Potential Roosting Features (PRFs)	Bat Roost Suitability
G4	Mixed species	EM	10.0	250 Avg.	In good condition with no PRFs. Stems and lateral branches intact with no cracks, crevices or peeling/lifted bark or other sheltered spaces suitable to support bats	Negligible
* Reference numbers correspond with those used in the Arboricultural Impact Assessment						

Commuting and Foraging Bats

- 3.3.7 The trees on site are suitable for commuting and foraging bats. However, the site does not support features which would provide a diversity or abundance of invertebrate prey for foraging bats, such as species-rich grassland and suitable waterbodies.

Great Crested Newt

Initial Desktop Search for Ponds

- 3.3.8 A total of four ponds have been identified from Ordnance Survey maps and aerial photography within 500 metres of the site, as detailed in **Table 3.3**.

Table 3.3: Ponds within 500 Metres of the Site

Reference	OS Grid Reference	Distance from Site	Location
1	SJ 44164 87290	On site	Ornamental pond on site
2	SJ 44195 87276	30 metres	Drainage area within wooded area to the east of the site
3	SJ 43879 87157	247 metres	Within wooded area south-west of the site
4	SJ 44156 87672	350 metres	North of the site within Lee Park Golf Course
5	SJ 44028 87710	400 metres	North of the site within Lee Park Golf Course

Consideration of Requirements for Further Survey

- 3.3.9 Pond 1 is situated on site.
- 3.3.10 Pond 2 is separated from the site by woodland and scrub. It is considered unlikely that newts will migrate towards the site due to the presence of more favourable surrounding the pond however, no dispersal barriers are present.
- 3.3.11 Ponds 3, 4 and 5 are separated from the site by farmland, amenity. It is considered highly unlikely that newts will migrate towards the site from these ponds due to the presence of more favourable immediate (<50 metres) and intermediate (50 to <250 metres) terrestrial habitats.
- 3.3.12 Ponds 1 and 2 are within 100 metres of the site. Pond 3 is between 100 and 250 metres from the site, and the remaining ponds are at between 250 and 500 metres from the site.
- 3.3.13 Due to the presence of Pond 1 on site and the proximity of Pond 2, it was considered necessary to further assess these waterbodies for their potential to support breeding great crested newt using the Habitat Suitability Index Assessment methodology (Oldham *et al.*, 2000).

- 3.3.14 The survey and assessment of ponds was carried out by Nicola Wallbank. Nicola holds a Natural England Class Survey Licence WML-CL08 (Great Crested Newt Survey Level 1), registration number 2015-17731-CLS-CLS.
- 3.3.15 The site is sufficiently small and distance from Ponds 3 to 5 to impact upon great crested newt populations (if present). Therefore, no further assessment of these ponds has been made.

Habitat Suitability Assessment

- 3.3.16 The results of the Habitat Suitability Index Assessment of Pond 1 are presented at **Table 3.3** below:

Table 3.3: Habitat Suitability Index Assessment for Pond 1

Criteria	Description	Pond 1	Score ¹
Sl ₁	Location	Optimal	1.00
Sl ₂	Pond area	<1m ²	0.05
Sl ₃	Pond drying	Never dries	0.90
Sl ₄	Water quality	Poor	0.33
Sl ₅	Shade	80%	0.60
Sl ₆	Fowl	Absent	1.00
Sl ₇	Fish	Absent	1.00
Sl ₈	Ponds ²	1	0.40
Sl ₉	Terrestrial habitat	Moderate	0.67
Sl ₁₀	Macrophytes	0%	0.30
Assessment		Poor	0.48
¹ Calculated by $(Sl_1 \times Sl_2 \times Sl_3 \times Sl_4 \times Sl_5 \times Sl_6 \times Sl_7 \times Sl_8 \times Sl_9 \times Sl_{10})^{1/10}$			
² Ponds with an unobstructed one kilometre radius			

- 3.3.17 Pond 2 was dry at the time of the habitat survey. As such, a Habitat Suitability Index Assessment could not be conducted appropriately. However, it was noted that this waterbody is heavily shaded, likely support low invertebrate diversity and low macrophyte cover.

Birds

- 3.3.18 The trees and shrubs on site are suitable for use by passerine bird species. Blackbird (*Turdus merula*), house sparrow (*Passer domesticus*), magpie (*Pica pica*), long-tailed tit (*Aegithalos caudatus*), woodpigeon (*Columba palumbus*), carrion crow (*Corvus corone*), robin (*Erithacus rubecula*) and goldfinch (*Carduelis carduelis*) were observed during the habitat survey.
- 3.3.19 The site does not contain suitable habitats for ground nesting or wintering bird species. In addition, the site does not contain any suitable foraging, nesting or roosting habitat for barn owl.

Invertebrates

- 3.3.20 Habitats within the site do not have the potential to support notable assemblages of invertebrate species due to their management and lack of species diversity.

Reptiles

- 3.3.21 The site and its surrounds provide poor quality habitat for sheltering, basking and hibernating reptile. The site supports a largely even topography and few semi-natural habitats. The site is not adjacent or linked to any areas of favourable habitat for reptile species. The presence of reptiles within the site is reasonably discounted.

Other Wildlife

- 3.3.22 Habitats within the site are suitable for foraging and sheltering hedgehog. As such, the presence of hedgehog is likely.

4.0 Evaluation and Assessment

4.1 Designated Sites

- 4.1.1 The site has no designation for nature conservation. Due to the lack of connectivity between site and areas designated for nature conservation and as habitats on site do not compliment those of the designated sites, it is considered reasonably unlikely that the proposals will impact any statutory or non-statutory sites, or the features for which they have been designated.

4.2 Plant Species and Habitats

- 4.2.1 The site contains only common widespread species and none of the habitats are significant in terms of their plant species composition.

4.3 Fauna

Bats

Roosting Bats

- 4.3.1 It is considered that the dwelling is of moderate suitability to support roosting bats in accordance with the criteria listed in Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)* (Collins, J. (ed.), 2016) as the buildings have the potential to support one or more roost sites but unlikely to support a roost of high conservation status.
- 4.3.2 In accordance with best practice at least two dawn re-entry / dusk emergence surveys at each building are required. The surveys must be completed in the bat active season, i.e. between May and September. Dusk emergence surveys must commence at least 15 minutes before

sunset and last until between 1.5 and 2 hours after sunset. Dawn re-entry surveys must commence between 1.5 and 2 hours before sunrise and last until 5 minutes after sunrise.

- 4.3.3 If the presence of roosting bats is confirmed a licence from Natural England must be obtained and an appropriate mitigation strategy must be implemented prior to the demolition of these buildings.

Commuting and Foraging Bats

- 4.3.4 The site is considered to be of low suitability for commuting and foraging bats in accordance with the criteria listed in Table 4.1 of *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn) (Collins, (ed.), 2016). Recommendations to minimise the impact of the proposals on commuting and foraging bats (retention of green corridors, use of appropriate landscape planting and a sensitive lighting scheme) are presented at **Section 5.0**.

Birds

- 4.3.5 Habitats within the site are suitable for use by foraging and nesting passerine bird species. All birds are protected while they are nesting under the *Wildlife and Countryside Act 1981* (as amended). Provided that the trees on site are retained and the recommendations presented at **Section 5.0** are adhered to, suitable foraging and nesting habitat within the site will remain available for birds. Therefore, the proposals will not adversely affect the local bird population.

Great Crested Newt

- 4.3.6 It is acknowledged that there is one very small ornamental pond on site and an ephemeral waterbody on land adjacent to the site. However, the presence of great crested newt and adverse effects on individual newts as a result of the proposals are reasonably discounted as both ponds are assessed to be of poor suitability to support breeding great crested newt. In addition, suitable amphibian terrestrial habitat is restricted to the boundary shrubs which will be undisturbed during the proposed works. As such, it is recommended that non-licensed avoidance measures can be applied to ensure no offence would be committed as detailed in **Section 5.4**.

Hedgehog

- 4.3.7 Habitats within the site are suitable for foraging and sheltering hedgehog. It is considered that the end use of the site will allow the continued use of the site by this species.

5.0 Recommendations and Conclusion

5.1 Landscape Planting

- 5.1.1 It is recommended that any landscape planting incorporated within the development is composed of native species and species known to be of value for the attraction of wildlife.
- 5.1.2 It is recommended that trees which support blossom and fruit which will attract insects are incorporated. Suitable species are presented at **Table 5.1**, below.

Table 5.1: Recommended Species for New Tree and Shrub Planting

Scientific Name	Common Name	Scientific Name	Common Name
<i>Acer campestre</i>	Field Maple	<i>Prunus avium</i>	Wild Cherry
<i>Alnus glutinosa</i>	Alder	<i>Prunus padus</i>	Bird Cherry
<i>Betula pendula</i>	Silver Birch	<i>Prunus spinosa</i>	Blackthorn
<i>Carpinus betulus</i>	Hornbeam	<i>Rosa arvensis</i>	Field-rose
<i>Corylus avellana</i>	Hazel	<i>Rosa canina</i>	Dog-rose
<i>Crataegus monogyna</i>	Hawthorn	<i>Sambucus nigra</i>	Elder
<i>Fagus sylvatica</i>	Beech	<i>Sorbus aucuparia</i>	Rowan
<i>Ilex aquifolium</i>	Holly	<i>Tilia cordata</i>	Small-leaved Lime
<i>Malus sylvestris</i>	Crab Apple	<i>Viburnum opulus</i>	Gelder-rose
<i>Pinus sylvestris</i>	Scots Pine	<i>Quercus robur</i>	Pedunculate Oak

- 5.1.3 The understorey and ground cover planting design should be prepared to optimise the attraction of invertebrates such as feeding bumblebees and butterflies. Where possible the use of native species should be maximised but where necessary non-native species known to be attractive to invertebrates should be used.
- 5.1.4 Planting schemes that include flowering species such as *Calluna*, *Ceanothus*, *Hebe*, *Lavendula*, *Lonicera*, *Potentilla*, *Rosemarinus*, and *Vinca* can maximise opportunities for feeding invertebrates and for the attraction of foraging bats and birds.

5.2 Bats

Protection

- 5.2.1 Notwithstanding the need for further surveys (refer to **Section 4.3**) to confirm the presence or absence of roosting bats and appropriate mitigation if required, the following measures should also be applied.
- 5.2.2 When installing lighting reference should be made to the following guidance:

- *Artificial lighting and wildlife. Interim guidance: Recommendations to help minimise the impact of artificial lighting* (Bat Conservation Trust, 2014); and
- *Bats and lighting: overview of current evidence and mitigation guidance* (Stone, 2014).

Enhancement

- 5.2.3 It is recommended that the development incorporates the installation of bat access panels or boxes at the new building(s) or retained mature trees (such as Schwegler 1FQ and 1FF). An ecologist can advise on the siting of the bat boxes while on site.

5.3 Birds

Protection

- 5.3.1 All wild birds are protected under the *Wildlife and Countryside Act 1981* (as amended) while they are breeding. It is mandatory that if any trees, shrubs or other suitable breeding bird habitat is to be removed as part of the proposals they are only removed outside the bird breeding season. The breeding season typically extends between March to August inclusive.
- 5.3.2 If habitats are scheduled for removal during the breeding season it is recommended that advice is sought from an ecologist. It may be necessary to conduct a walkover survey to demonstrate that no nesting birds, active nests, eggs or fledgling are present in the area to be cleared. If nesting birds are present an ecologist will issue guidance in relation to the protection of the birds.

Enhancement

- 5.3.3 It is recommended that house sparrow nest boxes or general bird box (such as Schwegler 1MR Avianex) are installed at the proposed new building(s). The boxes should not be positioned over windows or doorways where droppings may become a nuisance. RSPB advice states that boxes should ideally be sited facing north to east, to avoid exposure to direct sunlight, which may cause overheating of chicks in the nest.

5.4 Amphibians

- 5.4.1 As described in **Section 4.3**, the risk of great crested newts at the site is negligible. However, in accordance with best practice the following Reasonable Avoidance Measures (RAMs) should be observed during the construction period:

- All site personnel must be made aware of these RAMs and the possible (but very unlikely) presence of great crested newt and other wildlife such as common toad at the site.
- A copy of this report must be held on site and be available for consultation as required.
- All site personnel must be trained in the identification of great crested newt and made aware of the protection which is afforded to them.
- During construction, bricks etc. must be stored on hard-standing or stored on pallets to avoid the creation of suitable habitat for amphibians.
- During construction, any holes, trenches or other pits which amphibians could fall into must be covered overnight or have sloped banks or ramps suitable for their escape.
- The use of chemicals (such as fertilisers and herbicides) harmful to great crested newt and other amphibians should be avoided wherever possible.
- If a great crested newt is found while any site clearance or building operations are in progress, then all works in the area must cease and We Know Services. (0151 443 2308) or Natural England (0300 060 3900) must be contacted immediately for further guidance.
- No site contractors must handle a great crested newt; and if any other amphibian species (such as smooth newt, common toad or common frog) is detected on site, it must be carefully picked up, placed in a clean bucket and moved to an area of suitable habitat beyond the construction working area.

5.5 Conclusion

- 5.5.1 Notwithstanding the need for further surveys to confirm the presence or absence of roosting bats, this ecological appraisal has demonstrated that development of the site is feasible and acceptable in accordance with ecological considerations and the National Planning Policy Framework.
- 5.5.2 It is possible to implement reasonable actions for the protection and long-term conservation of fauna and secure ecological enhancement for fauna typically associated with residential properties.

6.0 References

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7.0 Appendix 1: Photographs and Figure

Table 7.1: Photographs



Photograph 7.1: Pond 1



Photograph 7.2: Existing Dwelling (North-east elevation)



Photograph 7.3: Existing Dwelling (North elevation)



Photograph 7.4: Oil Tank



Photograph 7.5: Existing Dwelling (North-west elevation)



Photograph 7.6: Existing Dwelling (south-west elevation)



Photograph 7.7: Existing Dwelling (South-east elevation)



Photograph 7.8: Existing Dwelling Loft



Photograph 7.9: Garage (North-east elevation)



Photograph 7.10: Garage (South-east elevation)



Key:

-  BROADLEAVED TREE
-  CONIFEROUS TREE
-  HEDGE
-  AMENITY GRASSLAND
-  INTRODUCED SHRUBS
-  BUILDING
-  HARD STANDING
-  SITE BOUNDARY



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Tel: 0151 443 2308
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Site Address:
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North End Road,
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L26 5QB

Drawing Title: Figure 7.1 Drawing No: 20/00003/7.1

Date: 26.04.21 Scale: 1:250@A3 Drawn by: NW

Note: Dimensions are not to be scaled from this drawing.
All written measurements are to be checked on site by
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