
Okell Drive, Halewood

Preliminary Ecological Appraisal

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1.0 Introduction

1.1 Background

- 1.1.1 This Preliminary Ecological Appraisal (PEA) has been prepared by Building Design Partnership Ltd on behalf of Rockbourne Day Nursery Ltd to accompany a planning application for the erection of a children's nursery and associated landscaping on land to the west of the Okell Drive and Church Street roundabout junction in Halewood, Liverpool, L26 7YH (hereinafter referred to as the "site").



Figure 1. Site location

- 1.1.2 The survey area is dominated by mesotrophic MG7 grassland with several mature scattered trees. The site is bound by Okell Drive to the south, Church Road to the north and residential development to the west. The wider landscape is predominantly characterised by residential development and agricultural land, with amenity greenspace and woodland pockets also present.

1.2 Planning

- 1.2.1 Biodiversity is a material consideration to the planning process and consideration must be given to the protection, retention and improvement of existing ecological features. The proposed redevelopment of the site could impact protected or notable, sites, habitats or species and particular consideration should be given to those ecological features which have been identified within the local landscape and those supported by habitats present within and surrounding the site.
- 1.2.2 This report will allow the Local Planning Authority (LPA) to assess the impact of the proposed development on any ecological features identified as part of the planning application.

1.3 Survey Aims

1.3.1 The survey was commissioned to establish the existing ecological value of the site. The aims of the survey were to:

- Describe and map the habitats present on the site
- Assess any potential impact on protected species or sites
- Identify where further surveys may be required
- Provide recommendations for the protection and enhancement of site ecology

2.0 Methodology

2.1 Desktop Study

- 2.1.1 A review of ecological information held by the local record centre, Merseyside BioBank, alongside other publicly accessible online sources was carried out to identify any protected and notable sites, habitats and/or species within a 2km radius of the application site.
- 2.1.2 In addition to the consultation process, a review of relevant national and local planning policies and frameworks was carried out, and their relevance to the site and proposal was highlighted where relevant. This included:

National Policy

- National Planning Policy Framework, December 2023
- The Conservation of Habitats and Species Regulations, 2017
- Habitats and Species of Principal Importance, August 2010

Local Policy

- Knowsley Local Plan Core Strategy, January 2016
- North Merseyside Biodiversity Action Plan, September 2001, reviewed 2008

2.2 Site Survey

- 2.2.1 An ecological site walkover was undertaken on the 20 September 2024. Weather conditions during the survey were dry with temperatures reaching 20°C.
- 2.2.2 The survey involved identifying the habitat types present within the site and defining their boundaries. Each distinct habitat was assigned to a UK Habitat Classification code as set out in UKHAB v2. Using the information collated on the survey, a map was produced on QGIS defining the habitat types and their boundaries. This map has been provided within Appendix I of this report.
- 2.2.3 Botanical species list for each of the habitats were produced during the survey, with reference to the DAFOR scale (D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare). Botanical nomenclature follows Streeter (2016).
- 2.2.4 Habitats defined broadly as grassland were subject to quadrat sampling to inform on average species richness. Sampling involved randomly laying a specified number of 1m x 1m quadrats across the grassland and recording all species contained within the samples with a measure of relative abundance according to the Domin scoring system (refer to Table 1). The locations of placed quadrats were documented with the use of What3words.

Table 1: Domin scale

Cover	Domin
91-100%	10
76-90%	9
51-75%	8
34-50%	7
26-33%	6
11-25%	5
4-10%	4
<4% (many individuals)	3
<4% (several individuals)	2
<4% (few individuals)	1

2.2.5 The survey was led by Anthony Nickson and assisted by Olivia Leversedge. Anthony is a FISC Level 4 botanist and holds a Level 2 Class Licence (CL18) for bats, he is also a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). Olivia is a FISC Level 3 botanist and a qualifying member of CIEEM.

2.2.6 Based on the desktop study and habitat types present within and adjacent to the site, particular attention was paid to the following species:

Bats

2.2.7 All British bat species and their roosts are protected under European Law (The Conservation of Habitats and Species Regulations 2017) and UK Law (Wildlife and Countryside Act 1981, as amended). As such, it is an offence to undertake the following acts:

- Deliberately capture, injure or kill bats;
- Damage or destroy a breeding or resting place;
- Obstruct access to their resting or sheltering places; and
- Intentionally or recklessly disturb a bat while it's in a structure or place of shelter or protection.

2.2.8 Bats use both buildings and trees to roost, favouring areas which tend to be dark, sheltered and undisturbed. Since trees occur within the site, attention was paid to the potential to impact bats and/or roosting sites.

Habitat Suitability

2.2.9 Initially, a review of publicly accessible online mapping systems was undertaken to assess the habitats present on site and in the surrounding area. The review assessed the suitability of the habitats to support and provide connectivity for commuting and foraging bats in accordance with best practice guidance (refer to Table 2).

Table 2: Guidelines for assessing the potential suitability of proposed development sites for bats based on the presence of habitat features within a landscape (BCT, 2023).

Suitability	Commuting and foraging habitats
None	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Preliminary Roost Assessment

- 2.2.10 During the site visit, a Ground Level Tree Assessment (GLTA) was conducted in accordance with Bat Conservation Trust Good Practice Guidelines (BCT, 2023). The scope of assessment encompassed the trees within and adjacent to the site which would be impacted or otherwise disturbed by the development proposal or associated works.
- 2.2.11 The GLTA involved the inspection of each tree to search for, and to assess the potential for, a bat roost(s) to be present. The inspection involved a visual examination of each tree from ground level, supported with the use of close-focusing binoculars, to identify any potential roosting features (PRFs) (refer to Table 3) on the trunk or within the canopy. A high-powered torch was used to inspect cavities or shaded areas of the trees. Applicable features and/or field signs that may indicate the use of the trees by bats was recorded.

Table 3: PRF types that can be exploited by bats and how they form (adapted from *Bat Roosts in Trees*, BHTK, 2018).

PRFs formed by disease and decay	PRFs formed by damage	PRFs formed by association
▪ Woodpecker holes ▪ Squirrel holes ▪ Knot holes ▪ Pruning cuts ▪ Tear outs ▪ Wounds ▪ Cankers ▪ Compression forks ▪ Butt rots	▪ Lightning strikes ▪ Hazard beams ▪ Subsidence cracks ▪ Shearing cracks ▪ Transverse snaps ▪ Welds ▪ Lifting bark ▪ Desiccation fissures ▪ Frost cracks	▪ Fluting ▪ Ivy

- 2.2.12 The trees were then assessed in accordance with the guidelines for assessing the potential suitability of proposed development sites for bats (ref. Table 4).

Table 4: Guidelines for assessing the potential suitability of proposed development sites based on the presence of suitable roosting features within a structure (BCT, 2023).

Suitability	Roosting habitats in structures
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).
Negligible ^a	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^b and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats ^c).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ^b and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure 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 ^b and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.

a Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute).

b For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

c Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2016 and Jansen et al., 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.

Great Crested Newt

- 2.2.13 Great Crested Newts (GCN) (*Triturus cristatus*) are protected under European Law (The Conservation of Habitats and Species Regulations 2017) and UK Law (Wildlife and Countryside Act 1981, as amended). As such, it is an offence to deliberately or recklessly undertake the following acts:

- Capturing, killing, disturbing or injuring GCN deliberately
- Damaging or destroying a breeding or resting place
- Obstructing access to their resting or sheltering places (deliberately or by not taking enough care)

Badger

- 2.2.14 Badger (*Meles meles*), and their setts are protected under UK Law (Protection of Badgers Act 1992, as amended). As such it is an offence to either harm badgers or disturb or damage their setts.

Birds

- 2.2.15 All birds, their nests and eggs are protected at the nest under UK Law (Wildlife and Countryside Act 1981, as amended). As such, it is an offence to intentionally undertake the following acts:

- Kill, injure or take any wild bird
- Take, damage or destroy the nest of any wild bird whilst it is in use or being built
- Take or destroy the egg of any wild bird
- Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

- 2.2.16 During the survey, the site was surveyed for suitable nesting bird habitat. Further, any evidence of nesting was recorded.

Hedgehog

- 2.2.17 Hedgehog (*Erinaceus europaeus*) are protected under UK Law (Wildlife and Countryside Act 1981, as amended) from certain methods of killing and/or taking.

2.3 Limitations

- 2.3.1 The grassland within the site comprises a short, maintained sward. Intensive grassland management may have the capacity to reduce species visibility, particularly for vegetative grass forms. However, this limitation was not considered to represent a significant constraint with respect to habitat characterisation and it was deemed that an accurate assessment of the grassland could be made.

- 2.3.2 The GLTA was carried out during a period in which tree foliage, in some cases, reduced the visibility of the canopy and obscured the view of potential PRFs. Surveyors took extra time and care during the inspection of the trees to avoid undervaluation of the potential for roosting bats, and where appropriate, a higher suitability assessment was assigned on a precautionary basis.

3.0 Results

3.1 Desktop Study

3.1.1 The local record centre, Merseyside Biobank, provided the following information for within the site and within a 2km radius thereof:

- Statutory and Non-Statutory Sites
- Protected and other Notable Species

3.1.2 The full list of protected and notable sites and species (ref. Appendix II) was analysed in the context of the redevelopment proposal and its potential impacts on the local ecology, and relevant information discussed below.

Designated Sites

Internationally, Nationally and Locally Protected Sites

3.1.3 The desktop study search shows that there are no European, National or Local sites with statutory designation within the site or within a 2km radius thereof.

Local Wildlife Sites

3.1.4 Local Wildlife Sites (LWS) are areas recognised for their substantive value in terms of biodiversity and conservation in the local area. LWSs are not legally protected, though are afforded special recognition and consideration in the planning context. The local record centre confirmed the presence of nine Knowsley LWSs and two Liverpool LWSs within a 2km radius of the application site, as follows:

Knowsley Local Wildlife Sites

- Cartbridge Lane Wood, approximately 450m northeast of the site boundary at its closest point
- Halewood Triangle, approximately 600m southwest of the site boundary at its closest point
- Ditton Brook, approximately 850m east of the site boundary at its closest point
- Green's Bridge Plantation, approximately 1km east of the site boundary at its closest point
- Tributary of Netherley Brook, Located approximately 1.1km north of the site boundary at its closest point
- Netherley Brook, approximately 1.2km northeast of the site boundary at its closest point
- Mill Brook, Netherley, approximately 1.8km northeast of the site boundary at its closest point
- Brickwall Covert, approximately 1.9km northeast of the site boundary at its closest point
- Dog Clog Brook, Tarbock, approximately 2km northeast of the site boundary at its closest point

Liverpool Local Wildlife Sites

- Netherley Woods and Brook, approximately 1.1km northeast of the site boundary at its closest point
- Lee Park Golf Course, approximately 1.2km northwest of the site boundary at its closest point

Protected Species

3.1.5 There were no protected species records occurring within the site. The following results are of temporally relevant protected species records returned from the wider 2km search area.

Bats

3.1.6 Details of bat records provided by Mersey BioBank are provided in Table 5.

Table 5. Summary of bat records provided by Merseyside Biobank

Species	Roost Records	General Records	Closest Record	Date of closest record
Bat species (<i>Chiroptera</i> sp.)	2	6	The location of the roost record was not determinable due to poor precision of the record's spatial reference.	1986
			The closest determinable general record is located approximately 1.4km west of the site.	08/2012
Mouse-eared bat species (<i>Myotis</i> spp.)	0	1	The general record is located approximately 1.8km northeast of the site.	07/2007
Brown long-eared bat (<i>Plecotus auritus</i>)	1	4	The roost record indicates the probable occurrence of roosting bats. The record is located >2km from the site.	06/2018
			The closest determinable general record is located approximately 750m west of the site.	07/2003
Daubenton's bat (<i>Myotis daubentonii</i>)	0	3	The closest general record is located approximately 770m southwest of the site.	07/2003
Pipistrelle bat species (<i>Pipistrellus</i> spp.)	1	179	The location of the roost record was not determinable due to poor precision of the record's spatial reference.	1989 - 1992
			The closest determinable general record is located approximately 620m northwest	06/2010
Common pipistrelle (<i>Pipistrellus pipistrellus</i>)	3	23	The closest roost record is located 580m northeast of the application site.	08/2007
			The closest roost record is located approximately 790m south of the site.	09/2023
Soprano pipistrelle (<i>Pipistrellus pygmaeus</i>)	0	4	The closest determinable general record is located approximately 850m northwest of the site.	07/2019
Noctule (<i>Nyctalus noctula</i>)	0	9	The closest determinable general record is located approximately 720m northeast of the site.	06/2018

Great Crested Newt

- 3.1.7 The local record centre provided 95 records of GCN within the 2km search area. The closest record is from 2011 and is located approximately 430m east of the site.
- 3.1.8 A review of publicly accessible online maps confirmed that there is no suitable aquatic habitat for amphibian fauna within the site or within a 500m radius thereof. The site itself provides unfavourable habitat for newts, with road networks creating sufficient barriers to dispersal and migration through or into the site. The presence of amphibians within the site, including great crested newts, and/or the potential for impacts to these species can be reasonably discounted, and no further consideration of amphibian fauna is considered necessary.

Badger

- 3.1.9 The local record centre provided 23 records of Badger within the 2km search area. The exact location of the records remains confidential.

Notable mammals

- 3.1.10 The local record centre provided 583 records of hedgehog (*Erinaceus europaeus*) within the 2km search area. The closest record is from 2020 and is located approximately 210m west of the site.
- 3.1.11 The local record centre provided 25 records of brown hare (*Lepus europaeus*). The closest determinable record is from 2018 and is located approximately 865m west of the site.
- 3.1.12 The site itself provides extremely limited habitat with little suitability for small mammals, with neighbouring roads occurring to the north, east and south. The site has poor opportunities for foraging and refuge and may only rarely support commuting small mammals. The agricultural land due north of the site provides more extensive and favourable habitat which is considered to of greater value to small mammals than those occurring within the site.

Birds

- 3.1.13 The local record centre provided over 12000 records comprising 58 species of bird within the 2km area. The returned records included a limited number of species which are known to nest in trees, such as those within the site. The on-site trees may be of value to birds such as starlings (*Sturnus vulgaris*), magpies (*Pica pica*), carrion crows (*Corvus corone*) and wood pigeons (*Columba palumbus*).

3.2 Site Survey

Habitat Description

- 3.2.1 The application site is approximately 0.32 ha and is comprised of modified grassland and urban trees. On-site habitats are illustrated in the UK Habitat Map provided in Appendix I.

g4 Modified grassland

Secondary codes: 108

Condition: Poor

Corresponding Biodiversity Metric category: Grassland – Modified grassland

Photo plates: 1 - 4

- 3.2.2 Modified grassland dominates the application site. The grassland exists as a feature of the original landscaping design of the surrounding residential estates and represents a lush, maintained lawn which is kept at a short sward height through routine grounds management activities.
- 3.2.3 The grassland throughout the site is characteristic of permanent amenity sward, a commonplace habitat in urban settings. Species diversity is poor, with perennial ryegrass (*Lolium perenne*) forming the dominant species cover, and herbaceous plants occurring as rare components of the vegetative assemblage. In NVC terms, the plant community within this habitat most closely resembles an MG7 *Lolium perenne-Plantago lanceolata* grassland.
- 3.2.4 A full list of the species documented within the grassland including measures of relative abundance (DAFOR) are provided within Table 6.

Table 6: Species list produced from a survey of on-site modified grassland with respective DAFOR scales.

Common name	Scientific name	DAFOR
Perennial ryegrass	<i>Lolium perenne</i>	D
Red fescue	<i>Festuca rubra</i> agg.	F
Yarrow	<i>Achillea millefolium</i>	R
Daisy	<i>Bellis perennis</i>	R
Bittercress	<i>Cardamine</i> sp.	R
Common mouse-ear	<i>Cerastium fontanum</i>	R
Cock's foot	<i>Dactylis glomerata</i>	R
Great willowherb	<i>Epilobium hirsutum</i>	R
Herb Robert	<i>Geranium robertanum</i>	R
Yorkshire fog	<i>Holcus lanatus</i>	R
Cat's ear	<i>Hypochaeris radicata</i>	R
Ribwort plantain	<i>Plantago lanceolata</i>	R
Great plantain	<i>Plantago major</i>	R
Annual meadow grass	<i>Poa annua</i>	R
Creeping cinquefoil	<i>Potentilla repens</i>	R
Creeping buttercup	<i>Ranunculus repens</i>	R
Groundsel	<i>Senecio vulgaris</i>	R
Dandelion	<i>Taraxacum officinale</i> agg.	R
White clover	<i>Trifolium repens</i>	R
Common nettle	<i>Urtica dioica</i>	R
Germander speedwell	<i>Veronica chamaedrys</i>	R

- 3.2.5 Quadrat sampling was employed to inform on species richness for the purposes of Biodiversity Net Gain assessment. A total of five quadrat samples were collected randomly across the grassland. The samples attained an average species richness of 5.2 species per metre square. The results of the quadrat sampling are provided within Table 7.

Table 7. Grassland quadrat sampling results

Species	Q1 what.3.words ///empty.cactus .ulterior	Q2 what.3.words ///masterpiece. prepped.bridge	Q3 what.3.words ///kinder.generally. farms	Q4 what.3.words ///arose.bowhead .sits	Q5 what.3.words ///blush.quits .triad
Bittercress species (<i>Cardamine</i> sp.)	2	2	-	-	2
Daisy (<i>Bellis perennis</i>)	1	-	2	-	-
Perennial ryegrass (<i>Lolium perenne</i>)	9	9	9	9	9
Common mouse-ear (<i>Cirsium fontanum</i>)	1	-	-	-	-
Red fescue (<i>Festuca rubra</i> agg.)	5	5	6	4	4
Creeping buttercup (<i>Ranunculus repens</i>)	-	2	3	-	3
Dandelion (<i>Taraxacum officinale</i>)	-	4	2	3	2
White clover (<i>Trifolium repens</i>)	-	-	1	5	3
Species richness	5	5	6	4	6
Average species richness	5.2				

u1 Scattered trees (urban)**Secondary codes:** 200**Condition:** Moderate**Corresponding Biodiversity Metric category:** Individual trees – Urban trees

- 3.2.6 A total of seven trees were identified within the application site. Information relating to the trees is summarised in Table 8, and locations of the trees are indicated within the UK Habitat map provided in Appendix I.

Table 8. Summarised on-site tree information

Tree ref. no.	Species	Diameter at Breast Height (DBH)	Photo plate
T1	London Plane (<i>Platanus x hispanica</i>)	48 cm	5
T2	Maple species (<i>Acer</i> sp.)	29.3 cm	5
T3	Whitebeam (<i>Sorbus aria</i>)	44.5 cm	5
T4	Cherry (<i>Prunus</i> sp.)	25.1 cm	5
T5	Poplar (<i>Populus</i> sp.)	70 cm	6
T6	Horse chestnut (<i>Aesculus</i> cf. <i>hippocastanum</i>)	70 cm	7
T7	Ornamental horse chestnut (<i>Aesculus</i> sp.)	23 cm	9

- 3.2.7 In addition to the trees above, the remains of a wind-felled poplar was identified next to T5. Regrowth from the stump and roots have produced around 15 suckers (approximately 1cm DBH) which cover an approximate area of 10m x 5m (ref. plates 10-13).
- 3.2.8 The Knowsley Council planning and Tree Preservation Orders (TPO) portal indicates that two groups of trees within the application site are protected under a TPO. The TPO map (viewed on 02 October 2024) was superimposed onto the UK Habitat map produced following the site survey. This showed that the protection orders appear to concern trees T1 through to T6 (ref. Figure 2). The proposal indicates that these trees will be retained within the development.



Figure 2. Knowsley Council planning and TPO portal map superimposed onto the site habitat map.

Protected Species

Bats

Habitat suitability

- 3.2.9 The site is located on the edge of a residential estate, to the south of a large expanse of agricultural land and amenity greenspace. Features within the landscape, including grassland, tree belts and habitats associated with established gardens, provide suitable foraging habitat for the local bat populations.
- 3.2.10 The site itself supports a small number of scattered trees which are isolated through artificial light and disturbance from traffic and only likely to support small numbers of foraging bats for short periods of time. The some offers limited foraging opportunities at a site-level value and there are extensive and/or higher quality habitat within the surrounding landscape.
- 3.2.11 Based on features within the site, it's suitability as foraging and or commuting habitat is assessed as low, only being likely to support small numbers of urban tolerant bat species such as pipistrelles.

Preliminary Roost (Ground Level Tree) Assessment

- 3.2.12 There are a total of nine arboricultural items within and adjacent to the site which were subject to a GLTA. The results are summarised in Table 9.

Table 9. GLTA summary.

Tree ref. no.	Observations	Suitability
T1	No PRFs observed. View of canopy obscured by foliage.	Negligible
T2	No PRFs observed. View of canopy obscured by foliage.	Negligible
T3	No PRFs observed. View of canopy obscured by foliage.	Negligible
T4	No PRFs observed.	None
T5	Ivy coverage on main stem and sucker growth at base of trunk. No PRFs observed in the lower canopy. The specimen is a large, mature tree which may have features not observable from ground level.	Low
T6	No PRFs observed in the lower canopy. The specimen is a large, mature tree which may have features not observable from ground level.	Low
T7	No PRFs observed.	None
T8	Consistent with T6.	Low
T9	Consistent with T6.	Low

Badger

- 3.2.13 Agricultural land to the north of the site may provide commuting and foraging opportunities for badgers. However, the site itself provides extremely limited and poor-quality habitat, which is bound by road networks to the north, east and south, and is therefore highly unlikely to be exploited by badgers.
- 3.2.14 No foraging or sett excavation opportunities were evident during the site survey. Further, no evidence of badger activity was identified within or adjacent to the site. Badgers do not pose a constraint in relation to the proposed development and no further consideration of this species is considered to be necessary.

Hedgehog

- 3.2.15 During the site survey, a hedgehog scat was identified within the middle of the grassland (w3w: terribly.picked.static) (ref. plate 14). Hedgehogs are likely to exploit habitats associated with the neighbouring residential estate and open farmland for foraging and refuge, and may therefore permeate through the site, but are unlikely to persist within the site itself.

Birds

- 3.2.16 Scattered trees within the site provide opportunities for nesting birds during the breeding season (March to September). During the site survey, a woodpigeon nest was identified in T3.
- 3.2.17 Given the relative levels of disturbance surrounding the site and the presence of more favourable nesting habitat in the immediate to wider landscape, existing trees are only considered to be valuable for nesting birds at a site level.

4.0 Evaluation

4.1 Desktop Study

Designated Sites

Internationally and Nationally Protected Sites

- 4.1.1 There are no European, National or Local sites with statutory designation within the site or within a 2km radius thereof.

Local Wildlife Sites

- 4.1.2 A total of eleven Local Wildlife Sites were identified within the 2km search area. The closest is Cartbridge Lane Wood, which is located approximately 450m northeast of the site boundary at its closest point.
- 4.1.3 The impact of the proposal occurs at a site-level only and will have a negligible impact on the habitat linkage and migration of foraging / commuting habitat between the site and the LWSs. The proposal is anticipated to have a negligible impact on qualifying features of the LWSs identified within the desktop study.

4.2 Site Survey

Habitats

- 4.2.1 Habitats present within the site are urban in nature and common locally and throughout the UK. No priority habitats or rare plant species (BSBI, viewed online 2024) were documented during the survey.
- 4.2.2 The grassland community represented within the site is considered to be of relatively low value in terms of biodiversity and nature conservation, although does contribute towards the Urban Green Infrastructure network outlined within the Merseyside Biodiversity Action Plan.

Bats

- 4.2.3 There are features within the local landscape which offer suitable foraging and commuting habitat for local bat populations. The site itself offers low suitability habitat which may only be intermittently exploited by very small numbers of common, urban tolerant species such as pipistrelles. The development of the site will therefore have a negligible impact on the availability and/or quality of foraging and commuting habitat for local bat populations.
- 4.2.4 A total of nine arboricultural features within the site were assessed for their potential to support roosting bats. Four trees were assessed as having low potential (T5-T8), three as having negligible potential (T1-T3) and two as having no potential (T4 & T9).

Birds

- 4.2.5 The scattered trees within and adjacent to the site provide suitable habitat for breeding birds. However, given the availability of similar and better habitats within the wider landscape it is considered that these habitats are only valuable for breeding birds at a site level.

5.0 Recommendations

Bats

- 5.1.1 Seven trees could not be discounted from having potential roosting features for bats. The absence of roosting bats can be very difficult to definitively prove, since due to their size and mobility, single or small numbers of bats may go undetected if they are roosting in extremely small or discrete places which were not visible from ground level.
- 5.1.2 The current proposal indicates that all trees within the site will be retained in the development. Protective fences should be erected during the construction phase to minimise disturbance during construction and the external lighting strategy should be designed to ensure that light spill does not further impact on the trees.

Birds

- 5.1.3 All bird species are protected at their nest under the Wildlife and Countryside Act 1981. Due the presence of trees within the site boundary, which offer suitable nesting habitat for breeding birds, it is recommended that site works takes place outside the peak bird nesting season (March to September). If site works needs to take place during the peak season, then nesting bird surveys will need to be undertaken by a suitable competent ecologist to ensure that the proposed works are not impacting negatively on nesting birds.

Hedgehogs

- 5.1.4 The site provides very limited foraging and commuting habitat for hedgehog, with more favourable habitat for this species available within the wider landscape. The site facilitates no connectivity between these areas. The redevelopment of the site is not anticipated to have any negative impacts on hedgehogs. Notwithstanding this, the site should be made permeable for hedgehog by ensuring there are no barriers to dispersal across the site.

Site Enabling Precautionary Measures

- 5.1.5 A Construction Environmental Management Plan (CEMP) should be produced prior to the commencement of works onsite which will demonstrate how the construction stage of the project will minimise impacts to the potential ecological receptors within and adjacent to the site, namely birds and bats.
- 5.1.6 The CEMP should, in particular, include pollution prevention measures which will ensure construction impacts to the site and surrounding areas are avoided or minimised, including impacts such as surface-water run-off, land contamination and management of invasive species.

Habitat Improvement

- 5.1.7 In line with the National Planning Policy Framework the planning system should contribute to and enhance the natural and local environment by providing net gains in biodiversity where possible. In order to comply with National Planning Policy Framework, the design team should consider incorporating the following ecological enhancements into the scheme:
- New habitats should be created or existing habitats enhanced to benefit biodiversity;
 - Maximising native tree and other vegetation planting will provide recognizable fruit and nectar sources for local birds and invertebrates and will enhance the biodiversity of the development;
 - The increased structural integrity of modern developments reduces the potential for birds and bats to utilise modern buildings for nesting and roosting therefore the a variety of bird and/or bat boxes should be integrated into the new development or into suitable trees within the wider site.

Biodiversity Net Gain

- 5.1.8 Biodiversity Net Gain (BNG) is a means of creating and otherwise improving the state of biodiversity through instating quantifiable gains and ensuring that adequate ecological compensation for habitat loss is achieved.
- 5.1.9 In line with the Environment Act 2021, the development should aim to protect and enhance the overall biodiversity value of the site by contributing to the achievement of a 10% net gain at minimum. This gain must be delivered with use of the Biodiversity Statutory Metric Calculation Tool and accompanied with a Biodiversity Gain Plan which will show how the development will achieve Biodiversity Net Gain. Any proposed ecological enhancements should be captured in a Habitat Management and Monitoring Plan which will ensure that the condition of created habitats is maintained for at least 30 years.

External Lighting

- 5.1.10 The impact of light to biodiversity within the site, and in particular bats and flying invertebrates should be mitigated through the implementation of a sensitive lighting strategy.
- 5.1.11 As numerous flying insects are attracted to ultraviolet light the external lighting should use LED lighting sources which are UV filtered to limit the amount of UV light produced, this will minimise the attraction to insect from adjacent habitats and feeding areas and minimise unnatural behaviour stimulated by the lighting.

6.0 References

Advice Note on the Lifespan of Ecological Reports & Surveys, CIEEM, April 2019

Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th Edition, Bat Conservation Trust, 2023

Guidelines for Preliminary Ecological Appraisal, 2nd Edition, CIEEM, December 2017

Habitats and Species of Principal Importance, JNCC, August 2010

Knowsley Local Plan Core Strategy, January 2016

National Planning Policy Framework, Ministry of Housing, Communities & Local Government, December 2023

North Merseyside Biodiversity Action Plan, September 2001, reviewed 2008

The Conservation of Habitats and Species Regulations, 2017

The Conservation of Habitats and Species Regulations, 2017

Wildlife & Countryside Act, 1981

Appendix I - UK Habitat Map



Legend	
Habitats	
	g4 Modified grassland Area: 0.2992 ha Condition: Poor
	u1 Urban tree (sucker regrowth from roots of a wind-felled poplar tree) Area: 0.0051 ha Condition: Poor
Trees baseline	
	Small Area: 0.0122 ha Condition: Moderate
	Medium Area: 0.0326 ha Condition: Moderate
	Large Area: 0.0733 ha Condition: Moderate
	Trees adjacent to application boundary - subject to a PRA
	Application boundary Area: 0.3044 ha
Project: Children's Nursery at Okell Drive, Halewood	
Drawing Title: UK Habitat A-1 On-Site Habitat Baseline	
Date: 07/11/2024	Revision: 02

Appendix II - Data Search



Biodiversity Information Report 16/09/2024

**MBB reference: 4170-BDP
Site: Okell Drive, Halewood**

Full data search available on request

Appendix III - Photograph Plates

Plate 1: Modified grassland habitat looking northwest



Plate 2: Modified grassland habitat looking west

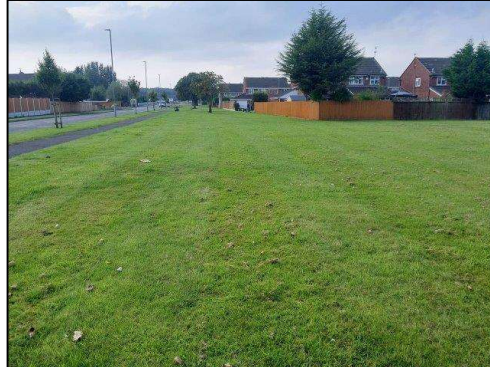


Plate 3: Modified grassland habitat looking north



Plate 4: Modified grassland habitat looking south



Plate 5: Trees T1 – T4



Plate 6: Tree T5



Plate 7: Tree T6



Plate 8: Trees T7 & T8



Plate 9: Tree T9



Plate 10: Exposed roots of a wind-felled poplar tree



Plate 11: Sucker growth from the wind-felled tree roots



Plate 12: Sucker regrowth from the wind-felled tree roots



Plate 13: Sucker regrowth from the wind-felled tree roots



Plate 14: Hedgehog scat identified within site

