

DYE HOUSE, PRESCOT

Preliminary Ecological Appraisal Report

August 2022



Report Control Sheet

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EXECUTIVE SUMMARY

Site Address	Dye House, Liverpool Rd, Prescot L34 3LX
Grid Reference	SJ 45796 92763
Approximate Site Area	1ha
Current Site Use	The site is currently vacant, comprising a residential dwelling and associated outbuilding. The grassland field was formally a horse paddock.
Designated Sites within Zone of Influence	Three Local Nature Reserves were located within 5km of the site boundary, including Mill Brow, Croxteth and Thatto Heath Meadows. No other designated sites were located within 5km of the site.
Notable Habitat Features	Notable habitats present included running water and broadleaved woodland.
Notable Species Applicable to the Assessment	• Bats (Potential roosting, foraging and commuting) • Breeding birds. • Common amphibians • Badger • Hedgehog • Invertebrates • Flora
Mitigation Recommendations	• Nesting bird check if vegetation and building demolition to be completed within the nesting bird season (March – August inclusive) • Retention, protection and enhancement of running water habitat. • Maintain 8m buffer from the western running water. • Produce CEMP to detail measures of pollution prevention and mitigation measures on sensitive receptors within the site and surrounding habitats of importance. • General mitigation measures during the construction phase for; amphibians, badger, hedgehog, birds and bats.
Recommended Further Surveys and Assessment	The following further surveys were being completed at the time of writing: • Emergence/re-entry Bat Surveys • Bat Activity Surveys
Recommended Ecological Enhancements	The National Planning Policy Framework (2021) highlights the requirement for planning policies and decisions to conserve and enhance the natural environment. The proposed development provides the opportunity to enhance the site and ecological enhancements have been recommended

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1 INTRODUCTION

1.1. SCOPE & PURPOSE

1.1.1. Collington Winter Environmental Ltd was commissioned by SEP Construction Ltd to undertake a Preliminary Ecological Appraisal (PEA) at Dye House, Liverpool Road, Prescot. This report has been prepared to inform a planning application at the site relating to a residential development.

1.1.2. The author of this report is Katie Bird MEnvSci, ACIEEM Principal Ecologist at Collington Winter Environmental Ltd. Katie is highly experienced managing schemes and has produced many ecological reports to inform planning applications.

1.2. LOCATION

1.2.1. Please refer to Figure 1.1 for the site location. The site is located within Prescot, a town and civil parish within the Metropolitan Borough of Knowsley in Merseyside, England. It is situated north of the M57 and Liverpool Road and south of the A58 road.

Figure 1.1 Site Location



1.3. OBJECTIVES

1.3.1. The objectives of the Preliminary Ecological Appraisal are as follows:

- Identify the major habitats present
- Ascertain the presence or potential presence of any legally protected or notable species or habitats
- Identify any mitigation or further survey required and opportunities for strategic wildlife enhancements and long-term management.

2 METHODOLOGY

2.1. DESK STUDY

2.1.1. An initial desk-based assessment of the site was undertaken to collate baseline data. The desk study included:

- Obtaining local records of notable species and locally designated sites within 1 km of the site from Biobank, Merseyside obtained on 09/08/2022
- Review of Magic.gov.uk website for details of any designated sites, notable habitats, and presence of European Protected Species Licences.
- Review of aerial and OS maps for habitat information, as well as determining locations of potential waterbodies to be considered in the assessment.
- Review of potential habitat links on and off site, to determine the potential zone of influence of the proposed development.
- On site consultation with the landowner which provided valuable information regarding historic land use and known species and habitats present within the site.

2.1.2. Please note, a lack of records for a species does not confirm absence. Instead, local surveys may not have been undertaken or records not submitted to BioBank.

2.2. VEGETATION AND HABITAT ASSESSMENT

2.2.1. An Ecological Appraisal of the site was undertaken by Katie Bird. The survey was undertaken on the 2nd August 2022. The weather on both dates was heavy cloud cover (8/8 oktas), with scattered precipitation, light wind speed and 19°C.

2.2.2. The walkover survey was undertaken broadly in line with standard methodology as detailed in “JNCC Handbook for Phase 1 Habitat Survey” (2010). The assessment is undertaken with consideration of methodology as per “Preliminary Ecological Appraisal” (CIEEM, 2018).

2.2.3. A Phase 1 Habitat Plan has been produced and is presented in the Appendix of this report. The mapping is based on the “JNCC Handbook for Phase 1 Habitat Survey” (2010), though adjustments have been made based on judgement to demonstrate habitats in a clearer manner, or where standard guidance does not fit the conditions found on site.

2.3. FAUNA ASSESSMENT

2.3.1. A search for signs of protected and notable species of fauna was undertaken during the site walkover. This included both field signs of species, as well as potential for species to be present based on habitat availability.

2.3.2. The searches broadly included the following:

- Assessment of waterbodies on site and within 250m of the site boundary, and terrestrial habitats for suitability to support notable amphibians.
- Searches for field signs of, and habitat suitability for bats.
- Suitability of habitats to support reptiles, and searches for incidental field signs.
- Searches for field signs of badger (*Meles meles*), including setts, mammal paths, snuffle holes, badger hair and latrines to indicate activity.
- Searches of watercourses for signs of water vole (*Arvicola amphibius*), white-clawed crayfish (*Austropotamobius pallipes*) and otter (*Lutra lutra*), and assessment of habitat availability for the species.
- Assessment of the suitability of habitats to support notable birds and recording any field sightings of birds during the walkover.
- Assessment of the sites ability to support notable invertebrates and flora.
- Searches for non-native invasive species.

2.4. PRELIMINARY ROOST ASSESSMENT

- 2.4.1. A Preliminary Roost Assessment (PRA) of the site was undertaken by Katie Bird who holds a Class 2 Bat Survey Licence from Natural England (Reference 2020-48950-CLS-CLS).
- 2.4.2. The survey was undertaken following guidance set out in Collins (2016). This includes undertaking a detailed internal and external inspection of any features to compile information on potential and actual bat entry/ exit points, roosting locations and evidence of bats.
- 2.4.3. The buildings were assessed as per categories listed in Table 4.1 Collins (2016) and reproduced in Table 2.1.

Table 2.1 Assessment Criteria for Bat Roosting Potential

Bat Roosting Potential	Description
Negligible	Negligible features on site likely to be used by roosting bats.
Low	A structure 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 conditions and/ or suitable surrounding habitats to be used on a regular basis by larger numbers of bats.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats, but unlikely to support a roost of high conservation status.
High	A structure or 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 for longer periods of time.

2.5. BAT ACTIVITY ASSESSMENT

- 2.5.1. 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 and/or mitigation.

Table 2.2 Assessment Criteria for Bat Activity Value

Suitability	Description
Negligible	No features on site suitable for use by commuting and foraging bats.
Low	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.
Moderate	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.
High	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.

2.6. SURVEY LIMITATIONS

- 2.6.1. This survey does not constitute a full botanical survey. Key species for each habitat type have been identified to give a broad representation of habitats present within the site.
- 2.6.2. It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation of the natural environment. This survey does not constitute a full botanical survey. Plant species may have been under-recorded, unidentifiable or not visible due to a number of factors including the time of year the survey was carried out.

- 2.6.3. The protected species assessment provides a preliminary view of the likelihood of protected species occurring on the site. This is based on the suitability of the habitat, known distribution of the species in the local area (provided by data searches) and any direct evidence within the survey area.
- 2.6.4. The findings of this report represent the professional opinion of qualified ecologists and do not constitute professional legal advice. The client may wish to seek professional legal interpretation of the relevant wildlife legislation cited within this document.
- 2.6.5. No internal access to B1 and B2 could be gained, to complete an internal assessment during the PRA.

3 SURVEY RESULTS

3.1. SITE CONTEXT

- 3.1.1. The site is located within an urban area of Prescott, a town and civil parish in Merseyside. The site is adjacent to the M57 to the south as well as the A58 bordering on the northern aspect of the site. It is anticipated these road infrastructures will act as a dispersal barrier for certain fauna such as terrestrial mammals.
- 3.1.2. To the south of Liverpool Road which borders the site on the southern aspect, is a large residential area. Knowsley Safari Park is located approximately 400m north from the site boundary which consists of vast areas of habitats of parkland, anticipated to be of value for a range of local fauna and flora.

3.2. DESIGNATED SITES

- 3.2.1. There were three Local Nature Reserves (LNR) found within 5km from the site boundary.
- Mill Brow LNR was located approximately 3.9km northeast from the site boundary and consists of a wet broadleaf woodland site, providing habitats for a range of flora and fauna species.
 - Croxteth LNR was located approximately 4km northwest from the site boundary and consists of the former Mull Wood plus other woodland areas such as Cocked Hat Wood, Dam Wood, the Wilderness, and Icehouse Woods together with some agricultural land in the park, providing habitats for a variety of bird species and invertebrates.
 - Thatto Heath Meadows LNR was located approximately 5km from the site boundary. The stream valley retains much of its pre-industrial landform and traces of field patterns dating back to 1843. The main habitats are stream, acid and neutral grassland, dense scrub, and hedgerows.
- 3.2.2. No other statutory or non-statutory sites were located within 5 km of the site boundary.

3.3. HABITATS

- 3.3.1. Please refer to Drawing 20-488 – 001 for the Phase 1 Habitat Map for the site. Photographs of the site are presented in the Appendix.

NEUTRAL SEMI-IMPROVED GRASSLAND

- 3.3.2. A neutral semi-improved grassland field previously used as a horse's paddock. It was dominated by cock's foot (*Dactylis glomerata*) with abundant spear thistle (*Cirsium vulgare*). Additional species include perennial rye grass (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*), common nettle (*Urtica dioica*), horsetail (*Equisetum arvense*), rosebay willowherb (*Chamaenerion angustifolium*), Himalayan balsam (*Impatiens glandulifera*), ragwort (*Jacobaea vulgaris*), sweet vernal (*Anthoxanthum odoratum*), creeping buttercup (*Ranunculus repens*), ribwort plantain (*Plantago lanceolata*) and hogweed (*Heracleum sphondylium*). To the northwest of the field, self-set tree saplings were present, comprising hazel (*Corylus avellana*), ash (*Fraxinus excelsior*) and oak (*Quercus sp.*)).

AMENITY GRASSLAND

- 1.1.1. Amenity grassland was located surrounding the residential buildings. It was maintained to a short sward height dominated by perennial rye grass, with frequent Yorkshire fog and tall oat grass (*Arrhenatherum elatius*). Other species recorded included ragwort, greater plantain (*Plantago major*), red clover (*Trifolium pratense*), dandelion, creeping buttercup, hogweed, common chickweed (*Stellaria media*), yarrow (*Achillea millefolium*), creeping thistle (*Cirsium arvense*) and ribwort plantain.

TALL RUDERAL

- 1.1.2. Tall ruderal habitats were present along the eastern boundary of the site, comprising rosebay willowherb, bindweed (*Convolvulus arvensis*), bramble (*Rubus fruticosus*), broadleaf dock (*Rumex obtusifolius*), creeping thistle, common nettle, perennial rye grass, hogweed and Yorkshire fog.

BROADLEAVED WOODLAND

- 4.3.6. Mature broadleaved woodland was located on the south easter aspect of the site. tree species included sycamore (*Acer pseudoplatanus*), hazel and downy birch (*Betula pubescens*). The understorey comprised scattered holly (*Ilex aquifolium*), ash saplings and hawthorn (*Crataegus monogyna*). The ground flora cover was present mainly across its extent, with a wood chip pile present within its centre. Species recorded included common nettle, ragwort, rosebay willowherb, common ivy (*Hedera Helix*), creeping thistle, hogweed, hedge woundwort (*Stachys sylvatica*), cleavers (*Galium aparine*), bramble, perennial sow thistle, bent grass (*Agrostis capillaris*) and wood avens (*Geum urbanum*).
- 4.3.7. Additional broadleaved bound the site on its western aspect. It comprised maple, sycamore, goat willow (*Salix caprea*) and ash. The ground flora comprised bramble and fern.

SCATTERED TREES

- 4.3.8. Scattered broadleaved trees were present within the amenity grassland area. species included weeping willow (*Salix babylonica*), ash, cotoneaster (*Cotoneaster* sp) with the addition of ornamental plants of bamboo (*Poaceae* sp) and viburnum (*viburnum* sp).

BUILDINGS

- 4.3.9. Two buildings were present within the site. Please refer to Section 3.4 for details of the buildings.

HARDSTANDING

- 4.3.10. An access road was present leading from Liverpool Road to the residential house. It was concrete with scattered vegetation of ragwort, common dandelion (*Taraxacum officinale*) and perennial sow thistle.

RUNNING WATER

- 4.3.11. A brook was present, extending from west to east of the site. It was approximately 0.5m-1m in width, with 45 degree sloping bank faces. The water was fast flowing, making it difficult to see the bed of the brook. No aquatic vegetation was present, though the bank faces were mainly overshadowed with woodland and scrub. Species included grey willow, ash, bramble, Himalayan balsam, hazel, wych elm (*Ulmus glabra*) and hawthorn.

4.4. SPECIES

FLORA

- 4.4.1. The data search returned multiple records of protected flora species within 1km from the site boundary. These included 29 records of bluebell (*Hyacinthoides non-scripta*) and meadow clary (*Salvia Pratensis*). Other species include cornflower (*Centaurea cyanus*), corn chamomile (*Anthemis arvensis*), corn marigold (*Glebionis segetum*) and corn spurrey (*Spergula arvensis*).
- 4.4.2. Nationally notable flowering plant species found within 1km from the site boundary include aggregate-headed hawkweed (*Hieracium aggregatum*), hairy bird's-foot-trefoil (*Lotus subbiflorus*), large-leaved lime (*Tilia platphyllos*), rock whitebeam (*Sorbus rupicola*), *Rubus rotundifolius*, water soldier (*Stratiotes aloides*) and welsh poppy (*Meconopsis cambrica*).
- 4.4.3. The amenity grassland was of limited floristic diversity. It is anticipated that the managed habitats are unlikely to support any notable plant species. No notable flora was observed in relation to the unmanaged habitats such as the broadleaved woodland and semi-improved grassland.

INVERTEBRATES

- 4.4.4. The data search returned 243 records of North Merseyside protected invertebrates within 1km from the site boundary comprising of twenty-one species. These species are all dragonflies with the binomial names of: (*Coenagrion puella*; *Calopteryx splendens*; *Orthetrum cancellatum*; *Ischnura elegans*; *Libellula depressa*; *Aeshna grandis*; *Enallagma cyathigerum*; *Sympetrum striolatum*; *Lestes sponsa*; *Anax imperator*; *Pyrrhosoma nymphula*; *Aeshna mixta*; *Sympetrum fonscolombii*; *Aeshna cyanea*). Many of these species are in relation to Prescott Reservoirs and Carr Lane, Prescott.
- 4.4.5. Other species of invertebrates returned in the data search include small heath (*Coenonympha pamphilus*), wall (*Lasiommata megera*), buff ermine (*Spilosoma lutea*), dark brocade (*Mniotype adusta*) and shoulder-striped wainscot (*Leucania comma*), alder leaf beetle (*Agelastica alni*), Potamophylax rotundipennis (*Potamophylax rotundipennis*).
- 3.3.3. The amenity grassland and hardstanding areas will be of limited ecological value. It is anticipated that the managed habitats are unlikely to support any notable invertebrates in significant numbers. However, the area of wetter conditions, relating to the woodland and neutral semi-improved grassland may provide suitable condition for invertebrates associated with these habitats.

AMPHIBIANS

- 4.4.6. The data search returned eight records of great crested newt (*Triturus cristatus*), most of which found in Knowsley Park. Common amphibian species such as smooth newt (*Lissotriton vulgaris*), palmate newt (*Lissotriton helveticus*), common toad (*Bufo bufo*) and common frog (*Rana temporaria*) were also recorded in relation to ponds and enclosures in Knowsley Safari Park.
- 4.4.7. There were two EPSLs found within 5km from the site boundary, based on a consultation with Magic.
- 2017-28128-EPS-MIT was located approximately 1.1km northwest from the site boundary and allowed for the damage and destruction of a resting place for GCN between 01/04/2017-31/01/2018.
 - 2017-28128-EPS-MIT-2 MIT was located approximately 1.1km northwest from the site boundary and allowed for the damage and destruction of a resting place for GCN between 24/11/2017-30/04/2019
- 4.4.8. No ponds were located onsite or within 250 m of the site boundary. As great crested newts' upper dispersal limit is generally considered to be up to 250 m from a waterbody (though occurrence of greater distances does exist), great crested newts are not anticipated to be present on site (English Nature, 2001).
- 4.4.9. The site comprised unmanaged habitats (i.e. semi-improved grassland woodland) which may provide suitable foraging resources and cover for common amphibians such as common toads (*Bufo bufo*). Ornamental water

bodies may be located within nearby residential gardens which may provide suitable conditions for breeding common amphibians.

- 4.4.10. The presence of great crested newts within the site is reasonably discounted, though common amphibians may occur on site.

REPTILES

- 4.4.11. The data search returned three records of common lizard (*Zootoca vivipara*) within 1km from the site boundary, all of which are in relation to Knowsley Park, Mizzy Dam. The site is considered isolated with the A58, M57 and Liverpool Road surrounding the site, with the addition of a residential construction site situated to the north and east. As such, based on the sites location and isolation, the species group are not considered present onsite.

- 4.4.12. Reptiles are not anticipated to be on site and are not considered further.

BIRDS

- 4.4.13. The data search returned several records of protected bird species within 1km from the site boundary. Species include barn owl (*Tyto alba*), greylag goose (*Anser anser*), kingfisher (*Alcedo atthis*), little ringed plover (*Charadrius dubius*), corn bunting (*Emberiza calandra*), grey partridge (*Perdix perdix*), house martin (*Delichon urbicum*), house sparrow (*Passer domesticus*), lapwing (*Vanellus vanellus*), skylark (*Alauda arvensis*), song thrush (*Turdus philomelos*), starling (*Stumus vulgaris*) and swift (*Apus apus*). The majority of bird species are in relation to Prescott Reservoir.

- 4.4.14. Bird species found within 1km from the site boundary that are considered 'Species of Principle Importance in England' include those listed above as well as bullfinch (*Pyrrhula pyrrhula*), cuckoo (*Cuculus canorus*), grasshopper warbler (*Locustella naevia*), lesser redpoll (*Acanthis cabaret*), lesser spotted woodpecker (*Dryobates minor*), linnet (*Linaria cannabina*), reed bunting (*Emberiza schoeniclus*), yellow wagtail (*Motacilla flava*), willow tit (*Poecile montanus*) and spotter flycatcher (*Muscicapa striata*).

3.3.4.

- 3.3.5. During the survey the following birds were observed in relation to the woodland and scattered trees; greenfinch (*Chloris chloris*), wood pigeon (*Columba palumbus*), robin (*Erithacus rubecula*), blue tit and carrion crow (*Corvus corone*). Two wrens were observed, including alarm call behaviour.

- 3.3.6. The site provides a range of potential breeding habitats for a variety of birds in association with the woodland scattered trees and scrub habitats with notable species wren observed within the woodland.

- 3.3.7. Ground nesting birds are not anticipated to be on site due to the sites use for grazing with limited cover observed.

BATS

- 4.4.15. A total of 131 records of bats were returned within 1 km of the site boundary. Activity included both commuting, foraging as well as roost and maternity. Species included soprano pipistrelle (*Pipistrellus pygmaeus*), unidentified pipistrelle (*Pipistrellus* sp.), common pipistrelle (*Pipistrellus pipistrellus*), Nathusius's pipistrelle (*Pipistrellus nathusii*), noctule (*Nyctalus noctule*), unidentified nyctalus (*Nyctalus* sp.), whiskered bat (*Myotis mystacinus*), Brandt's bat (*Myotis brandtii*) and unidentified myotis (*Myotis* sp.). Many of these species were observed in Knowsley Safari Park.

- 4.4.16. There were eight EPSLs found within 5km from the site boundary, based on a consultation with Magic.

- 2017-28690-EPS-MIT-1 was located approximately 770m southwest from the site boundary and allowed for the damage and destruction of a resting place for brown long-eared bat (*Plecotus auritus*) and common pipistrelle (*Pipistrellus pipistrellus*) between 01/08/2017-30/11/2018.
- 2018-38343-EPS-MIT was located approximately 1.2km west from the site boundary and allowed for the destruction of a resting place for common pipistrelle between 01/01/2019-31/01/2022
- 2018-38385-EPS-MIT was located approximately 3.8km southeast from the site boundary and allowed for the destruction of a resting place for common pipistrelle between 18/12/2018-30/09/2019
- 2020-49171-EPS-MIT-1 was located approximately 3.4km northeast from the site boundary and allowed

for the destruction of a resting place for common pipistrelle and brown long-eared bat between 23/11/2020-30/04/2022

- 2020-49491-EPS-MIT was located approximately 4km northeast from the site boundary and allowed for the destruction of both a breeding site and a resting place for common pipistrelle and soprano pipistrelle (*Pipistrellus pygmaeus*) between 30/10/2020-30/04/2026
- 2018-33067-EPS-MIT-1 was located approximately 4km northeast from the site boundary and allowed for the destruction of a resting place for common pipistrelle and soprano pipistrelle between 06/03/2018-27/03/2023
- EPSM2012-4162 was located approximately 4km from the site boundary and allowed for the destruction of a resting place for common pipistrelle between 07/07/2012-01/07/2013
- EPSM2009-1218 was located approximately 5km northeast from the site boundary and allowed for the destruction of a resting place for common pipistrelle between 21/09/2009-31/10/2010

4.4.17. The buildings were subject to a PRA and are detailed in Table 3.1. All trees located within the site were subject to the PRA, however no trees were found to have bat roosting potential and appeared to be in good condition.

Table 3.1 PRA Summary

Building Ref	Description	Photograph
B1	Two-storey residential dwelling with a pitched roof. It was constructed of red brick which was in good condition, with no missing mortar identified. Windows and doors were present on all aspect, with a conservatory located on the western aspect, all of which were flush to the brick work. Overhanging wooden fascia's were present, which was mainly found intact, however some water damage was present on the western aspect, which provided a gap which bats could use to access the loft of the building. Generally, the roof tiles were in good condition, and mortar was present at the ridge tiles. A tiled roof was present on the southern porch, where mortar was missing on the edges of the tiles, which appeared to lead to a cavity which bats may utilised. No internal inspection could be completed. B1 was assessed as having moderate bat roosting potential.	

B2	Single storey, red brick storage shed, located to the west of B1. Generally, no gaps were observed within the brick work. However multiple access points to the internal were present relating to the doors and windows. The pitched roof was mainly constructed of tile, with the western aspect constructed of metal corrugated sheet. Numerous tiles were lifted or broken which may provide a PRF. A detailed internal inspection could not be completed; however, a camera was used to photograph the structure which showed the ceiling was boarded with wood which was held by wooden timbers. These features may provide a PRF, between the tile and wooden boards, and within the timber joists. B2 was assessed as having low bat roosting potential.	 
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4.4.18. The habitats on site are anticipated to provide value for foraging bats due to comprising mosaic of unmanaged habitats which will attract invertebrate prey. Whilst the hedgerows, woodland edges and running water may be utilised for commuting.

4.4.19. The site has the potential to support roosting bats whilst the habitats were assessed as having moderate value.

BADGER

4.4.20. The data search returned two records of Eurasian badger (*Meles meles*) within 1km from the site boundary. Both records are dated no sooner than 1988. No signs of badger presence were recorded within the site or the surrounding 30 m during the site visit. The site provides suitable conditions for sett building within woodland and grassland habitats. However, due to the presence of major road infrastructures on the southern and western aspect, this may impede badger movement within the local area.

WATER VOLE

4.4.21. Seven records of water vole were obtained within 1 km of the site boundary. Many of these records relate to Huyton and Prescott golf club and Prescott Brook. The banks depth and height varied along brook, included steep earth banks suitable for burrow construction. However, limited vegetation for foraging and cover was observed along the banks. It is also anticipated that the water level will fluctuate frequently which water voles will often avoid. In addition, the brook was culverted on its western and eastern aspect, isolating the exposed brook. Water voles will not commute through extensive lengths of culverts (Dean et al, 2016).

4.4.22. As such water vole are deemed likely absent from site.

OTTER

4.4.23. No records of otter were obtained within 1 km of the site boundary. No evidence of otter was noted within the site or adjacent the brook during the field survey. No potential otter holts across the banks of the stream or were identified during the site walkover.

4.4.24. Otter holts are deemed likely absent from site.

WHITE-CLAWED CRAYFISH

- 4.4.25. No evidence of white-clawed crayfish was noted during the field survey and no records of the species were located within 1 km of the site boundary.
- 4.4.26. The brook was assessed as unsuitable for the species due to comprising mostly small gravel and shingle and lacked larger stones and boulders, which are important sheltering spots for this species (Peay, 2002) and no records obtained.

OTHER TERRESTRIAL MAMMALS

- 4.4.27. The data search returned thirty-four records of west European hedgehog (*Erinaceus europaeus*) were located within the 1 km search area. Given the habitats present within the site including unmanaged grassland and woodland, it is anticipated that hedgehog could be present within the site.
- 4.4.28. The data search returned five records of red squirrel (*Sciurus vulgaris*) within 1km from the site boundary. Two red squirrels were recorded at Prescott and two were recorded at Junction 2, M57, Knowsley. The data search also returned approximately 100 records of eastern grey squirrel (*Sciurus carolinensis*). The woodland within the site is connected to woodland associated with the A58. No red squirrel was observed during the survey, though suitable habitat does occur onsite. The presence of red squirrel is unknown.

NON-NATIVE INVASIVE SPECIES

- 4.4.29. Multiple records of non-native invasive flora species were located within the 1 km search area. Species includes Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*), Canadian waterweed (*Elodea canadensis*), floating pennywort (*Hydrocotyle ranunculoides*), water fern (*Azolla filiculoides*) and rhododendron (*Rhododendron ponticum*).
- 4.4.30. Wildlife and Countryside Act (WCA) schedule 9 species found within 1km from the site boundary include eastern grey squirrel (*Sciurus carolinensis*), ruddy duck (*Oxyura jamaicensis*), Canada goose (*Branta canadensis*), Barnacle goose (*Branta leucopsis*) and barn owl (*Tyto alba*)

SPECIES DISCOUNTED FROM ASSESSMENT

- 4.4.31. Hazel Dormouse (*Muscardinus avellanarius*) mainly occur in southern counties, especially in Devon, Somerset, Sussex and Kent. There are few recorded localities north of the Midlands, though they are present in parts of the Lake District and in scattered Welsh localities (Matthews et al, 2018). The species are not generally known to be present within the Sheffield area (Wembridge et al., 2016). The habitats on site are of limited value due to limited areas of extensive woodland and scrub. As such, the species are reasonably discounted from site

4 MITIGATION RECOMMENDATIONS

4.5. DESIGNATED SITES

- 4.5.1. The site is located within the impact risk zone for several SSSIs within the local area. It is anticipated that the designated sites are a sufficient distance away and are separated by anthropogenic barriers such as the residential areas, such that no impacts as a result of development are anticipated.

4.6. HABITATS

SCATTERED TREES AND BROADLEAVED WOODLAND

- 4.6.1. Generally, the protection measures of retained trees will be through the use of temporary protective demarcation fencing to protect the trees and shrubs. The fencing must extend outside the canopy of the retained trees and must remain in position until all plots have been developed to ensure protection is provided throughout the construction phase.
- 4.6.2. The fencing will be in accordance with BS 5837:2012 Trees in Relation to Design, Demolition and Construction: Recommendations.
- 4.6.3. It is recommended the broadleaved woodland is retained as much as feasibly possible. Based on the current master plan sections of W6 will require removal. As such, it is recommended that the woodland area is either replaced for like-for-like or enhancements or retained woodlands in the wider site is completed to compensate for the loss of this woodland section.
- 4.6.4. For scattered trees, it is recommended that replacement tree planting at a 1:3 ratio is required to compensate for loss of any trees. It is recommended that the planting comprises native species and species known to be of value for the attraction of wildlife. This will include fruiting and flowering species.

RUNNING WATER

- 4.6.5. The brook is to be retained and an easement of 8m is to be maintained from its banks. It is recommended, easements maintain the current woodland habitat, though management is completed to minimise overshadowing of the brook.
- 4.6.6. It is recommended that a detailed Construction and Environment Management Plan (CEMP) specific to the proposed development is created (and adhered to throughout the course of construction works) to avoid, minimise and mitigate for negative impacts resulting from construction practices on all habitats surrounding the site. This plan should detail measures to avoid, minimise or mitigate any potential negative effects caused by construction practices on the environment on and surrounding the site including:
- The control of run-off from areas of arisings to prevent any pollutants/contaminants entering aquatic features including surface and groundwater sources.
 - Pollution prevention measures including refuelling to not be completed within 50m of the aquatic habitats.
 - Appropriate measures to suppress dust during hot, dry and/or windy conditions.
 - Excavations should be sealed overnight or should have at least one shallow-sloping side to allow any animals that may fall in to escape.
 - An ecologist should be contacted for advice should any protected species be discovered during construction.
- 4.6.7. The use of silt control devices may be required to minimise the risk of construction related pollution from entering the brook.

4.7. SPECIES

AMPHIBIANS

- 4.7.1. Great crested newts were deemed unlikely to be present on site and no further consideration for the species is required. However, there is a possibility that common amphibians such as common toad may be present on site.
- 4.7.2. It is recommended that consideration of amphibian presence during vegetation removal is considered. Any debris is to be cleared by hand, and any common amphibians located moved carefully, by hand, to outside of the development area.

BREEDING BIRDS

- 4.7.3. Nesting birds are anticipated to utilise the unmanaged grassland and broadleaved. During the survey, a series of birds were identified utilising the broadleaved woodland and considered likely breeding due to the behaviour observed. The extent of this broadleaved woodland will require removal to facilitate development, however, the woodland in association with the brook is to be retained, and will provide a continued breeding bird habitat, with the addition of the adjacent broadleaved woodland on the eastern aspect. It is recommended, that compensatory tree planting is included to compensate for the loss of the woodland, whilst bird boxes should be installed on retained trees and proposed residential housing. The boxes should be selected to target specific bird species that were identified breeding in the broadleaved woodland and associated with residential developments.
- 4.7.4. Any vegetation removal should be undertaken outside of the breeding bird season (March to September, inclusive). If this is not possible, a suitably qualified ecologist should undertake a nesting bird check no more than 48 hours prior to removal. If nesting activity is observed, the nest(s) should be left in situ until the young have fledged. A suitable buffer will be maintained and determined by the ecologist.

BATS

- 4.7.5. B1 and B2 were assessed as having bat roosting potential. It is understood that no bat surveys have been completed at the site to determine presence or absence of the species. Further surveys are to be completed as detailed in Section 5, to confirm presence or absence or roosting bats.
- 4.7.6. The habitats of highest potential value for commuting and foraging bats include the unmanaged habitats which are anticipated to attract a range of invertebrate prey. A series of Bat Activity Surveys (detailed in Section 5) are to be completed between August and October 2022. The beginning of the survey period will not be completed, but consideration of this will be included as part of the final assessment, utilising the data collected during the surveys. The surveys will be used to inform proposed landscape proposals and lighting schemes.

BADGERS

- 4.7.7. No badger setts were located onsite, however suitable habitat is present on site. As such, the following Precautionary Working Methods will be adhered to during construction phase to ensure that no badgers are impacted by the proposed development:
- All site operatives will be inducted to the potential presence of the species and the species legal protection.
 - All site operatives will be inducted as to identifying potential badger setts and should be vigilant if they suspect they locate a new sett during works and inform the site manager immediately. A minimum 20m buffer will be maintained from the potential sett until an ecologist has been to site.
 - All excavations will be battered at a 45 degree angle or ramps to be positioned to allow escape should animals become trapped.
 - All site machinery and materials will be appropriately stored to avoid harm to the species, notably between July and November each year when extra care is needed to avoid potential impacts on pregnant females.

TERRESTRIAL MAMMALS

- 4.7.8. European Hedgehog are anticipated to be present within the site and are a Species of Principal Importance. During habitat management, any areas of dense vegetation should first be carefully hand searched to check for the species. If identified during management, should be relocated carefully by hand to a location away from the working area. If any injured either species are located they should be taken to a local vets.
- 4.7.9. Red squirrel presence is unknown, with suitable habitats located onsite in association with the broadleaved woodland. It is recommended that prior to the removal of the broadleaved woodland, a check is completed by an ecologist for the presence of red squirrel dreys. If any are identified, works will cease and the appropriate mitigation measures completed.

NON-NATIVE INVASIVE SPECIES

- 4.7.10. Himalayan balsam and cotoneaster was present on site. It is recommended the species are eradicated from site and consultation with a qualified non-native invasive species expert be sort to provide the correct method of removal, especially due to the proximity of the brook. The Environment Agency may require consultation as part of this.

5 FURTHER SURVEYS AND CONCLUSION

5.1. BAT SURVEY

5.1.1. B1 and B2 were found to provide bat roosting potential, and therefore, in accordance with Best Practice guidance (Collins, 2016) further nocturnal emergence/ re- entry surveys are to be undertaken between August to September 2022 and will be detailed in a separate report.

5.1.2. The following further roost surveys are to be completed as a minimum:

- B1 – Moderate Bat Roosting Potential – two further surveys
- B2 – Low Bat Roosting Potential – one further survey.

5.1.3. The results of the further surveys will determine if any mitigation is required for roosting bats. If roosting bats are located within any of the buildings, a Natural England Mitigation Licence may be required for development to proceed. The Licence can only be obtained once planning permission has been granted and all wildlife conditions discharged. However, the bat emergence surveys must be undertaken prior to planning permission being applied for as they are a material consideration.

5.2. BAT ACTIVITY SURVEY

5.2.1. The site was assessed as providing moderate value for foraging and commuting bats. Therefore, in accordance with Good Practice Guidelines, a minimum of one transect survey per month is to be undertaken per month. Due to missing the beginning of the season, surveys would be completed between August – October. Static detectors will be left at the site to collate additional data.

5.3. SUMMARY

5.3.1. Table 5.1 summarises the surveys are to be completed o inform relevant mitigation and to inform relevant planning applications

Table 5.1 Further survey summary

Survey	Survey Timeframes
Nocturnal Bat Survey	August to September 2022
Bat Activity Survey	August to October 2022

5.4. CONCLUSION

5.4.1. The site was found to semi-improved grassland field with broadleaved woodland, amenity grassland and buildings. A brook dissected through the site. These habitats are anticipated to provide a range of habitats for local notable flora and fauna. The site was found to have value or potential value for bats, birds, amphibians and terrestrial mammals.

5.4.2. Specific enhancement recommendations for the site include the following:

- 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.
- Planting of linear features such as hedgerows and trees between garden plots where possible, to add commuting features withing the site.
- The inclusion of 'hedgehog highways' to facilitate movement across the site. This includes holes of 13 x 13cm at the bases of fence panels, leaving a sufficient gap beneath gates and/or leaving brick spaces at the bases of brick walls.

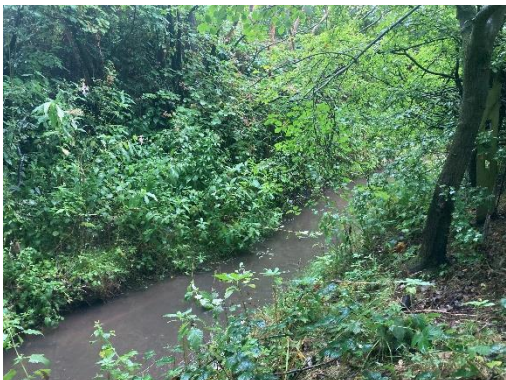
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Feature	Photograph
Amenity grassland with scattered trees.	
Hardstanding situated to the south of B1	
Tall ruderal and grassland to the east of the site.	
Broadleaved woodland	

			
Semi-improved grassland			
Running water			



Drawing Title : CW20-488 HM01
Date: 18/08/22

- Red Line Boundary
- Semi-improved Grassland
- Building
- Amenity Grassland
- Broadleaved Woodland
- Hardstanding
- Standing Water
- Scattered Broadleaved Tree

Scale: 1:2500
Drawn By: KB
Checked By: OC
Approved By: RN



Client: SEP Construction Ltd
Site: Dye House, Prescot
Project Number: 20-488 Rev: 3.0
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