



Preliminary Ecological Appraisal Report

Knowlsley East Hub, Admin Road, Liverpool

Reference: 80-660-R1-1

Date: April 2022



PRELIMINARY ECOLOGICAL APPRAISAL REPORT

Knowsley East Hub
Admin Road, Liverpool

Prepared for:
Redsun Projects Ltd

Report Ref: 80-660-R1-1
Date Issued: 22/04/2022

E3P

Taylor Road
Trafford Park
Urmston
Manchester
M41 7JQ

+ 44 (0) 161 707 9612
<https://e3p.co.uk/>

Registered in England
CRN: 08725262

QUALITY ASSURANCE

PROJECT NUMBER	80-660		
VERSION	Version 1		
REMARKS	Final		
DATE	April 2022		
PREPARED BY	C. Barlow		
QUALIFICATIONS	BSc (Hons), MSc, MEnvSc, CEnv, MCIEEM, Associate Director		
CHECKED BY	H. Morgan		
QUALIFICATIONS	BSc (Hons) ACIEEM MEnvSc, Senior Ecologist		
AUTHORISED BY	C. Barlow		
QUALIFICATIONS	BSc (Hons), MSc, MEnvSc, CEnv, MCIEEM, Associate Director		



EXECUTIVE SUMMARY

Site Address	6 Admin Road, Liverpool, L33 7TX
Coordinates	E 343317, N 397769
Site Area	Approximately 1.5 ha
Current Site Use and Adjacent Site Use	The site comprised a brownfield site which had been colonised by grassland. Areas of amenity grassland, scattered trees and hardstanding were also present. Industrial and commercial units are present to the north, south and west. With residential properties present to the east of the site boundary beyond a commercial unit. Admin Road and South Boundary Road define the southern site boundary.
Designated Sites	The site was not located within the Impact Risk Zone of any Sites of Special Scientific Interest (SSSI). No Natura 2000 sites were located within 1 km of the site boundary. As such no impacts on these sites are anticipated as a result of development. Acornfield Plantation Local Nature Reserve (LNR) and Knowsley Local Wildlife Site (KLWS) is located approximately 85 m north-east of the site. Considering the close distance of the LNR to the site, protection and pollution control measures should be implemented to ensure that no wildlife are deterred from using these areas.
Survey Results	The site was found to comprise poor semi-improved grassland, hardstanding, amenity grassland and scattered trees. The site was found to have the following potential ecological constraints: ✿ Limited foraging opportunities for bats within the poor semi-improved grassland and scattered trees. ✿ Opportunities for nesting birds within the scattered trees. ✿ Amphibians are anticipated to be present within the poor semi-improved grassland. ✿ Badger are anticipated to be present within the surrounding area. ✿ Rhododendron and field horsetail were recorded within the site.
Conclusions	No further surveys are required for development to support a planning application. The following mitigation is recommended:



-  Common amphibians are to be removed by hand from the working area during the clearance phase.
-  Precautionary Working Methods for badger.
-  If any trees require removal, they should be removed outside of the breeding bird season (March to September inclusive). If this is not possible, a nesting bird check should be undertaken by a suitably qualified ecologist up to 48 hours before works commence. If a nest, or nest in construction, is located, then a stand-off distance should be maintained until the young have fledged.
-  Eradication of invasive species prior to works commencing on-site.

A gain in biodiversity will likely be required on-site. If this cannot be achieved on-site, a conservation offset payment, or off-site compensation may be required.



Table of Contents

EXECUTIVE SUMMARY	2
1. INTRODUCTION	6
1.1. Background	6
1.2. Proposed Development	6
1.3. Site Location	6
1.4. Objectives	7
2. METHODOLOGY	8
2.1. Desktop Study	8
2.2. Vegetation and Habitats	8
2.3. Fauna	9
2.4. Preliminary Roost Assessment	9
2.5. Survey Limitations	10
3. SURVEY RESULTS	11
3.1. Site Context	11
3.2. Designated Sites	11
3.3. Habitats	12
3.3.1. Poor Semi-Improved Grassland	12
3.3.2. Hardstanding	13
3.3.3. Amenity Grassland	14
3.3.4. Scattered Trees	14
3.4. Protected and Notable Species	15
3.4.1. Species Discounted from Assessment	15
3.4.2. Amphibians	15
3.4.3. Bats	16
3.4.4. Badgers	16
3.4.5. Otter and Water Vole	17
3.4.6. Other Terrestrial Mammals	17
3.4.7. Nesting Birds	17
3.4.8. Reptiles	18
3.4.9. Invertebrates	18
3.5. Invasive Plant Species	18
4. ECOLOGICAL CONSTRAINTS AND MITIGATION	19
4.1. Development Proposals	19
4.2. Designated Sites	19
4.3. Habitats	19
4.3.1. Scattered Trees	20
4.4. Protected and Notable Species	21
4.4.1. Amphibians	21
4.4.2. Breeding Birds	21
4.4.3. Bats	21
4.4.4. Badgers	22
4.5. Invasive Plant Species	22



5. FURTHER SURVEYS	23
6. DESIGN ADVICE FOR BIODIVERSITY NET GAIN.....	24
7. REFERENCES	25
APPENDIX I PHASE 1 HABITAT PLAN	26



1. INTRODUCTION

1.1. BACKGROUND

E3P were commissioned by Redsun Projects Ltd. to undertake a Preliminary Ecological Appraisal at Knowsley East Hub, Admin Road, Liverpool, hereafter referred to as “the site”.

This assessment has been undertaken by Associate Director Celia Barlow BSc (Hons) MSc MEnvSc CEnv MCIEEM. Celia holds Full membership to CIEEM and is a Chartered Environmentalist with the IES. Celia holds both Class 1 bat and great crested newt Natural England Licences, Field Identification Skills Certificate (FISC) Level 3 and has key experience with amphibians and reptiles.

1.2. PROPOSED DEVELOPMENT

Detailed development proposals include the construction of a warehouse unit with associated infrastructure, car parking and landscaping.

1.3. SITE LOCATION

The site is located in a predominantly industrial and commercial area of Knowsley associated with Knowsley Industrial Estate. Admin Road defined the southern boundary with Gale Road defining the western boundary. Industrial Units are located on all aspects of the site, with residential housing present approximately 65 m to the east. Please refer to Figure 1.1 for the approximate site location.

FIGURE 1.1 APPROXIMATE SITE LOCATION



1.4. OBJECTIVES

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 species and habitats.
- ✦ Recommend any further surveys or mitigation that may be required.

The Preliminary Ecological Appraisal comprises a desk study and site walkover. This survey has been completed as a baseline assessment of the site, and as such please see the end of the report for further surveys and mitigation proposed.



2. METHODOLOGY

2.1. DESKTOP STUDY

The following sources of information and ecological records were consulted:

- ✦ MAGIC – A web-based interactive mapping system, on which geographic information regarding key environmental schemes and designations are collated, including details of statutory conservation sites, consulted in April 2022.
- ✦ Aerial mapping and ordnance survey maps.
- ✦ Local data records, including The Merseyside BioBank (MBB) – the local biodiversity records centre for North Merseyside, received on 30th March 2022.

A 1 km search area was utilised for the data search, with this being deemed an appropriate distance for the Zone of Influence of the site, due to the on-site habitat and surrounding area.

The data search included a request for details of protected and notable species of flora and fauna within 1 km of the central grid reference of the site. In addition, a request was made for any non-statutory designated sites within 1 km of the site boundary.

Please note that a lack of up-to-date records does not confirm the absence of a species from the area. The lack of records may simply be a result of a lack of protected species surveys being undertaken within the local area.

2.2. VEGETATION AND HABITATS

A Preliminary Ecological Appraisal of the proposed development site was undertaken by Celia Barlow on 20th April 2022. The weather was warm and dry.

The walkover survey was undertaken to the standard methodology as detailed by the JNCC Handbook for Phase 1 Habitat Survey, 2010. The assessment follows the methodology as per “Guidelines for Preliminary Ecological Appraisal” (CIEEM, 2017).

A vegetation and habitat plan has been produced for the proposed development site and the immediate surrounding area (please refer to Appendix I). The mapping is based on the Joint Nature Conservation Committee Phase I Habitat Survey Methodology (JNCC, 2010).

Searches were made for uncommon, rare and statutorily protected plant species, those species listed as protected in the Wildlife and Countryside Act 1981 (as amended) and species which are indicators of important and uncommon plant communities. All plant nomenclature follows Stace (2019).

Searches were carried out for the presence of invasive species, including those listed on the revised (April 2010) Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) including but not limited to, Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*).



2.3. FAUNA

A thorough search of the site for signs of protected species of fauna was undertaken during the site walkover. These searches considered the following:

- ✦ Suitability of any ponds to support notable amphibians, and the suitability of the site's terrestrial habitats to support amphibians.
- ✦ Suitability of the site to support reptiles by way of habitat structure and refuge piles, as well as links to the wider landscape.
- ✦ Signs of badgers (*Meles meles*), by way of setts, mammal paths, foraging signs or latrines to indicate usage of the site by the species.
- ✦ Search of any watercourses for signs or suitability for water vole (*Arvicola amphibius*) and otter (*Lutra lutra*) by way of burrows, resting places, holts and foraging signs.
- ✦ Suitability of the site to support roosting, foraging and commuting bats.
- ✦ Suitability of the site to support notable bird species.
- ✦ Suitability of the site to support notable invertebrates.
- ✦ Search of the site for any invasive species.

2.4. PRELIMINARY ROOST ASSESSMENT

The Preliminary Roost Assessment (PRA) was undertaken by Celia Barlow on 20th April 2022. Celia holds a valid Natural England Class 1 Survey Licence (2017-32202-CLS-CLS).

The survey involved undertaking a systematic search of the structures and trees, searching for signs of bats, or spaces where bats would be able to access. The methodology followed that described in *Bat Surveys for Professional Ecologists, 3rd Edition (Collins, 2016)*.

The structures and trees were categorised for their bat roosting potential as described in Table 2.1 in accordance with Collins (2016).

TABLE 2.1 BAT ROOSTING POTENTIAL CLASSIFICATION OF STRUCTURES AND TREES

CATEGORY	DESCRIPTION
NEGLIGIBLE	A structure or tree with no potential roosting features present or a tree of an age or species that would not support roosting bats.
LOW	A structure with one or more potential roost sites. However, the potential roost sites do not provide suitability for large numbers of bats (i.e. for maternity or hibernation).
MODERATE	A structure or tree with one or more potential roosting feature which could support bats but is of a suitability meaning that it would be unlikely to support a roost of high conservation status.
HIGH	A structure or tree with several potential roosting features which would be able to support large number of bats on a regular basis and for longer periods of time.



The survey was undertaken utilising suitable binoculars and ladders to access all areas where safe to do so.

2.5. SURVEY LIMITATIONS

A Preliminary Ecological Appraisal does not constitute a full botanical survey. Instead, key species are identified to give a representative description of each habitat type.

A survey within 30 m of the site for evidence of badger (*Meles meles*) was unable to be carried out as commercial and industrial units were located north, east and west of the site and access to these areas was not possible. This is not deemed to be a major constraint due to the hardstanding nature of the adjacent habitats.

Direct access could not be gained to the area within the north east corner of the site beyond the palisade fencing. As such the Preliminary Roost Assessment of the adjacent building was undertaken from afar.



3. SURVEY RESULTS

3.1. SITE CONTEXT

The site comprised a brownfield site which had been colonised by grassland. Areas of amenity grassland, scattered trees and hardstanding were also present. The site is expected to provide limited value to local wildlife, which is restricted to the few scattered trees that may offer nesting opportunities for birds. Residential, commercial and industrial developments extend to the north, east, south and west of the site which are anticipated to be of limited value for local wildlife.

The scattered trees to the north-east provide connectivity to Acornfield Plantation Local Nature Reserve (LNR) and Knowsley Local Wildlife Site (KLWS) which is located approximately 85 m north-east at its closest point. This habitat is expected to act as a resource for a range of local fauna and has the potential to provide roosting and nesting opportunities for bats and birds. The area contains areas of Priority Habitat, Lowland Fens, which is anticipated to offer suitable habitat for a variety of fauna including birds and invertebrates.

No waterbodies were identified within 250 m of the site boundary.

3.2. DESIGNATED SITES

The site is not located within the Impact Risk Zone of any Site of Special Scientific Interest (SSSI). No Natura 2000 sites are located within 5 km of the site boundary.

Acornfield Plantation LNR and KLWS is located approximately 85 m north-east of the site. This area comprises a woodland dominated by mature birch species (*Betula sp.*), oak species (*Quercus sp.*) and sycamore (*Acer pseudoplatanus*) with a lowland basin mire in the centre. The area also includes a pond, stream, drainage channels, grassland with bracken (*Pteridium aquilinum*) and rhododendron (*Rhododendron ponticum*). The site contains four Priority Biodiversity Action Plan (BAP) Habitats, acid unimproved grassland, neutral unimproved grassland, Basin Mire and Valley Mire and one Regionally Important species fat duckweed (*Lemna gibba*). The area is known to have breeding populations of dragonflies, damselflies and water vole.

The following additional KLWSs were located within the 1 km search area:

- ✿ Charley Wood KLWS is located approximately 730 m north-east of the site boundary comprising woodland dominated by broadleaved trees with acid peat soil that attracts important invertebrate assemblages. The site contains two Priority BAP habitats unimproved neutral and unimproved acid grassland. The regionally important trailing St John's-wort (*Hypericum humifusum*) can be found on-site alongside thirteen locally rare plant species. From aerial imagery it appears that part of the site has been developed.
- ✿ Otis Meadow KLWS is located approximately 745 m south-west of the site boundary comprising regionally important habitats of damp marshy and dry neutral unimproved grasslands with developing scrub that contains one regionally important and locally rare vetch species smooth tare (*Ervum tetraspermum*) and locally rare early marsh-orchid (*Dactylorhiza incarnata*).



3.3. HABITATS

The main habitats encountered during the survey are described in the following subsections. Please refer to Appendix I Drawing 80-660-001 for the Phase 1 Habitat Plan.

3.3.1. POOR SEMI-IMPROVED GRASSLAND

The vast majority of the site comprised poor semi-improved grassland. Small areas of bare ground were present throughout the site, with some sparsely scattered logs along the eastern site boundary. Woody plants were more dominant towards the site edges.

Species present included dandelion (*Taraxacum officinale* agg.), bramble (*Rubus fruticosus* agg.), broad-leaved dock (*Rumex obtusifolius*), Yorkshire fog (*Holcus lanatus*), perennial rye-grass (*Lolium perenne*), willow saplings (*Salix* sp.), ribwort plantain (*Plantago lanceolata*), common ragwort (*Jacobaea vulgaris*), gorse (*Ulex europaeus*), smooth sow-thistle (*Sonchus oleraceus*), tufted vetch (*Vicia cracca*), red clover (*Trifolium pratense*), white clover (*Trifolium repens*), spear thistle (*Cirsium vulgare*), large bindweed (*Calystegia silvatica*), teasel (*Dipsacus fullonum*), cock's-foot (*Dactylis glomerata*), daisy (*Bellis perennis*), broom (*Cytisus scoparius*), colt's-foot (*Tussilago farfara*), green alkanet (*Pentaglottis sempervirens*), knapweed (*Centaurea nigra*), common nettle (*Urtica dioica*), butterfly-bush (*Buddleja davidii*), red fescue (*Festuca rubra*) and creeping thistle (*Cirsium arvense*). An area of field horsetail (*Equisetum arvense*) was identified within the southern section of the field.

PLATE 1

SHOWING POOR SEMI-IMPROVED GRASSLAND



PLATE 2 SHOWING AREAS LOG PILES



3.3.2. **HARDSTANDING**

Areas of concrete hardstanding were located within the site, associated with the current access along Gale Road, and an area of parking associated with Admin Road. The hardstanding had been colonised at its edges by smooth sow-thistle and Yorkshire Fog.

PLATE 3 SHOWING HARDSTANDING CAR PARK



PLATE 4 SHOWING HARDSTANDING ASSOCIATED WITH GALE ROAD ACCESS



3.3.3. AMENITY GRASSLAND

Amenity grassland verges were present adjacent to the hardstanding to the south, and within the north east corner of the site. The grass was well maintained, as such, grass species were difficult to identify. Species present included, perennial rye-grass, common mouse-ear (*Cerastium fontanum*), white clover, common ragwort, daisy, weld (*Reseda luteola*) Yorkshire fog and dandelion.

A palisade fence enclosed the area of amenity grassland to the north east of the site. Within this area rhododendron was identified along the northern site boundary.

PLATE 5 SHOWING AREA OF AMENITY GRASSLAND



3.3.4. SCATTERED TREES

A small number of scattered trees were present within the site associated with the areas of amenity grassland, some small scattered trees were also located just outside of the northern site boundary. Species present included silver birch (*Betula pendula*), sycamore (*Acer pseudoplatanus*), elder (*Sambucus nigra*) and pedunculate oak (*Quercus robur*).



PLATE 6 SHOWING SCATTERED TREES ALONG NORTHERN BOUNDARY



PLATE 7 SHOWING SCATTERED ASSOCIATED WITH AMENTIY GRASSLAND



3.4. PROTECTED AND NOTABLE SPECIES

3.4.1. SPECIES DISCOUNTED FROM ASSESSMENT

White-clawed crayfish (*Austropotamobius pallipes*) has been discounted from assessment as no suitable aquatic habitats were located on-site or within proximity to the site.

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 Merseyside area and as such, the species are reasonably discounted from assessment.

3.4.2. AMPHIBIANS

Consultation with MBB identified five records of great crested newt (*Triturus cristatus*) within the 1 km search area. The closest of which were located approximately 240 m and 300 m east of the site associated with Acornfield Plantation LNR and KLWS.



Consultation with MAGIC did not identify any great crested newt European Protected Species Licences within the 1 km search area. The closest licence was located approximately 5.3 km south-east of the site, effective from 2017 to 2018 for the destruction of a great crested newt resting place.

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 where habitat connectivity is of high quality) (English Nature, 2001). As such, the presence of great crested newts on-site is reasonably discounted as no waterbodies were located on-site or within 250 m of the site. Their presence on-site is therefore reasonably discounted.

Common frog (*Rana temporaria*) records were identified approximately 335 m north-east of the site boundary associated with Acornfield Plantation LNR and KLWS in 2015, with one additional record in 2005 and six historic records for the same area between 1981 and 1994. One record and two historic records of common toad (*Bufo bufo*) were identified approximately 335 m north-east of the site boundary associated with Acornfield Plantation LNR and KLWS in 2005 and 1994. The closest smooth newt (*Lissolemna vulgaris*) record was 675 m south-west associated within a waterbody adjacent to Otis Meadow KLWS with a count of two in 2017. Three historic records of smooth newt were recorded approximately 335 m north-east of the site boundary associated with Acornfield Plantation LNR and KLWS between 1982 and 1994.

Common amphibians may utilise the poor semi-improved grassland within the site however great crested newts have been reasonably discounted from further assessment.

3.4.3. BATS

Numerous records of bats were located within 1 km of the site boundary during the data search. Records included unknown bat species (*Chiroptera sp.*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), pipistrelle species (*Pipistrellus sp.*), Myotis species (*Myotis sp.*), Daubentons (*Myotis daubentonii*) and noctule (*Nyctalus noctula*). The closest record, a potential roost of an unknown species, was recorded approximately 270 m north-east of the site, associated with Acornfield Plantation LNR and KLWS.

Consultation with MAGIC did not identify the presence of any Natural England Bat Mitigation Licences within the 1 km search area. The closest licence was located approximately 3.2 km south west of the site boundary, active in 2010 for the destruction of a common pipistrelle (*Pipistrellus pipistrellus*) non-breeding roost.

Bats could utilise the poor semi-improved grassland and scattered trees for foraging, however, more valuable habitats are located in the wider area, and the site is not thought to comprise an important foraging area for the species group. There is some connectivity from the site to areas of habitat to the north, however there are no features within the site which would act as suitable commuting features.

No trees on site were identified as having the potential to support roosting bats due to a lack of potential roosting features. Or they were of an age which would not support potential roosting features.

3.4.4. BADGERS

No records of badger (*Meles meles*) were located within the site boundary or the 1 km search area. A search for signs of badger could not be completed within the 30 m buffer from site due to access constraints from the surrounding commercial developments.



The wider landscape to the north of the site associated with Acornfield Plantation LNR and KLWS was assessed as having suitability for the species, due to the presence of broadleaved woodland and scrub. As such, badger may be present in the surrounding area. No evidence of badger foraging, or sett building was identified on site, and it is deemed unlikely they would utilise the site for this purpose due to limited connectivity to suitable habitat, and the general urban nature of the site. Nevertheless, there is a small possibility badgers could utilise the site.

3.4.5. OTTER AND WATER VOLE

No records of otter (*Lutra lutra*) were identified within the 1 km search area. Numerous records of water vole (*Arvicola amphibious*) were identified in the data search, the closest records approximately 320 m north-east of the site boundary associated with the wet ditches within Acornfield Plantation LNR and KLWS. The records were between 1981 and 2010 with observations including individuals, burrows and latrines.

No aquatic habitats were identified on-site during the survey and no watercourses were located within proximity to the site. As such otter and water vole are discounted from further assessment.

3.4.6. OTHER TERRESTRIAL MAMMALS

Thirteen records of European hedgehog (*Erinaceus europaeus*) were located within 1 km of the site boundary, the closest record being 355 m north-east associated with the northern boundary of Acornfield LNR and KLWS. The species could utilise the site to forage, however due to the lack of shelter on-site, the presence of hedgehog within the site is reasonable discounted. Some log piles were present within the site, however, these were sparse and would not provide suitable cover for hedgehog.

Two records and four historic records of brown hare (*Lepus europaeus*) were located within 1 km of the site boundary with the closest record being 680 m north-east of the site associated with arable land with a count of two in 2002. The site did not have value to support the species due to the lack of connectivity to arable land. As such brown hare can be reasonably discounted from further assessment.

3.4.7. NESTING BIRDS

Consultation with MBB identified numerous records of notable birds within the search area, including barn owl (*Tyto alba*), bullfinch (*Pyrrhula pyrrhula*), Canada goose (*Branta canadensis*), corn bunting (*Emberiza calandra*), crossbill (*Loxia curvirostra*), cuckoo (*Cuculus canorus*), dunnoek (*Prunella modularis*), grasshopper warbler (*Locustella naevia*), grey partridge (*Perdix perdix*), house martin (*Delichon urbicum*), house sparrow (*Passer domesticus*), kingfisher (*Alcedo atthis*), lapwing (*Vanellus vanellus*), lesser redpoll (*Acanthis cabaret*), lesser spotted woodpecker (*Dryobates minor*), linnet (*Linaria cannabina*), little ringed plover (*Charadrius dubius*), marsh harrier (*Circus aeruginosus*), reed bunting (*Emberiza schoeniclus*), skylark (*Alauda arvensis*), song thrush (*Turdus philomelos*), spotted flycatcher (*Muscicapa striata*), starling (*Sturnus vulgaris*), swift (*Apus apus*), tree sparrow (*Passer montanus*), turtle dove (*Streptopelia turtur*), willow tit (*Poecile montanus*), yellow wagtail (*Motacilla flava*) and yellowhammer (*Emberiza citrinella*) with the majority of records being associated with Kirby Moss that includes Acornfield Plantation LNR and KLWS.

Common bird species could utilise the scattered trees for nesting. The site is assessed as having negligible value for ground nesting birds due to the small size, and urban nature, of the site.



3.4.8. REPTILES

No records of reptiles were identified within the 1 km search area. The site was found to provide limited value for reptiles, given the site mainly comprised grassland which would lack the structural diversity to support reptiles in the absence of any other habitat types. Some log piles were identified within the site, although these would not provide enough cover for the species group. As such, the presence of reptiles within the site is reasonably discounted.

3.4.9. INVERTEBRATES

The data search identified numerous records of invertebrates within the search area. The majority of records were associated with Acornfield Plantation LNR and KLWS and included alder leaf beetle (*Agelastica alni*), small heath (*Coenonympha pamphilus*), wall (*Lasiommata megera*), common darter (*Sympetrum striolatum*), variable damselfly (*Coenagrion pulchellum*), black slug (*Arion ater*), *Cryptophagus ruficornis* and *Uleiota planatus*.

Due to the lack of floristic diversity, notable invertebrates are not anticipated to be present on-site. Common invertebrates may be present within the poor-semi-improved grassland and scattered trees.

3.5. INVASIVE PLANT SPECIES

Records of invasive species were recorded within the 1 km search area including Japanese knotweed, Himalayan balsam, Himalayan cotoneaster (*Cotoneaster simonsii*), montbretia (*Crocasmia pottsii x aurea* = *C. x crocosmiiflora*), rhododendron and three-cornered garlic (*Allium triquetrum*). Records of Himalayan balsam, Japanese knotweed and rhododendron were located within Acornfield Plantation LNR and KLWS with the closest being a record of Himalayan Balsam approximately 180 m north-east of the site boundary.

During the survey field horsetail was identified within the poor semi-improved grassland, within the southern section of the site. In addition, Rhododendron was identified within the north east corner of the site.



4. ECOLOGICAL CONSTRAINTS AND MITIGATION

4.1. DEVELOPMENT PROPOSALS

Detailed development proposals include the construction of a warehouse unit with associated infrastructure, car parking and landscaping.

4.2. DESIGNATED SITES

The site is located was not located within any SSSI Impact Risk Zones or within the Zone of Influence of any Natura 2000 sites. One LNR and KLWS and an additional two KLWS's were located within proximity to the site. Acornfield Plantation LNR and KLWS approximately 85 m north-east, Charley Wood KLWS approximately 730 m north-east and Otis Meadows KLWS approximately 745 m south-west.

No impacts are anticipated on Charley Wood and Otis Meadows KLWS's due to the distance between the development site and the designated sites. Acornfield Plantation LNR and KLWS is linked to the development site via scattered trees and woodland. As such is recommended that best practice protection measures as detailed within PPG5 Pollution Prevention Guidelines (2007) are to be put in place to protect the designated site. The following control measures would be required during any ground works and during the construction phase:

- ✿ Turning off plant when not in use.
- ✿ Dampening of the operational areas will be regularly undertaken during dry weather conditions to avoid dust. Dust management will be extended to cover the plant and all operational areas and will be complied with throughout the period of development.
- ✿ Measures to prevent pollutants from entering ground and surface water is standard construction practice through the use of a bunded fuel storage and refuelling areas. These measures should be underwritten by spill management equipment being kept on-site and capable of being effectively utilised by trained operatives to contain any accidental spillage within any part of the operational area.
- ✿ A toolbox talk should be completed by a qualified ecologist to ensure contractors are aware of Acornfield Plantation LNR and KLWS and its ecological importance.
- ✿ During night hours, no lighting is to be located towards Acornfield Plantation LNR and KLWS to ensure no wildlife are deterred from using it.
- ✿ A 'Site Tidy' protocol is to be put in place on-site. All litter is to be appropriately controlled, whilst on-site materials are to be adequately stored over-night.
- ✿ All excavations will be battened at a 45-degree angle to allow escape should animals become trapped.

4.3. HABITATS

The site comprised habitats that were found to be widespread within the local area, they did contain some limited value for wildlife such as foraging bats, amphibians and birds. Badger and hedgehog are also anticipated to be present within the local area. The hardstanding and amenity grassland are of lowest value for wildlife, with the scattered trees and grassland comprising the areas of highest value.



4.3.1. SCATTERED TREES

It is recommended that, where possible, trees are retained and protected through development. It is anticipated that some trees may require removal to facilitate development, and where this is needed, new landscape planting will be introduced to mitigate the loss.

It is recommended that the landscape planting comprises native species and species known to be of value for the attraction of wildlife. This will include fruiting and flowering species. Species deemed suitable for this development could include berry-bearing native species such as:

-  Hawthorn (*Crataegus monogyna*).
-  Rowan (*Sorbus aucuparia*).
-  Holly (*Ilex aquifolium*).
-  Whitebeam (*Sorbus aria*).
-  Spindle (*Euonymus europaea*).
-  Dog rose (*Rosa canina*).
-  Guelder rose (*Viburnum opulus*).
-  Elder.

All planting should be from a trusted pest-free source and, where possible, be of local provenance.

Any trees within the site or boundary, to be retained, are to be appropriately protected during the construction phase. Temporary protective demarcation fencing will be used to protect the trees. The fencing must extend outside the canopy of the retained trees and must remain in position until the end of development to ensure protection is provided throughout the construction phase.

The fencing will be in accordance with BS 5837:2012 *Trees in Relation to Design, Demolition and Construction: Recommendations*.



4.4. PROTECTED AND NOTABLE SPECIES

4.4.1. AMPHIBIANS

The site may support small numbers of common amphibians within the poor semi-improved on-site. It is recommended that during the clearance phase of works, any common amphibians encountered be moved by hand, away from construction activities to Acornfield Plantation LNR and KLWS north of the site.

4.4.2. BREEDING BIRDS

The site was assessed as having value for passerine species within the small number of scattered trees.

If any scattered trees require removal, they should be removed outside of the breeding bird season (March to September inclusive). If this is not possible, a nesting bird check will be undertaken by a suitably qualified ecologist up to 48 hours before works commence. If a nest, or nest in construction, is located then a stand-off distance will be maintained until the young have fledged. The ecologist will advise on suitable stand off and provide a toolbox talk to all site contractors regarding their working limits and legal implications.

Post-development, landscape planting, as detailed in Section 4.3.1, should be introduced to mitigate the loss of any trees removed to facilitate the development. Bird boxes could also be installed on retained trees or the proposed buildings to enhance the site's value for the species group.

4.4.3. BATS

The site was found to have limited value for foraging bats within the grassland and scattered trees. It is recommended that the proposed Lighting Plan considers the habitats of highest importance. It is recommended that any security lighting during construction is appropriately placed to avoid being directed at any retained habitats including the habitats adjacent to the north east of the site.

To reduce the potential lighting impacts for bats, the following recommendations are advised for the lighting strategy:

-  Lighting should be pre-fixed on any proposed buildings, to ensure impacts on sensitive areas such as the habitat corridor to the north east of the site is not diminished.
-  Warm white tones are preferable to blue toned lights (3000k).
-  LED lights are preferable as they produce minimal UV.
-  To avoid light spill skyward, ensure lights face downward.
-  Make use of vegetation to block light spill into dark areas.

Lighting should follow the protocols outlined in the Institute for Lighting Engineers document "Guidance for the Reduction of Obtrusive Lighting" (2005) and BCT's "Bats and Artificial Lighting in the UK" (2018) to minimise disturbance and sky-glow off site.

It is recommended that any planting within the site be of native fruiting/flowering species in order to enhance the site for foraging bats post-completion. A series of bat boxes could be installed on retained trees or the proposed buildings to enhance the site's value for the species group.



4.4.4. BADGERS

No badger setts were identified on-site, and the site was assessed as providing limited sett building and foraging resources for the species. However, the species are anticipated to be present within the wider area.

The following Precautionary Working Methods will be adhered to during construction phase to ensure that no badgers within the local area are impacted by the proposed development:

-  All site operatives will be inducted to the presence of the species and their working limits and legal responsibilities.
-  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 project ecologist immediately.
-  All excavations will be battened at a 45-degree angle 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.

It is not anticipated that the development will have a negative impact on badgers within the local area.

4.5. INVASIVE PLANT SPECIES

Rhododendron was identified during the site walkover. As such, it is recommended, prior to the development, that this species should be eradicated following the most current guidance set out by the Environment Agency by a qualified contractor.

Field horsetail was also identified during the survey and it is recommended that this eradicated due to the damage it can cause to areas of hardstanding. Field horsetail is not listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) and therefore does not require removal by an Environment Agency contractor.



5. FURTHER SURVEYS

No further surveys are required for the development to proceed.



6. DESIGN ADVICE FOR BIODIVERSITY NET GAIN

The scheme should strive to achieve biodiversity net gain, as per “Biodiversity Net Gain; Good Practice Principles for Development” CIEEM, CIRIA, IEMA (2016). Full details of this and a calculation of net gain could be completed after detailed landscape plans have been prepared. It is likely that a 10% gain in habitats will be a mandatory requirement in the near future. To aid in the achievement of 10% net gain, it is recommended that the trees on-site are retained, and the project ecologist is consulted during the design stage.

If a net gain cannot be achieved on site, off site compensation, or a conservation off-set payment may be required. A conservation off-set payment would need to be pre-agreed with the local authority.



7. REFERENCES

- ✿ Bat Conservation Trust (2018). Bats and Artificial Lighting in the UK: Bats and the Built Environment Series.
- ✿ Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal.
- ✿ CIEEM (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.
- ✿ Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edition. The Bat Conservation Trust, London.
- ✿ Crawford (2010) Environment Agency's Fifth Otter Survey of England 2009–2010 .
- ✿ Dean, M., Strachan, R., Gow, D., Andrews, R., Mathews, F., & Chanin, P. (2016). The Water Vole Mitigation Handbook.
- ✿ Downs et al (2003) The Effects of Illuminating the Roost Entrance on the Emergence Behaviour of *Pipistrellus pygmaeus*. Biological Conservation 111, 247-252.
- ✿ English Nature (2001). Great Crested Newt Mitigation Guidelines.
- ✿ Froglife (2001). Great Crested Newt Conservation Handbook.
- ✿ Institute of Lighting Engineers (2005). Guidance Notes for the Reduction of Obtrusive Light.
- ✿ JNCC (2010). Handbook for Phase 1 habitat survey: A technique for environmental audit. English Field Unit, Nature Conservancy Council.
- ✿ Oldham, R. S., Keeble J., Swan, M. J. S. & Jeffcote, M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143–155.
- ✿ Stace, C. A. (2019). New Flora of the British Isles. Fourth Edition. Cambridge University Press.
- ✿ Wildlife and Countryside Act (2010) Schedule 9 of the Wildlife and Countryside Act 1981.

END OF REPORT



APPENDIX I

PHASE 1 HABITAT PLAN

Key:

- Site boundary
- Palisade fence
- Scattered trees
- Log pile
- Rhododendron
- Field horsetail
- SI SI Poor semi-improved grassland
- Hardstanding
- A A Amenity grassland

Notes

Issue: 1	Revision: 1	Date: 22/04/2022	Drawn: LT	Authorised: CB
Client: Redsun Projects Ltd			Job No. 80-660	Date: 22/04/2022
			Drawing No. 80-660-001	Scale: 1:1400 @A4
Job title: Admin Road, Liverpool			Drawing title: Phase 1 Habitat Plan	



Environmental Engineering Partnership Ltd
Manchester Office
Taylor Road, Urmston M41 7JQ
Tel: 0161 707 9612
Email: info@e3p.co.uk
Website: www.e3p.co.uk

The client must not amend any drawing, design or other intellectual property produced by E3P Ltd without permission in writing from E3P Ltd in advance of any amendments being made. In the event that such written permission is not obtained in advance of the amendments being made, E3P Ltd shall not be liable for any damage and/or losses occurring as a result of the amended drawing, design or intellectual property.

