



Preliminary Ecological Appraisal Report

Acornfield Phase 2, Knowsley Industrial Estate

Reference: 81-377-R2-1

Date: 16th August 2023



PRELIMINARY ECOLOGICAL APPRAISAL REPORT

Acornfield Phase 2
Knowsley Industrial Estate

Prepared for:
Prime Property Consultancy

Report Ref: 81-377-R2-1
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EXECUTIVE SUMMARY

Site Address	Acornfield Road, Knowsley Industrial Estate, L33 7BJ.
Coordinates	E 343648, N 398600
Site Area	Approximately 0.6 ha
Current Site Use and Adjacent Site Use	The site comprised shipping containers, hardstanding, scattered scrub, dense scrub, scattered trees and treelines. The site was located in the north-east of Knowsley Industrial Estate. The site is currently in use as a wooden pallet yard. Adjacent areas comprised industrial units, roads and public open spaces.
Designated Sites	The site is located within 1 km of three Sites of Biological Importance (SBIs); Charley Wood SBI, which is located approximately 115 m south-east of the site, Acornfield Plantation SBI and LNR, which is located approximately 565 m south of the site, and Kirkby Brook, Northwood SBI, which is located approximately 920 m north-west of the site. These SBIs are expected to form foraging, commuting and resting habitats for birds and bats within the trees present. The site is not located within the Impact Risk Zone of any Site of Special Scientific Interest (SSSI).
Survey Results	The site was found to comprise shipping containers, hardstanding, scrub, scattered trees and lines of tree. The site was found to have the following potential ecological constraints: ✿ Potential presence of nesting birds within the dense scrub, scattered scrub, scattered trees and tree lines. ✿ Potential presence of badgers on-site and within the local area. ✿ Potential presence of common amphibians on-site and within the local area. ✿ Potential presence of hedgehogs on-site and within the local area. ✿ Two invasive non-native species, Himalayan cotoneaster and rhododendron, was identified on-site. Field horsetail was also identified on site.
Conclusions	The following mitigation is recommended: ✿ Updated badger walkover prior to start of works. ✿ Common amphibians are to be removed by hand from the working area during construction. ✿ A lighting strategy is recommended for the habitats to be retained.



- ✳ Construction works and vegetation clearance should be conducted 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 no more than 24 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.
- ✳ Eradication of invasive species prior to works commencing on-site. It is recommended that an invasive species walkover be undertaken prior to the commencement of construction and landscaping works.
- ✳ During site clearance, any scrub should be strimmed to 50 cm and checked for hedgehog prior to removal. Tree bases should be checked for hedgehog prior to removal. It is recommended that vegetation clearance takes place outside of December – March (inclusive) to avoid impacting hibernating hedgehogs.

The scheme should strive to achieve a 10% gain in biodiversity. In line with The Environment Act 2021, this will be a mandatory requirement from November 2023. Full details of this and a calculation of net gain could be finalised after detailed landscape plans have been prepared. It is recommended that an ecologist is consulted during the design stage to ensure, where possible, biodiversity net gain can be achieved. If a net gain cannot be achieved on-site, a conservation payment or off-site compensation may be required.



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1. INTRODUCTION

1.1. BACKGROUND

E3P were instructed by Prime Property Consultancy to undertake a Preliminary Ecological Appraisal at Acornfield Road, Knowsley Industrial Park, hereafter referred to as “the site”.

This report has been produced by Conor Evans BSc (Hons) MRes QCIEEM, Consultant Ecologist at E3P. Conor has experience undertaking Preliminary Ecological Appraisals and ecological mitigation for a variety of projects across the UK. Conor also holds a Class 1 Great Crested Newt Natural England licence.

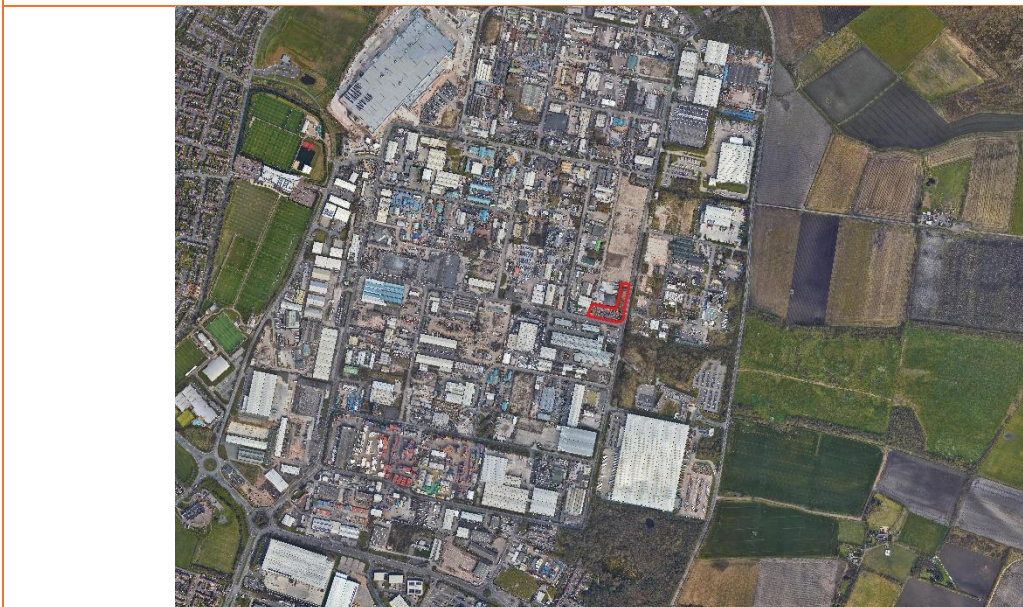
1.2. PROPOSED DEVELOPMENT

Development proposals include the construction of two new industrial units with ancillary office space, new accesses, hard and soft landscaping, and associated works.

1.3. SITE LOCATION

The site is located in the north-east of Knowsley Industrial Park, within a predominantly industrial area. Access to the site is gained via Kirkby Bank Road, which enters the site to the south, and Acornfield Road, which enters the site the east. The wider landscape is comprised of agricultural fields, residential and commercial buildings. The site is located approximately 2.8 km north-east of the M57. Spinney Woods, an acorn field plantation, is located approximately 555 m south of the site. 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, accessed August 2023.
- ✿ Aerial mapping and ordnance survey maps.
- ✿ Local data records, including Merseyside BioBank (MBB) (received 01st August 2023).

A 1 km search area was utilised for the data search as this was the standard search area available from the local environmental records centre.

The data search included the 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 Conor Evans on 26th July 2023. The weather was dry, still and clear.

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 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 Conor Evans on 26th July 2023.

The survey involved undertaking a systematic search of the structures on site, 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 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
NEGLECTIBLE	A structure or tree with no potential roosting features present .
LOW	A structure or tree 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.

This survey was undertaken in July and as a result of differing flowering times between species, it is possible that some species of flora may have been missed or misidentified. It is possible that some invasive/non-native species could have been missed during the survey.

Access to all areas within 30 m of the site to search for badger field signs was not possible due to such areas being on private land, therefore, some features may have been missed.

Due to the large number of pallets, it was not possible to fully survey the site, and it is therefore possible that some features may have been missed during the survey.

These constraints have been taken into consideration during the assessment.



3. SURVEY RESULTS

3.1. SITE CONTEXT

The site is located at the junction between Kirkby Bank Road and Acornfield Road. The site comprised shipping containers, hardstanding, mixed scrub, and scattered trees. The site is currently in use as a pallet scrapyard.

The habitats directly adjacent to the site are dominated by hardstanding and industrial buildings, and also include broadleaved woodland, scattered trees and low-value amenity grassland. The majority of habitats adjacent to site will offer limited opportunities for local fauna, however, the broadleaved woodland will be a valuable resource for local fauna.

A waterbody, within an area of isolated deciduous woodland, is located approximately 610 m south-east of the site. The waterbody may form a commuting and foraging resource for a variety of bats and birds.

Multiple agricultural fields are present within 1 km of the site, the closest of which is located approximately 370 m east of the site. These fields are expected to offer limited opportunities for local fauna.

There are two areas of lowland fen and reedbeds within 1 km of the site, the closest of which is located approximately 700 m south-east of the site. These areas of lowland fen are anticipated to form foraging, commuting and resting habitat for a variety of birds and amphibians.

Several areas of isolated deciduous woodland, a Priority Habitat, are present within 1 km of the site, the closest of which is located approximately 160 m south-east of the site. These areas of woodland are anticipated to form foraging, commuting and resting habitat for a variety of local wildlife, as well as nesting and roosting habitats for birds and bats within the trees present.

Acornfield Road, which is located directly adjacent to the east of the site, runs along several areas of isolated deciduous woodland. This road may form an important commuting resource for a range of species, such as bats and birds, between these areas of isolated deciduous woodland.

No waterbodies are located within 250 m of site.

3.2. DESIGNATED SITES

The site is located within 1 km of 1 Local Nature Reserve (LNR) and 3 Sites of Biological Importance (SBIs). Acornfield Plantation LNR and SBI, which is located approximately 565 m south of the site, is designated for its mature/over-mature broadleaved woodland of sycamore (*Acer pseudoplatanus*), oak (*Quercus robur*) and birch (*Betula pendula*) with a unique mire basin dominated by sphagnum moss (*Sphagnum* sp.) and soft rush (*Juncus effusus*), which provides habitat for breeding damselflies and dragonflies. Other habitats include stream, pond, drainage channels, neutral and acid grasslands, rhododendron (*Rhododendron ponticum*) and bracken thickets. Charley Wood SBI, which is located approximately 115 m south-east of the site, is designated for its woodland which is dominated by broadleaf trees on acid peat soils, the variation in shrub and tree cover resulting in large glades, thriving rhododendron, and its invertebrate population is of high interest. Kirkby Brook, Northwood SBI, which is located approximately 920 m north-west of the site, is designated for its open water course which provides good habitat for water voles.



There will not be any impact on the LNR or SBIs as a result of the development due to the distance of the proposed development to these protected sites and can therefore be ruled out of further assessment. There are no Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites within a 2 km radius of the site, and can therefore be ruled out of further assessment. The site is not located within the Impact Risk Zone of any Site of Special Scientific Interest (SSSI).

3.3. HABITATS

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

3.3.1. STRUCTURES

There were 4 shipping containers located on-site, one of which was currently in use as an office. The remaining shipping containers were in use as a makeshift workshop.

PLATE 1 SHOWING SHIPPING CONTAINERS



3.3.2. HARDSTANDING

The majority of the site comprised hardstanding. The hardstanding had been colonised in areas by flora comprising butterfly-bush (*Buddleja davidii*), creeping thistle (*Cirsium arvense*), bramble (*Rubus fruticosus* agg.), goat willow saplings (*Salix caprea*), common ragwort (*Jacobaea vulgaris*), Oxford ragwort (*Senecio squalidus*), rosebay willowherb (*Chamaenerion angustifolium*), herb Robert (*Geranium robertianum*), common dandelion (*Taraxacum officinale*) and common nettle (*Urtica dioica*).



PLATE 2 SHOWING HARDSTANDING



3.3.3. **SCATTERED SCRUB**

Several patches of scrub were present across the site, predominantly around the site boundary. Species comprised common nettle, rosebay willowherb, herb Robert, common dandelion, creeping thistle, bramble, hedge bindweed (*Convolvulus arvensis*), broad-leaved dock (*Rumex obtusifolius*), false oat-grass (*Arrhenatherum elatius*), common fleabane (*Pulicaria dysenterica*), long-headed poppy (*Papaver dubium*), honeysuckle (*Lonicera periclymenum*), garlic mustard (*Allaria petiolata*) and mayweed sp. (*Matricaria* sp.).



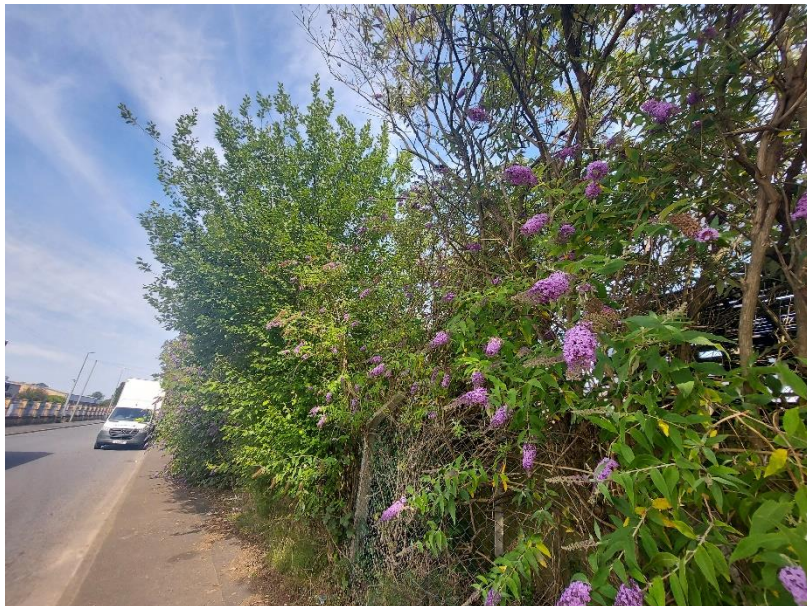
PLATE 3 SHOWING SCATTERED SCRUB



3.3.4. DENSE SCRUB

An area of dense scrub was located along the southern boundary of the site. Species comprised butterfly-bush, bramble, goat willow, Himalayan cotoneaster (*Cotoneaster simonsii*), field horsetail (*Equisetum arvense*), rhododendron (*Rhododendron ponticum*) and cherry laurel (*Prunus laurocerasus*).

PLATE 4 SHOWING DENSE SCRUB



3.3.5. SCATTERED TREES

A total of 22 scattered trees were located across the site, associated with the fenceline along the site boundary. Species comprised goat willow, elder (*Sambucus nigra*), ash (*Fraxinus excelsior*), silver birch (*Betula pendula*) and sycamore (*Acer psuedoplatanus*).

PLATE 5 SHOWING SCATTERED TREE



3.3.6. TREELINES

Two treelines (TL1 and TL2) were present on site. Please see Table 3.1 for a summary of these treelines.

TREELINE NUMBER	DESCRIPTION	PHOTOGRAPH
TL1	TL1 extended along the northern end of the eastern site boundary and comprised sycamore.	



TREELINE NUMBER	DESCRIPTION	PHOTOGRAPH
TL2	TL2 extended along the southern end of the eastern site boundary and comprised Leyland cypress (<i>Cupressus x leylandii</i>).	

3.4. PROTECTED AND NOTABLE SPECIES

3.4.1. AMPHIBIANS

Consultation with MBB identified records of great crested newt (*Triturus cristatus*) and common amphibian within the 1 km search area. The nearest record of great crested newt was located approximately 215 m north-east of the site and was associated with an area of grassland. The nearest record of common amphibian was a common frog (*Rana temporaria*), which was located approximately 650 m south-east of the site and associated with an area of woodland adjacent to a pond.

Consultation with MAGIC did not identify any great crested newt European Protected Species Licences within the 1 km search area. The nearest licence was located approximately 5.9 km south-east of the site, which was active between 2017 and 2018 for the destruction of a great crested newt resting place.

A pond is located approximately 650 m south-east of the site, within Spinney Wood SBI. The pond is separated from the site by a series of roads and industrial units. 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). Considering this, the presence of great crested newts on-site is reasonably discounted due to the distance and barriers between the pond and the site.

The site had limited potential to support common amphibians during their breeding phase as no waterbodies were located on site. Both the dense and scattered scrub may provide cover for common amphibians within their terrestrial phase, although suitability is limited.

Overall, the site has limited ecological value to support common amphibians during their breeding phase; however, the site can provide cover for common amphibians within both the dense and scattered scrub.

3.4.2. BATS

Consultation with MBB identified numerous records of bat within 1 km of the site, including records of myotis species (*Myotis* sp.), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus*



pygmaeus) and noctule bat (*Nyctalus noctula*). The nearest record, for a common pipistrelle, soprano pipistrelle, noctule bat and myotis bat, was located approximately 220 m north-east of the site along Acornfield Road.

Consultation with MAGIC did not identify any Natural England Bat Mitigation Licences within the 1 km search area. The nearest such licence was located approximately 3.9 km south-west of the site. The licence was active between 2011 and 2016 for the destruction of a common pipistrelle resting site.

A total of four shipping containers and 38 trees were located within the site boundary and were assessed for their suitability to support roosting bats, as detailed in Collins (2016). All four shipping containers were assessed as having Negligible potential to support roosting bats due to a lack of suitable features, and all 38 trees were assessed as Negligible to support roosting bats due to a lack of suitable features, as well as the small size of the goat willow, sycamore, silver birch, ash and elder, and the density of the Leyland cypress.

The scattered trees within the site are expected to attract invertebrate prey. Overall the site itself is anticipated to have limited foraging value for bats as it largely comprises hardstanding. The site does offer linear commuting opportunities for local bats through the lines of tree; however, there is limited connectivity to habitats of greater value. The wider landscape, including Charley Wood SBI and Acornfield Plantation LNR and SBI, are expected to offer high foraging and commuting opportunities for bats. Therefore, bats are anticipated to utilise these areas over the site.

3.4.3. BADGER

Consultation with MBB did not identify any records of badger within the 1 km search area. No badger setts or field signs of badger were located on-site or within 30 m of the site boundary where access was possible.

The site is assessed as having limited suitability for badger as sett building opportunities are restricted due to the large areas of hardstanding. Badger may be present within the area of woodland south-east of the site.

3.4.4. OTHER TERRESTRIAL MAMMALS

Consultation with MBB identified ten records of European hedgehog (*Erinaceus europaeus*) within the 1 km search area. The nearest such record was located approximately 400 m north-west of the site, in a commercial unit car park.

The site was assessed as having limited suitability for hedgehogs due to the majority of the site comprising hardstanding. Hedgehog may be present on-site within the areas of scrub which may provide suitable cover, as well as within the area of woodland south-east of the site.

No records of brown hare (*Lepus europaeus*) were identified within the 1 km search area. Due to the lack of suitable habitat and the urban location of the site, brown hare are reasonably discounted from the site.

3.4.5. OTTER AND WATER VOLE

Consultation with MBB did not identify any records of otter or water vole within the 1 km search area.



No watercourses are present within or adjacent to the site boundary. The nearest watercourse, Kirkby Brook, is located approximately 920 m north-west of the site. The watercourse is separated from the site by roads and industrial units. Therefore, otter and water vole are discounted from further assessment.

3.4.6. BREEDING BIRDS

Consultation with MBB did not identify any records of protected bird species within the 1 km search area.

During the survey, great tit (*Parus major*) were identified within a patch of scrub, and house martin (*Delichon urbicum*) were identified flying within the site boundary. Woodpigeon (*Columba palumbus*), herring gull (*Larus argentatus*), common gull (*Larus canus*) and lesser black-backed gull (*Larus fuscus*) were identified within the wider area. Common and notable bird species are anticipated to be present on-site and there is potential to support nesting birds within the scrub and trees present. The site is assessed as having negligible value for ground-nesting birds due to a lack of available habitat.

3.4.7. REPTILES

Consultation with MBB did not identify any records of reptiles within the 1 km search area.

The site largely comprises hardstanding which offers few opportunities for the species. As the site is also isolated from good quality habitat, the site is unlikely to support a population of reptiles due to the urban nature of the site and lack of suitable habitat. Therefore, reptiles are discounted from further assessment.

3.4.8. INVERTEBRATES

The data search did not identify any records of notable invertebrates within the 1 km search area.

Overall, the presence of notable and/or protected invertebrates within the site is reasonably discounted due to a lack of good quality habitat that would support such species.

3.5. INVASIVE PLANT SPECIES

Consultation with MBB identified records of Himalayan balsam, rhododendron and three-cornered garlic (*Allium triquetrum*). The nearest such record, for three-cornered garlic, was located approximately 620 m south-east of the site.

Rhododendron and Himalayan cotoneaster was identified on site during the survey within the patch of dense scrub along the southern border of the site. Field horsetail was also identified.



4. ECOLOGICAL CONSTRAINTS AND MITIGATION

4.1. DEVELOPMENT PROPOSALS

Development proposals include the construction of two new industrial units with ancillary office space, new accesses, hard and soft landscaping, and associated works.

4.2. HABITATS

The site comprises habitats that were found to be widespread within the local area. The site offers value for local wildlife within the scattered trees, line of trees, dense scrub and scattered scrub.

4.2.1. SCATTERED TREES/TREELINES

It is recommended that, where possible, the on-site trees are retained and protected throughout the development. It is anticipated that some areas may require removal, and where this is needed, the trees should be replaced as soon as practicable. Any replacement planting should endeavour to be on the same aspect as that to be lost.

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 or shrubs 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 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.

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



4.3. PROTECTED AND NOTABLE SPECIES

4.3.1. AMPHIBIANS

The site may support small numbers of common amphibians within the scrub habitat on-site. It is recommended that during the clearance phase of works, any common amphibians encountered be moved by hand, away from construction activities.

4.3.2. BREEDING BIRDS

The site itself was assessed as having limited value for common and notable species. However, the scattered scrub, dense scrub, scattered trees and line of trees have potential to support nesting birds. Due to the nature of works, the proposed development could impact nesting birds.

It is recommended that construction and landscaping works take place outside of the breeding bird season (March – September inclusive). If this is not possible, then a suitably qualified ecologist should inspect the area no more than 24 hours prior to the commencement of construction works. Should any nests, or nests in construction be located, a suitable stand-off distance should be maintained until the young have fledged. The ecologist will advise on a suitable stand off and provide a toolbox talk to all site contractors regarding their working limits and legal implications.

Post-development, bird boxes could be installed to enhance the site's value for the species group.

4.3.3. BATS

The site itself was found to have limited foraging value for bats as the site predominantly comprises hardstanding. Furthermore, due to the lack of habitat connectivity to the wider landscape, the site does not offer valuable commuting opportunities. The treelines and scattered trees are anticipated to be of highest importance for local bat species.

It is therefore recommended that a proposed lighting plan considers the habitats of highest importance and maintains the treelines and scattered trees as dark areas. It is recommended that any security lighting during construction is appropriately placed to avoid being directed at retained habitats.

It is recommended that lighting is to be pre-fixed on the proposed buildings, located near retained habitats or proposed habitats, to minimise the impact of lighting. 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. Bat boxes could be installed throughout the site post-construction to enhance the site for the species group.

4.3.4. BADGERS

No badger setts were located during the survey, with the habitats identified on site being identified as unsuitable for the species. However, badgers are highly mobile and can create new setts in a short period of time.



In the unlikely event that a badger sett is located, a stand-off distance may be required as well as precautionary working methods. If the sett requires closure, a Natural England Badger Licence would be required. Please note that badger licences can only be obtained between July and November each year to avoid potential impact on pregnant females.

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 significant negative impact on badgers within the local area.

4.3.5. HEDGEHOGS

Hedgehogs are anticipated to be present within the areas of dense and scattered scrub. During vegetation clearance, vegetation should be strimmed to 50 cm and checked for hedgehog prior to clearing to ground level. The base of trees which are to be removed should be checked prior to removal for sheltering hedgehogs. It is recommended that vegetation clearance takes place outside of December to March (inclusive) to avoid impacting hibernating hedgehogs. If hedgehogs are located, they should be moved carefully moved by hand to an area outside of construction workings.

Post development, a series of hedgehog houses could be installed throughout the site to enhance the site's value for the species group.

4.3.6. INVASIVE PLANT SPECIES

Rhododendron and Himalayan cotoneaster were identified during the site walkover. As such, it is recommended that prior to the development, the species should be eradicated following the most current guidance set out by the Environment Agency. This is to be carried out by a suitably qualified Environment Agency contractor.

Field horsetail was also identified during the survey, and it is recommended that this be 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.



It is recommended that an invasive species walkover of the site be conducted prior to the commencement of construction to ensure that invasive species have been eradicated from the site. It is recommended that the invasive species walkover be conducted once the wooden pallets have been removed from site.



5. BIODIVERSITY NET GAIN

The scheme should strive to achieve a 10% in biodiversity net gain. In line with The Environment Act 2021, this will be a mandatory requirement from November 2023. Full details of this and a calculation of net gain could be finalised after detailed landscape plans have been prepared. It is recommended that an ecologist is consulted during the design stage to ensure, where possible, biodiversity net gain can be achieved. The following habitat measures will increase the on-site biodiversity:

-  Retain scattered trees and treelines where possible.
-  Native hedgerow planting.
-  Native tree planting.
-  Native scrub planting.

A 30-year management plan should be produced to ensure biodiversity is secured on-site.



6. REFERENCES

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- ✿ 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.
- ✿ Environment Act (2021). Chapter 3, Part 6 of the Environment Act 2021.
- ✿ 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.
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END OF REPORT



APPENDIX I

PHASE 1 HABITAT PLAN



Key:

- Boundary
- Tree line
- Scattered trees
- Scattered scrub
- Dense scrub
- Structures
- Hardstanding

Notes

Issue: 1	Revision: 1	Date: 09/08/2023	Drawn: CE	Authorised: CB
Client: Prime Property Consultancy			Job No. 81-377	Date: 09/08/2023
			Drawing No. 001	Scale: 1:1200 @ A4
Job title: Acornfield Phase 2, Knowsley Industrial Estate			Drawing title: Phase 1 Habitat Plan	



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