



Network Space

LAND OFF FARADAY ROAD

Phase 1 Validation Update



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1. INTRODUCTION

1.1. Project Background

- 1.1.1. WSP UK Ltd (WSP) was commissioned in January 2023, by Network Space, to undertake a Phase 1 habitat validation survey, Preliminary Bat Roost Assessment (PBRA) and protected species assessment of land proposed for development; updating and validating previous survey data. Previously a larger extent was considered for development at the same location, whereas the new boundary encompassed a reduced area. Development will allow storage of operational vehicles and will comprise resurfacing, ancillary parking, and ancillary infrastructure at Faraday Road, Knowsley (hereby referred to as 'the Proposed Development'). The area for Proposed Development, hereafter the 'Site', is approximately 2.4 hectares in size and is located at central OS Grid Reference: SJ 42904 97169. The Site is illustrated in **Figure 1 - Site Location Plan**.

1.2. Ecological Background

- 1.2.1. A Preliminary Ecological Appraisal (PEA), comprising a desk study and extended Phase 1 habitat survey, was previously undertaken by WSP on 13 July 2020 to inform a Planning Application for development of the Site, comprising a larger boundary than is assessed in this report (WSP, 2020). The 2020 PEA can be found in **Appendix D**.
- 1.2.2. The 2020 desk study identified two statutory designated nature conservation sites within 2km of the central Grid Reference of the Site, the closest of which was Acornfield Plantation Local Nature Reserve (LNR), located 700m north-east. Eight non-statutory designated nature conservation sites were also located within 2km of the central Grid Reference; the closest being Otis Meadow LNR, located 80m west.
- 1.2.3. Recorded habitats on Site in 2020 included; a mosaic of species poor, semi-improved grassland with areas of scattered and dense scrub, and tall ruderal species. Immature broadleaved trees were present along the southern and eastern boundary of the Site and a dry pond (herby referred to as Pond 1) was recorded at SJ 42979 97128.

1.3. Scope of Report

- 1.3.1. This report provides an updated ecological baseline for the Site to that undertaken in 2020, determines any changes to land-use and habitat types following the previous survey, and determines whether legally protected and/or notable species or habitats were present or were likely to be present which could pose a constraint to the Proposed Development.

2. METHODS

2.1. Overview

- 2.1.1. This assessment has been prepared with reference to current good practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2017 and 2018), and Joint Nature Conservation Committee (JNCC, 2010); and guidance contained in the British Standard - Code of Practice for Biodiversity and Development BS42020:2013 (British Standards Institute (2013)).

2.2. Desk Study

- 2.2.1. A desk study was previously undertaken in July 2020, and this data has been referenced within this report. This included a review of ecological baseline information available in the public domain, and a review of information held by relevant third parties; all radii around the Site are measured from the central Grid Reference (SJ 42904 97169) which was considered appropriate given the scale of the Site itself. To provide the baseline data for the desk study, the following information was requested from Merseyside Biobank:
- Records of legally protected and notable species within 2km of the Site;
 - Bat records within 5km of the Site; and
 - Records of non-statutory sites designated for nature conservation value within 2km of the Site.
- 2.2.2. Freely downloadable datasets (available from Natural England) were consulted for information regarding the presence of statutory designated habitat¹ within 2km of the Site. This was extended to 10km from the Site in search of the presence of European or international designed sites². Freely downloadable datasets (available from Natural England) were consulted for information regarding Habitats of Principal Importance (HPI)³ within 1km and woodland listed on the Ancient Woodland Inventory⁴.

¹ Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and Local Nature Reserves (LNR).

² Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar.

³ Mapped locations of HPI are usually not available, but HPI aligns in the most part with UKBAP habitats. Inventories of UKBAP habitat have been prepared by a variety of organisations and at a national (Natural England priority habitat inventory) and local scale (e.g. by local records centres). In some instances these are primarily based on aerial photograph analysis rather than field survey.

⁴ The ancient woodland inventory in England lists areas over two hectares in size which have been continuously wooded since at least 1600.

- 2.2.3. In addition, open source 1:25,000 Ordnance Survey mapping was used to identify any mapped water bodies and watercourses within 250m of the Site.

2.3. Ecological Walkover

- 2.3.1. A Phase 1 habitat validation survey of the Site was undertaken on 18 January 2023. The survey covered the Site, including boundary features, where access was possible. Several areas in the east of the Site could not be accessed due to health and safety constraints caused by dense gorse scrub. These areas are identified in **Figure 3 - Habitat Validation Survey Results**, and further details are provided in **Section 2.5**. The extended Phase 1 habitat validation survey was carried out by an Associate member of CIEEM who is competent in surveys of sites containing similar habitat types.
- 2.3.2. Habitats were described and mapped following the standard Phase 1 habitat survey methodology (JNCC, 2010). Phase 1 habitat survey is a standard technique for classifying and mapping British habitats. Important or characteristic plant species are recorded, and habitats are classified according to their vegetation types. Where appropriate consideration was given to whether habitats qualify, or could qualify, as a Habitat of Principal Importance (HPI) following habitat descriptions published by the Joint Nature Conservation Committee (JNCC, 2008). Habitats were marked on a paper base map and were subsequently digitised using a Geographical Information System (GIS).
- 2.3.3. Target notes were made to provide information on specific features of ecological interest (e.g. a badger *Meles meles* sett) or habitat features too small to be mapped. These are included in **Appendix C**.
- 2.3.4. Any invasive non-native plant species listed on Schedule 9 of the WCA 1981 (as amended) and Part 2 of the Invasive Alien Species (Enforcement and Permitting Order) Order 2019, which were evident during the Phase 1 habitat validation survey were also target noted. Detailed mapping of such species or a full survey of the Site for all invasive plant species is beyond the scope of this commission.

2.4. Protected Species Assessment

- 2.4.1. The potential for the Site to support legally protected and notable species was assessed using the desk study results and combined with field observations during the Phase 1 habitat validation survey. The assessment of habitat suitability for protected and notable species was based on professional experience and judgement. This was supplemented by standard sources of guidance on habitat suitability assessment for key faunal groups including: great crested newt *Triturus cristatus* (Gent and Gibson, 2003 and English Nature, 2001); reptiles (Froglife, 1999 and Gent and Gibson, 2003); bats (Collins, 2016 and Mitchell-Jones, 2004); badger (Harris et al, 1991 and Roper, 2010); otter *Lutra lutra* (Chanin, 2003) and water vole *Arvicola amphibius* (Dean et al, 2016).
- 2.4.2. Any ponds present on, in close proximity to Site underwent a Habitat Suitability Index (HSI), in order to evaluate their suitability to support Great Crested Newt (GCN). HSI is a means of

evaluating habitat quality and quantity utilising a numerical index between 0 and 1 of ten key factors known to influence the potential of a waterbody to support GCN. HSI assessment was conducted whilst on Site with surveyors observing waterbodies and surrounding terrestrial habitat and scoring against the following factors in line with relevant guidance (Oldham et al, 2000):

- Geographic location;
- Waterbody area;
- Waterbody permanence;
- Water quality;
- Presence and extent of waterbody shading;
- Presence of waterfowl;
- Presence of fish;
- Presence of additional waterbodies within 1km;
- Quality of terrestrial habitat; and
- Presence of macrophytes.

2.4.3. All trees were categorised in line with best practice guidance, from the Bat Conservation Trust (BCT) (Collins, 2016). Trees were categorised in line with the descriptions in **Table 1 - Roost Potential Categorisation**. No buildings or structures were present on Site.

Table 1 - Roost Potential Categorisation

Category	Description
Confirmed	Building or tree with features confirmed to be used by roosting bats either by historic records (verified appropriately), or evidence recorded during survey.
High	Building or tree with highly suitable features capable of supporting larger roosts, and/or multiple roost locations. Generally, these buildings or trees are located in proximity to highly suitable foraging/commuting habitat such that the presence of a roost is considered highly probable.
Moderate	Building or tree exhibiting features with definite bat roost potential, but with only one or two suitable features suitable for larger roosts, or multiple features with the potential to be used by individual/small numbers of bats. Surrounding area includes good quality foraging habitat for bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland such that the presence of a roost is considered probable.
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 habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Negligible	Building or tree with no potential opportunities for roosting bats, or very few or minor features in an isolated/unsuitable location such that the presence of a roost is considered highly improbable. e.g. isolated from suitable foraging or commuting habitats.

2.5. Notes and Limitations

2.5.1. Every effort has been made to provide a comprehensive description of the Site; however, the following specific limitations apply to this assessment:

- Ecological survey data is typically valid for up to two years unless otherwise specified, for example if conditions are likely to change more quickly due to ecological processes or anticipated changes in management.
- Records held by local biological record centres and local recording groups are generally collected on a voluntary basis; therefore, the absence of records does not demonstrate the absence of species, it may simply indicate a gap in recording coverage.
- The survey was conducted over a single day and therefore presents a snapshot in time of the flora and fauna potentially present within the Site. As such, the assessment may not have identified those species which occupy the area on a seasonal or sporadic basis.
- The Phase 1 habitat validation survey was not completed during the optimal survey season for Phase 1 habitat survey, generally accepted to be from April to September (inclusive). Due to the temperature at time of and prior to the survey, snow on the ground and frozen waterbodies limited access to areas within the Site and reduced the surveyor's ability to identify species. However, it is considered that sufficient information was gathered to enable an assessment of the habitat types present, in line with standard Phase 1 habitat categories and the potential for these to support protected or notable species; this is not considered to pose a constraint to the conclusions in this report.
- A number of locations within the Site could not be accessed due to, health and safety concerns or dense scrub. Inaccessible areas were predominantly located to the northeast of the Site, as shown on **Figure 3 -Habitat Validation Survey Results**. Where access was not possible, the 2020 survey data was used to identify habitats and this limitation is not considered to pose a constraint to the conclusions in this report.
- The extended Phase 1 habitat map (**Figure 3 - Habitat Validation Survey Results**) has been reproduced from field notes and plans. Whilst this provides a sufficient level of detail to fulfil the requirements of a PEA, the maps are not intended to provide exact locations of key habitats.

3. RESULTS

3.1. Desk Study Results

- 3.1.1. The 2020 desk study reported that no European or international designated nature conservation sites were located within 10km of the Site central Grid Reference . However, two statutory designated nature conservation sites within 2km of the centre of the Site central grid reference were identified. These sites comprised Acornfield Plantation LNR and Croxteth LNR; the closest of which was Acornfield Plantation LNR located 700m north-east. These sites are illustrated in **Figure 2 - Designated Sites**.
- 3.1.2. The 2020 desk study also identified eight non-statutory designated nature conservation sites within 2km of the centre of the Site central grid reference. The closest of these was Otis Meadow Local Wildlife Site (LWS), located approximately 80m west.
- 3.1.3. There were no known areas of Ancient Woodland located within 1km of the Site central grid reference.
- 3.1.4. Several parcels of HPI broadleaved deciduous woodland were located within 1km, the closest of these lay immediately adjacent to the north-eastern boundary of the Site.

3.2. Field Survey

- 3.2.1. Five Phase 1 habitat types were identified within the Site. A description of the dominant and notable species of each habitat type is summarised below and mapped on **Figure 3 - Habitat Validation Survey Results**, photographs of the habitats can be found in **Appendix A**. Alpha-numeric codes used in this section cross-refer to the JNCC Phase 1 habitat survey classification (JNCC, 2010). The order of the habitat descriptions below reflects their ordering in the Phase 1 habitat survey manual and does not reflect habitat value or importance. Relative plant species abundance was estimated using the DAFOR scale⁵. The scientific names for plant species follow those in the New Flora of the British Isles (Stace, 2019). It should be noted that metal palisade fencing that was recorded running centrally through the Site in 2020 had been removed at the time of the Phase 1 habitat validation survey. Additional habitat changes are noted below.

⁵ The DAFOR scale has been used to estimate the frequency and cover of the different plant species as follows: Dominant (D) - >75% cover, Abundant (A) – 51-75% cover, Frequent (F) – 26-50% cover, Occasional (O) – 11-25% cover, Rare (R) – 1-10% cover., The term 'Locally' (L) is also used where the frequency and distribution of a species are patchy and 'Edge' (E) is also used where a species only occurs on the edge of a habitat type.

A2.1 Scrub - dense/continuous

- 3.2.2. Areas of dense scrub were recorded in the east of Site. Vehicle tracks through scrub were present in multiple locations. The scrub was dominated by gorse *Ulex europaeus*, with occasional broom *Cytisus scoparius*, bramble *Rubus fruticosus* agg. and willow sp *Salix* sp.

A2.2 Scrub - scattered

- 3.2.3. Small areas of scattered scrub, including immature willow *Salix* sp., were present in the southeast and north of the Site. Previously recorded patches of emergent willow and tall ruderal vegetation in the northwest of the Site had since been removed. Previously recorded brash, log and rubble piles had also been removed in this area.

G1 Standing water

- 3.2.4. A previously unidentified pond (Pond 2) was recorded just beyond the eastern boundary of the Site, at grid reference SJ 43036 97176. This pond was full of leaf litter and very turbid, Oak *Quercus* sp and rhododendron *Rhododendron* sp were present along the eastern margins of the pond, but otherwise the edge was free of vegetation and open. A HSI assessment was undertaken for Pond 2 and it was assessed as poor for its suitability to support GCN; details of the HSI are available in **Appendix B**. Pond 2 is connected to a wet ditch along its south-west bank, described below in paragraph 3.2.7.
- 3.2.5. A previously recorded dry pond (Pond 1) was not able to be surveyed due to dense scrub preventing access; therefore based on 2020 survey data it was mapped as **TN1** on **Figure 3- Habitat Validation Survey Results**. This pond is no longer located within the Site boundary.

G2 Running water

- 3.2.6. A shallow, wet ditch was recorded running northeast to southwest through the Site and connected to the Pond 2. The wetted channel depth varied between 5-10cm along length of the ditch, which in 2020 was recorded to have been recently excavated. Occasional willowherb *Chamaenerion* sp and rush *Juncus* sp were present within the channel.

J4 Bare ground

- 3.2.7. Large areas of bare ground were recorded in the west of the Site. These areas had previously been classified in 2020 as a combination of poor semi-improved grassland and tall ruderal; however, due to localised machinery use were subsequently largely devoid of vegetation. Small patches of poor semi-improved grassland still remained within the area of Bare ground to the west, as shown by **TN3** on **Figure 3- Habitat Validation Survey Results**.

3.3. Protected and Notable Species Assessment

- 3.3.1. The potential for the Site and its immediate surroundings to support legally protected and/or notable species and habitats has been assessed using the results of the 2020 desk study

and observations made during the Phase 1 habitat validation survey. The Site was found to have the potential to support the following:

Bats

- 3.3.2. All species of bats recorded within the UK are protected from killing, injury and disturbance⁶, and their roosts protected from damage or destruction under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Protection is also afforded under the Wildlife and Countryside Act (WAC) 1981 (as amended) with respect to disturbance of individuals occupying places of rest or shelter and obstruction of access to these.
- 3.3.3. The 2020 desk study returned 35 records of bats within 2km of the Site central grid reference. The closest of which pertained to an unidentified bat species feeding, located 110m north. The closest record of a confirmed roost was located 2km to the south of the Site central grid reference and was associated with a common pipistrelle roost. No granted European Protected Species Licenses were recorded within 2km of the Site central grid reference.
- 3.3.4. Scattered broadleaved trees within the Site and present beyond the southern and eastern boundaries of the Site were all assessed to have negligible potential for roosting bats, with no visible Potential Roost Features (PRF).
- 3.3.5. Suitable foraging and commuting habitat was present within scrub habitats bordering woodland to the east the Site. Recommendations are therefore provided with regard to this within **Section 4** of this report.

Birds

- 3.3.6. All wild birds, their nests and eggs are afforded protection under Part 1 of the WAC (as amended).
- 3.3.7. The 2020 desk study returned no relevant records of birds, within 2km of the Site central grid reference.
- 3.3.8. Extensive areas of scrub within the Site had the potential to provide suitable nesting habitat for common bird species during the breeding season. Further recommendations are provided within **Section 4** of this report.

Water vole

- 3.3.9. The 2020 desk study returned four records of water vole within 2km of the Site central grid reference, the closest located 900m south-west in a watercourse not hydrologically linked to

⁶ Disturbance is defined within the Habitats Regulations as that which is likely to impair a species ability to survive, breed or reproduce, hibernate or migrate or to significantly affect the local distribution or abundance of the species.

those recorded within the Site. No evidence of water vole was recorded during the field survey.

- 3.3.10. One ditch was present within the Site, but contained less than 10cm depth of water at the time of survey despite preceding wet weather. Therefore, it was assessed as unsuitable to support water vole; as such water vole are not considered further within this report.

Amphibians

- 3.3.11. Great crested newt (GCN) are protected from killing, injury and disturbance and their places of rest or shelter (occupied habitat) protected from damage or destruction under the Habitats Regulations and Conservation of Habitats and Species Regulations (EU Exit) 2019. Protection is also afforded under the Wildlife and Countryside Act 1981 (as amended) with respect to disturbance⁷ of individuals occupying places of rest or shelter and obstruction of access to these. Activities that would otherwise constitute an offence under this legislation may be licensed by Natural England for certain purposes.
- 3.3.12. The 2020 desk study returned 19 records of amphibians within 2km of the Site central grid reference, including six records of GCN, the closest of which was located approximately 750m away.
- 3.3.13. No evidence of amphibians was recorded during the field survey. Pond 2 underwent a HSI assessment and was evaluated as poor for its suitability to support GCN. Pond 1, was unable to be surveyed in 2023 due to dense scrub preventing access, and was therefore assumed to be present, however being dry previously was not considered suitable to support GCN.
- 3.3.14. Suitable terrestrial habitat was present within the Site to support sheltering and foraging amphibians in the form of patches of species-poor semi-improved grassland and scrub habitats, however potential refugia in the form of piles of rubble, brash and logs recorded in 2020 were no longer present, reducing the likelihood that amphibians and in particular GCN were present on Site. Further recommendations are given within **Section 4** of this report.
- 3.3.15. Two waterbodies were present within 250m of the Site, located 100m north and 160m south, respectively. Only the southern waterbody was able to be accessed in 2020 and subject to HSI assessment, returning a score of 'poor' in line with Oldham (2000) (HSI score of 0.43).

⁷ Disturbance is defined within the Habitats Regulations as that which is likely to impair a species ability to survive, breed or reproduce, hibernate or migrate or to significantly affect the local distribution or abundance of the species

Reptiles

- 3.3.16. Native widespread reptile species (common or viviparous lizard *Zootoca vivipara*, adder *Vipera berus*, grass snake *Natrix helvetica* and slow worm *Anguis fragilis*) are partially protected under Schedule 5 of the WCA 1981 (as amended). This includes protection from killing and injury.
- 3.3.17. All reptile species are also listed as species of principal importance (SPI) in accordance with Section 41 of the NERC Act 2006. Under Section 40 of the NERC Act (England) every public body (including planning authorities) must, '*in exercising its functions, have regard so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity*' (including SPI) when discharging their duties (including determining planning applications).
- 3.3.18. Suitable habitat to support commonly occurring reptiles was present within the Site in the form of scrub habitats, bare ground, and patches of species poor semi-improved grassland; this includes specifically the margins between habitats. Potential refugia in the form of piles of rubble, brash and logs recorded in 2020 were no longer present, reducing the likelihood that the Site could support a viable population of reptiles.
- 3.3.19. Removal of habitats could lead to the potential disturbance, injury or killing of any reptiles present. Therefore, further recommendations are given within **Section 4** of this report.

Other mammals

- 3.3.20. Under the Protection of Badgers Act (1992) It is an offence to wilfully take, kill, injure, possess or ill-treat a badger. Their setts are protected against intentional or reckless interference. The 2020 desk study returned no records of badger within 2km of the Sites central grid reference. No evidence of badger was recorded during the field survey and habitat with potential to support sett creation was limited within the Site to areas of scrub. However, the Site had potential to support badger in a foraging capacity within scrub habitats bordering woodland, to the east of the Site. Recommendations are given within **Section 4** of this report.
- 3.3.21. Hedgehog *Erinaceus europaeus* are listed on Schedule 6 of the Wildlife and Countryside Act 1981, which makes it illegal to kill or capture wild hedgehogs. They are also a SPI in accordance with Section 41 of the NERC Act 2006. Under Section 40 of the NERC Act (England). Suitable habitat on Site for hedgehogs includes scrub, and the woodland edge bordering the site to the east.
- 3.3.22. The 2020 desk study data returned seven records of hedgehog within 2km of the Site central grid reference.
- 3.3.23. Mammal paths and a mammal footprint, likely deer, were also recorded in scrub to the north of the Site (**TN1, Figure 3- Habitat Validation Survey Results**). Further recommendations are given within **Section 4** of this report.

Non-native / invasive species

- 3.3.24. Previously during the 2020 survey a large stand of Japanese knotweed *Reynoutria japonica* was recorded 35m southeast of the Site. This area was not able to be accessed in the 2023 update survey due to health and safety constraints. Japanese knotweed is an invasive non-native species, listed under Schedule 9 (Section 14) of the WAC (as amended). Under the WCA 1981 (as amended), it is an offence to plant or cause this species to grow/spread in the wild. Actions which may cause the spread of this species (e.g. strimming, flailing or dumping contaminated material) may constitute an offence. Therefore, further recommendations are given within **Section 4** of this report.

4. CONCLUSIONS AND RECOMMENDATIONS

- 4.1.1. The Phase 1 habitat validation survey identified that the Survey Area contained a variety of habitats including dense/continuous scrub, scattered scrub, running water, standing water and bare ground. The habitats recorded on site were broadly consistent with those recorded during the 2020 survey, and recommendations with regard to habitats and protected and/or notable species likely to be present remain consistent with those previously reported. Differences of note included the significant increase in dense scrub and the change of species poor, semi-improved grassland habitat to bare ground.
- 4.1.2. Due to the distance and lack of connectivity between the two statutory sites identified and the Site, there are no anticipated effects to these sites from the Proposed Development. Therefore, designated sites are not discussed further within this report.
- 4.1.3. Otis Meadow LWS was located approximately 80m west of the Site central grid reference, and whilst the Proposed Development will not require land take from the LWS, there is potential for it to be affected by construction phase pollution due to its proximity. To minimise this, use of best environmental practice is recommended. Further detail is provided in **Paragraph 4.1.11**.
- 4.1.4. The loss of trees and scrub habitats from the boundary of the Proposed Development should be avoided where possible. Retained trees should be protected in-line with British Standard BS5837 (British Standards Institution, 2012) trees in relation to construction.
- 4.1.5. All trees on Site were assessed as negligible for roosting bat potential, however suitable foraging and commuting habitat is present within the Site. Further recommendations are as follows:
- Any lighting during the construction phase and external lighting incorporated as part of the Proposed Development should be kept to a minimum.
 - Where required, lighting should be directional, avoid UV content, and instead utilise warmer spectrums.
 - Lighting should be used only when required and not illuminate adjacent habitats or features that may support protected and/or notable species, e.g. broadleaved plantation woodland, and scrub habitats.
 - Retained habitats should not be directly illuminated during the operational phase of the Proposed Development.
- 4.1.6. No evidence of badger was recorded on Site, however the habitat composition could support badger in a foraging and commuting capacity. Mammal paths and a mammal footprint, likely deer, were also recorded in scrub to the northeast of the site (TN2). It is therefore recommended that best practice working methods be implemented in order to safeguard terrestrial mammals, as outlined in Construction Industry Research and Information Association guidance (CIRIA, 2015). Excavations must be covered or securely

fenced (with no potential access points beneath fencing) when the Site is closed (e.g. overnight) to prevent the entrapment of animals.

- 4.1.7. Suitable habitat for nesting birds was present on Site. Therefore, it is recommended that any vegetation clearance is undertaken outside the breeding bird season (March to August, inclusive), however if this is not possible a pre-clearance check for the presence of nests and nesting birds will be required. This should be undertaken by a suitably experienced ecologist. If nesting birds are discovered, works should cease within that immediate area and a buffer placed around the active nest (the size of which would be determined by the species of bird and at the discretion of the suitably experienced ecologist). Only once the nest/nesting activity has come to a natural conclusion (eggs hatched and chicks fledged the nest or nest attempt fails) can the exclusion buffer be removed and works recommence.
- 4.1.8. Pond 2 was assessed as poor for its suitability to support GCN; however another pond, recorded as dry in 2020 (Pond 1), was not able to be surveyed in 2023 due to access limitations. Neither of these ponds are within the Site. There was limited terrestrial habitat within the Site to support GCN, therefore it is concluded that although unlikely for GCN or other amphibians to be present on Site, any vegetation clearance should be carried out under a Precautionary Working Method Statement (PWMS) produced by a suitably experienced ecologist.
- 4.1.9. Suitable habitat to support reptiles was also present within the Site. It is therefore recommended that any vegetation clearance within the Site should be carried out under a PWMS produced by a suitably experienced ecologist.
- 4.1.10. Japanese knotweed was previously recorded in 2020 in close proximity to the Site. Should works be undertaken within 7m of, or directly within the stand of Japanese knotweed, additional control measures are required to prevent any further spread of plant materials across the Site or to off-site areas. It is recommended that an invasive non-native species specialist contractor is engaged as early as possible to discuss options for the continued treatment and removal of the plant from the Site as part of the works. The specialist contractor will be able to advise of timescales required for successful removal from site and the necessary procedures and protocols required (e.g. appropriate disposal of plant material).
- 4.1.11. In addition, general environmental protection measures must be implemented during the construction phase of the Proposed Development. Such measures include best environmental practice guidance outlined in Construction Industry Research and Information Association Guidance (CIRIA, 2015). The following minimum standards must be adhered to in order to prevent ecological impacts beyond the Site boundary:
 - Measures must be taken to prevent dust and other emissions from construction affecting land beyond the Site.

- Measures must be taken to ensure aquatic pollution is avoided. Chemicals and fuels must be stored in secure containers located away from watercourses or waterbodies. Spill kits must be available (Environment Agency, 2014)
- Excavations must be covered or securely fenced (with no potential access points beneath fencing) when the Site is closed (e.g. overnight) to prevent entrapment of animals.
- Retained trees must be protected in accordance with BS5837;
- Noise and vibration must be controlled and kept to the minimum necessary.
- Lighting used for construction must be switched-off when not in use and positioned so as not to spill on to adjacent land or retained vegetation within the Site.

5. References

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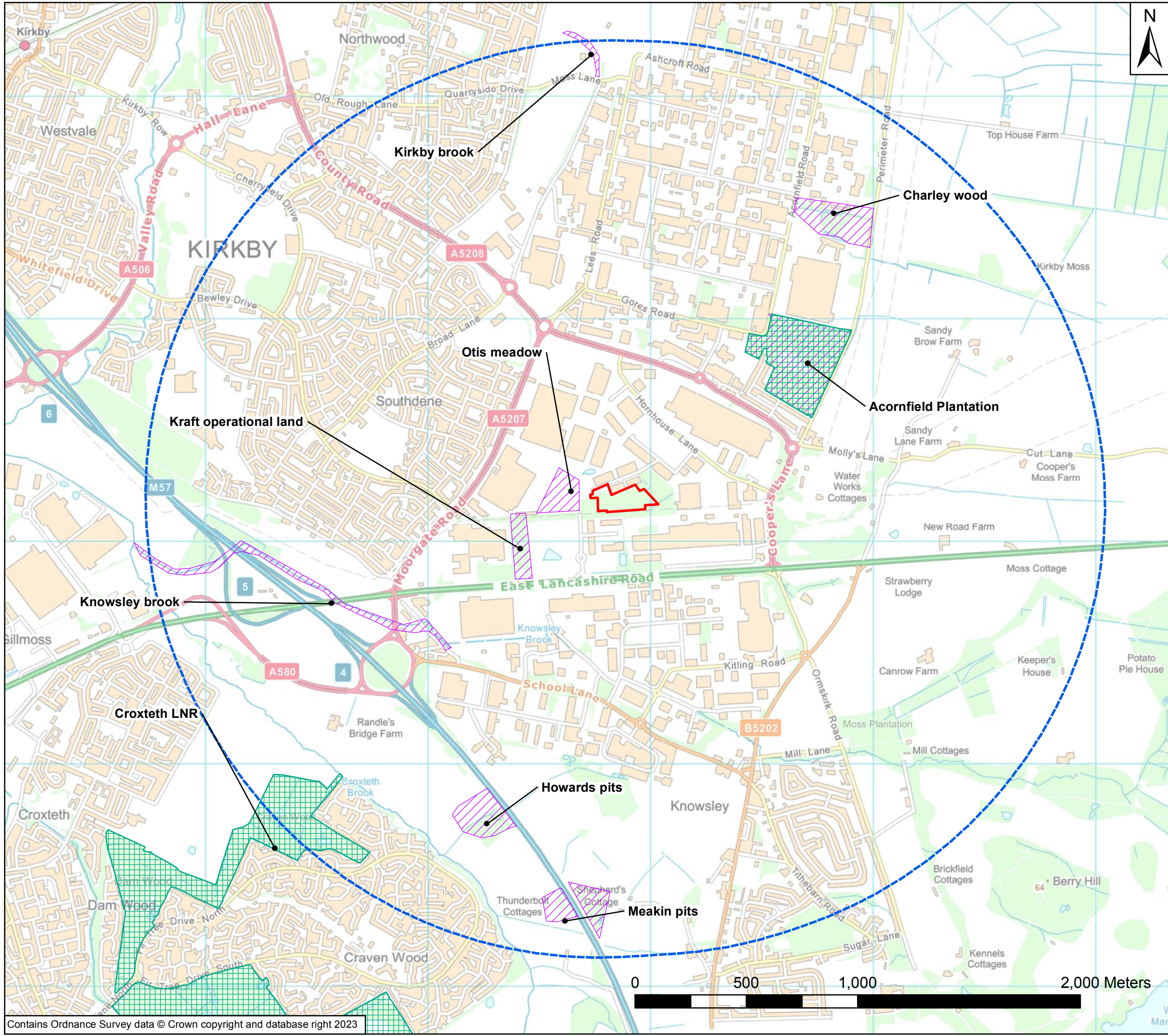
Figures



Key:
 Site Boundary

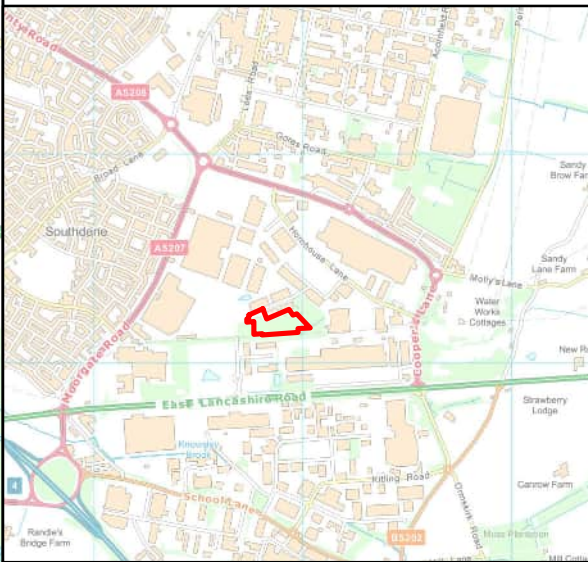


Client:	Network Space		
Project:	Land Off Faraday Road, Knowsley		
Title:	Figure 1 - Site Location Plan		
Drawing No:	Figure 1	Drawn:	AC
Date:	03/02/2023	Checked:	EH
Scale:	1,200 @ A3	Approved:	EH



Key:

- Site Boundary
- 2km Buffer
- Local Nature Reserve (Eng)
- Local Wildlife Site (LWS)



Client:	Network Space		
Project:	Land off Faraday Road		
Title:	Figure 2: Designated Sites		
Drawing No:	Figure 2	Drawn:	AC
Date:	03/02/2023	Checked:	EH
Scale:	16,500 @ A3	Approved:	EH



- Key:
- Site Boundary
 - JNCC Habitat**
 - Bare ground
 - Not accessed land
 - Scrub - dense/continuous
 - Scrub - scattered
 - Standing water
 - Running water
 - Target Note



Client:	Network Space		
Project:	Land Off Faraday Road, Knowsley		
Title	Figure 3 - Results of Habitat Validation Survey		
Drawing No:	Figure 3	Drawn:	AC
Date:	03/02/2023	Checked:	EH
Scale:	1,100 @ A3	Approved:	EH

Appendix A

Site Photographs

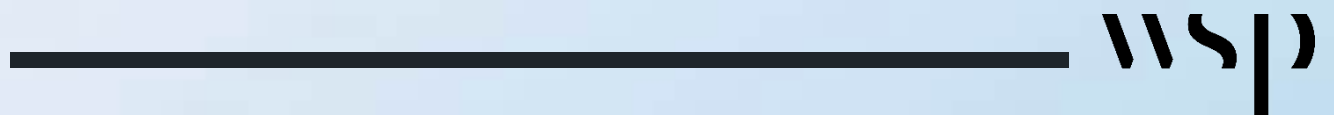


Table A-1 – Site Photographs

	
Photograph 1: Dense scrub, dominated by gorse <i>Ulex europaeus</i>	Photograph 2: Areas of scattered scrub, including immature willow <i>Salix sp</i>
	
Photograph: 3: Patches of poor, semi-improved grassland was present within the north and northwest of the Site. Dominated by false oat grass <i>Arrhenatherum elatius</i>	Photograph 4: Pond 2 recorded along the eastern boundary of the Site (SJ 43036 97176).



Photograph 5: A shallow, wet ditch was recorded running northeast to southwest through the Site



Photograph 6: Large areas of bare due to use of heavy machinery



Photograph 7: mammal paths through gorse (TN2)



Photograph 8: mammal footprint, likely deer (TN2)

Appendix B

HSI Scores

WSP

Table B-1: HSI Score – Pond 2

SI No	SI Description	SI Value
1	Geographic location	1
2	Pond area	0.05
3	Pond permanence	0.1
4	Water quality	0.33
5	Shade	1
6	Waterfowl effect	0.67
7	Fish presence	1
8	Pond density	0.6
9	Terrestrial habitat	1
10	Macrophyte cover	0.3
HSI Score:		0.43
Pond suitability:		Poor

Appendix C

Target Notes

WSP

Target note 1: A dry pond previously identified in 2020 (Pond 1), unable to be accessed in 2023 due to thick scrub and soft issues. Location of a pond on aerial mapping at SJ 42979 97128. Previously present vegetation included bulrush *Typha* sp is abundant, along with other aquatic species such as water mint *Mentha aquatica*, celery-leaved buttercup *Ranunculus sceleratus* and ivy-leaved water crowfoot *Ranunculus hederaceus*.

Target note 2: Mammal paths into dense scrub and a mammal footprint, likely deer

Target note 3: Patches of species poor, semi-improved grassland within bear ground. Previously covered larger area in 2020 but significantly reduced due to use of heavy machinery.

Appendix D

**APPENDIX TITLE WSP (2020) Land
off Faraday Road Preliminary
Ecological Appraisal**

wsp



Gleave Partnership

LAND OFF FARADAY ROAD

PRELIMINARY ECOLOGICAL APPRAISAL





Gleave Partnership

LAND OFF FARADAY ROAD

PRELIMINARY ECOLOGICAL APPRAISAL

TYPE OF DOCUMENT (VERSION) CONFIDENTIAL

PROJECT NO. 70073657

OUR REF. NO. 003

DATE: JULY 2020

Gleave Partnership

LAND OFF FARADAY ROAD

PRELIMINARY ECOLOGICAL APPRAISAL

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QUALITY CONTROL

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks	Issue			
Date	July 2020			
Prepared by	Abbie Case			
Signature				
Checked by	David Chatterton			
Signature				
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Signature				
Project number	70073657			
Report number	003			

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RELEVANT LEGISLATION AND PLANNING POLICY

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SUMMARY OF ECOLOGICAL DESK STUDY DATA

APPENDIX C

PLANT SPECIES RECORDED

APPENDIX D

TARGET NOTES

APPENDIX E

PHOTOGRAPHS

EXECUTIVE SUMMARY

- 1.1.1. WSP UK Ltd (WSP) was commissioned on 8th June 2020, by Gleave Partnership, to provide ecological services to inform a Planning Application for the development of a site for the storage of operational vehicles, including resurfacing, ancillary parking, and ancillary infrastructure at Faraday Road, Knowsley. The site is approximately 3.5 hectares in size and located at central OS Grid Reference: SJ 42904 97169 (hereby referred to as 'the Proposed Development').
- 1.1.2. A Preliminary Ecological Appraisal (PEA), comprising a desk study and an extended Phase 1 habitat survey were undertaken on 13th July 2020.
- 1.1.3. The desk study identified two statutory nature conservation sites, within 2km of the centre of the Site, the closest of which was Acornfield Plantation Local Nature Reserve, located 700m north east of the Site. Eight non-statutory sites are located within 2km of the Site, the closest being Otis meadow located 80m west of the Site.
- 1.1.4. The Site consists of a mosaic of species poor, semi-improved grassland with areas of scattered and dense scrub, and tall ruderal species. Immature broadleaved trees are present along the southern and eastern boundary of the Site. A section of broadleaved plantation woodland is present to the east, beyond the Site boundary.
- 1.1.5. No incidental observations of activity or presence of protected or notable species were recorded on Site, however the Site has potential to support, breeding birds, amphibians and reptiles. A large stand of Japanese knotweed *Reynoutria japonica* was also recorded within the Site.
- 1.1.6. It is recommended that nesting bird checks be undertaken should vegetation clearance be scheduled within the breeding bird season (recognised as March to August inclusive). In addition, it is recommended that a Precautionary Working Method Statement (PWMS) be prepared and adhered to during vegetation clearance to ensure the protection of amphibians and reptiles which may utilise the Site, owing to the presence of habitats and features with potential to support such species.

It is recommended a specialist contractor is engaged as early as possible to advise on the continued treatment of Japanese knotweed at the Site.

Contact details 0161 200 500

1. INTRODUCTION

1.1. BACKGROUND

PROJECT BACKGROUND

- 1.1.1. WSP UK Ltd (WSP) was commissioned on 8th June 2020, by Gleave Partnership, to provide ecological services to inform a Planning Application for the development of land for the storage of operational vehicles, including resurfacing, ancillary parking, and ancillary infrastructure at Faraday Road, Knowsley (hereby referred to as 'the Proposed Development').
- 1.1.2. **Figure 1** shows the area of the Proposed Development labelled as 'Application Boundary', which is approximately 3.5 hectares in size and located at central OS Grid Reference: SJ 42904 97169 and hereafter referred to as 'the Site'. The Land Ownership Boundary is also shown on **Figure 1**.

ECOLOGICAL BACKGROUND

- 1.1.3. WSP has not been made aware of any previous ecological background for the Site.

1.2. SCOPE OF REPORT

- 1.2.1. Gleave Partnership commissioned WSP to complete a Preliminary Ecological Appraisal (PEA) of the Site in July 2020. The brief was:
- To provide baseline ecological information about the Site and a surrounding study area with particular reference to whether legally protected and/or notable sites, species or habitats are present or likely to be present;
 - To provide recommendations to enable compliance with relevant nature conservation legislation and planning policy; and
 - If necessary, to identify the need for avoidance, mitigation, compensation or enhancement measures and/or further ecological surveys.

1.3. RELEVANT LEGISLATION AND POLICY

- 1.3.1. The appraisal has been compiled with reference to the following relevant nature conservation legislation, planning policy and the UK Biodiversity Framework from which the protection of sites, habitats and species is derived in England. The context and applicability of each item is explained as appropriate in the relevant sections of the report and additional details are presented in **Appendix A**.
- The Conservation of Habitats and Species Regulations 2017 (as amended) (Habitats Regulations);
 - The Wildlife and Countryside Act 1981 (as amended) (WCA);
 - Countryside Rights of Way Act 2000;
 - The Natural Environment and Rural Communities (NERC) Act 2006 (England);
 - The Protection of Badgers Act 1992;
 - The Hedgerows Regulations 1997;
 - The Wild Mammals (Protection) Act 1996;
 - The UK Post-2010 Biodiversity Framework (2011-2020) (JNCC and DEFRA, 2012);
 - Biodiversity 2020: A strategy for England's wildlife and ecosystem services (DEFRA, 2011);

- UK Biodiversity Action Plan (UKBAP)¹;
- The National Planning Policy Framework (NPPF) 2019 (Ministry of Housing Communities & Local Government, February 2019);
- Technical Advice Note 5; Nature Conservation and Planning 2009;
- Knowsley Local Plan Core Strategy 2016.

¹ The UK BAP has now been replaced by the UK Post-2010 Biodiversity Framework, however, it contains useful information on how to characterise important species assemblages and habitats which is still relevant.

2. METHODS

2.1. OVERVIEW

- 2.1.1. This appraisal has been prepared with reference to current good practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2017), Joint Nature Conservation Committee (JNCC, 2010) and guidance contained in the British Standard - Code of Practice for Biodiversity and Development BS42020:2013 (British Standards Institute (2013).
- 2.1.2. This PEA is based on the following data sources:
- An ecological desk study;
 - A habitat survey; and
 - A protected/notable species assessment.

2.2. DESK STUDY

- 2.2.1. A desk study was undertaken in July 2020 to review existing ecological baseline information available in the public domain and to obtain information held by relevant third parties. For the purpose of the desk study exercise, records were collated within various radii around the Site. This approach is consistent with current good practice guidance published by the CIEEM (2015 and 2017). To provide the baseline data for the ecological desk study, the following information was requested from Merseyside Biobank:
- Records of legally protected and notable species within 2km of the Site;
 - Bat records within a 5km radius of the Site; and
 - Records of non-statutory sites designated for nature conservation value within 2km of the Site.
- 2.2.2. Freely downloadable datasets (available from Natural England) were consulted for information regarding the presence of statutory designated habitats² within 2km of the Site. This was extended to 10km from the Site in search of the presence of European or international designed sites.³
- 2.2.3. Freely downloadable datasets (available from Natural England) were consulted for information regarding Habitats of Principal Importance (HPI)⁴ within 1km and woodland listed on the Ancient Woodland Inventory⁵

² Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and Local Nature Reserves (LNR).

³ Special Area of Conservation (SAC), Special Protection Area (SPA) and Ramsar.

⁴ Mapped locations of HPI are usually not available, but HPI aligns in the most part with UKBAP habitats. Inventories of UKBAP habitat have been prepared by a variety of organisations and at a national (Natural England priority habitat inventory) and local scale (e.g. by local records centres). In some instances these are primarily based on aerial photograph analysis rather than field survey.

⁵ The ancient woodland inventory in England lists areas over two hectares in size which have been continuously wooded since at least 1600.

- 2.2.4. In addition, open source 1:25,000 Ordnance Survey mapping was used to identify any mapped water bodies and watercourses within 250m of the Site.
- 2.2.5. The findings of the desk study have been incorporated within **Section 3** and **Appendix B** of this report and are shown on **Figure 2**.
- 2.2.6. The ecological desk study was carried out by a graduate member of CIEEM, who has completed numerous ecological desk studies within the last year.

2.3. HABITAT SURVEY

- 2.3.1. A Phase 1 habitat survey of the Site was carried out on the 13th July 2020. The survey covered the entire Site including boundary features. The Phase 1 habitat survey was carried out by a full member of CIEEM, with extensive experience of surveys of sites containing similar habitat types.
- 2.3.2. Habitats were described and mapped following the standard Phase 1 habitat survey methodology (JNCC, 2010). Phase 1 habitat survey is a standard technique for classifying and mapping British habitats. The dominant plant species are recorded, and habitats are classified according to their vegetation types. Where appropriate consideration was given to whether habitats qualify, or could qualify, as a HPI following habitat descriptions published by the Joint Nature Conservation Committee (JNCC, 2008).
- 2.3.3. A list of plant species was compiled (**Appendix C**), with relative plant species abundance estimated using the DAFOR scale⁶. The scientific names for plant species follow those in the New Flora of the British Isles (Stace, 2019) and are also listed in **Appendix C**.
- 2.3.4. Habitats were marked on a paper base map and were subsequently digitised using a Geographical Information System (GIS).
- 2.3.5. Target notes were made to provide information on specific features of ecological interest (e.g. a badger *Meles meles* sett) or habitat features too small to be mapped. These are included in **Appendix D**.
- 2.3.6. Any invasive plant species listed on Schedule 9 of the WCA 1981 (as amended) which were evident during the Phase 1 habitat survey were also target noted. Detailed mapping of such species; or a full survey of the Site for all invasive plant species is beyond the scope of this commission.
- 2.3.7. Data collected as part of this Phase 1 Habitat survey is suitable for use in retrospective biodiversity unit calculations, if required.

2.4. PROTECTED SPECIES ASSESSMENT

- 2.4.1. The potential for the Site to support legally protected and notable species was assessed using the desk study results and combined with field observations during the habitat survey. The assessment

⁶ The DAFOR scale has been used to estimate the frequency and cover of the different plant species as follows: Dominant (D) - >75% cover, Abundant (A) – 51-75% cover, Frequent (F) – 26-50% cover, Occasional (O) – 11-25% cover, Rare (R) – 1-10% cover., The term 'Locally' (L) is also used where the frequency and distribution of a species are patchy and 'Edge' (E) is also used where a species only occurs on the edge of a habitat type.

of habitat suitability for protected and notable species was based on professional experience and judgement. This was supplemented by standard sources of guidance on habitat suitability assessment for key faunal groups including: birds (Gilbert et al, 1998 and Bibby et al, 2000), great crested newt (Gent and Gibson, 2003 and English Nature, 2001); reptiles (Froglife, 1999 and Gent and Gibson, 2003); bats (Collins, 2016 and Mitchell-Jones, 2004); badger (Harris et al, 1991 and Roper, 2010).

2.4.2. The protected species assessment additionally included the completion of Habitat Suitability Index (HSI) assessment of ponds located within 250m of the Site for their suitability to support Great Crested Newt (GCN) *Triturus cristatus*. HSI is a means of evaluating habitat quality and quantity utilising a numerical index between 0 and 1 of ten key factors known to influence the potential of a waterbody to support GCN. HSI assessment was conducted whilst on Site with surveyors observing waterbodies and surrounding terrestrial habitat and scoring against the following factors in line with relevant guidance (Oldham et al, 2000):

- Geographic Location;
- Waterbody area;
- Waterbody permanence;
- Water quality;
- Presence and extent of waterbody shading;
- Presence of waterfowl;
- Presence of fish;
- Presence of additional waterbodies within 1km;
- Quality of terrestrial habitat; and
- Presence of macrophytes.

2.4.3. In addition, attempts were made to complete eDNA sampling of both waterbodies, however, access was not possible to the northern waterbody and whilst access was granted to the southern waterbody, owing to the steep banksides and dense vegetation eDNA sampling was not possible.

2.5. NOTES AND LIMITATIONS

2.5.1. Every effort has been made to provide a comprehensive description of the Site; however, the following specific limitations apply to this assessment:

- Records held by local biological record centres and local recording groups are generally collected on a voluntary basis; therefore, the absence of records does not demonstrate the absence of species, it may simply indicate a gap in recording coverage.
- The Phase 1 Habitat survey was carried out over the period of a single day, as such only a selection of all species that occur within the Site will have been recorded. However, through use of desk study information to supplement site survey data, it is considered that an accurate assessment of the potential for the Site to support protected species or those of conservation concern has been possible.
- The extended Phase 1 habitat map (**Figure 3**) has been reproduced from field notes and plans. Whilst this provides a sufficient level of detail to fulfil the requirements of a PEA, the maps are not intended to provide exact locations of key habitats.
- Surveyors were unable to obtain access to the northern waterbody beyond the Site to undertake HSI or eDNA survey, with the area heavily fenced and no means of access identified. The waterbody located south of the Site was accessed, however, was found to be heavily vegetated

and with extremely steep banksides, therefore preventing safe access to the waterbody edge to complete eDNA sampling. Whilst HSI assessment was possible of the southern pond, eDNA survey of either waterbody was not possible. Despite this limitation it is considered the conclusions and recommendations included within this report are sufficient to progress the Proposed Development.

3. RESULTS

3.1. DESIGNATED SITES

STATUTORY SITES

- 3.1.1. No European or international designated sites are located within 10km of the Proposed Development. The desk study identified two statutory nature conservation sites within 2km of the centre of the Site. A description of nationally designated sites are detailed in **Table 1** below and shown in **Figure 2**.
- 3.1.2. The closest of these Sites, Acornfield Plantation, a Local Nature Reserve (LNR), is located 700m north east of the Site.

Table 1 - Statutory designated sites of national importance

Site Name	Designation	Size (ha)	Approximate Distance and orientation from Site	Description
Acornfield Plantation	LNR	12.26	700m north east	Predominantly mature broadleaved woodland of birch <i>Betula pendula</i> , oak <i>Quercus sp</i> and sycamore <i>Acer pseudoplatanus</i> . The centre of the site has a lowland basin mire dominated by sphagnum moss and soft rush <i>Juncus effusus</i> . Other habitats include a pond, stream, drainage channels, acidic and neutral grasslands, bracken <i>Pteridium aquilinum</i> and rhododendron <i>Rhododendron sp.</i> thickets.
Croxteth	LNR	86.45	2.0km south west	The reserve has woodland, rough grassland and pasture, several ponds and is bounded by the River Alt. A variety of birds breed in the woodland and the ponds are good for plants such as water dropwort <i>Oenanthe sp.</i> and dragonflies.

NON-STATUTORY SITES

- 3.1.3. The desk study identified eight non-statutory nature conservation sites within 2km of the centre of the Site. A description of these sites is detailed in **Table 2** below and shown in **Figure 2**.
- 3.1.4. The closest of these sites is Otis meadow, a Local Wildlife Site (LWS), located approximately 80m west of the Site.

Table 2 - Non-statutory designated sites

Site Name	Designation	Size (ha)	Distance and orientation from Site	Description
Otis meadow	LWS	2.56	80m west	A mix of damp and dry grasslands with developing scrub. Unusual habitats within the Knowsley Industrial Estate.
Kraft operational land	LWS	2.73	300m south west	A wetland with good species diversity. Drier areas of grassland add to the interest of the site.
Acornfield plantation	LWS	11.62	700m north east	Predominantly mature broadleaved woodland of birch, oak and sycamore. The centre of the site has a lowland basin mire dominated by sphagnum moss and soft rush. Other habitats include a pond, stream, drainage channels, acidic and neutral grasslands, bracken and rhododendron thickets.
Knowsley brook	LWS	2.77	900m south west	An open watercourse providing good habitat for water voles.
Charley wood	LWS	7.7	1.3km north east	A woodland dominated by broadleaved trees on acid peat soils. There is much variation in tree and shrub cover with large glades apparent. Rhododendron has been planted and is thriving. Invertebrate interest is high.
Howards pits	LWS	1.85	1.5km south	A mature broadleaved woodland with ponds and drainage ditches
Meakins pits	LWS	2.11	1.6km south	A plantation woodland, dominated by Scot's pine <i>Pinus sylvestris</i> and broadleaved trees, split by the construction of the M57 Motorway.
Kirkby brook	LWS	0.27	2.0km north	Open watercourse providing good habitat for water voles.

OTHER HABITATS OF CONSERVATION IMPORTANCE

- 3.1.5. There are no known areas of Ancient woodland located within 1km of the Site.
- 3.1.6. Several parcels of HPI broadleaved deciduous woodland are located within 2km, the closest of these lies immediately adjacent to the Site's north-eastern boundary. Briton Plantation is dominated by sycamore, with ash *Fraxinus excelsior*, hawthorn *Crataegus monogyna*, crack willow *Salix fragilis* and pedunculate oak *Quercus robur* (**Photograph 1**).

3.2. HABITAT SURVEY

OVERVIEW

- 3.2.1. The following account summarises the findings of the Phase 1 habitat survey. Nine Phase 1 habitat types were identified in the Site. They are mapped on **Figure 3** and are listed in **Table 3** along with areas in hectares (or length for linear features). A description of the dominant and notable species, the composition and management of each habitat is provided below, and an indicative species list is provided in **Appendix C**. Target notes are provided in **Appendix D** and photographs in **Appendix E**. Alpha-numeric codes used in this section cross-refer to the JNCC Phase 1 habitat survey classification (JNCC, 2010). The order of the habitat descriptions below reflects their ordering in the Phase 1 habitat survey manual and does not reflect habitat importance.

Table 3 - Phase 1 habitat Areas

Phase 1 Habitat	Area (ha)	Length (m)	% of Site Area
A3.1 Broadleaved scattered trees	-	348.14	-
A2.1 Scrub – Dense/Continuous	0.04	-	0.62
A2.2 Scrub – Scattered	2.98	-	46.06
B6 Poor Semi-Improved Grassland	2.98	-	46.06
C3.1 Other Tall Herb and Fern – Ruderal	0.29	-	4.48
G2 Running water	-	178.03	-
J2.4 Fence	-	358.58	-
J2.6 Dry ditch	-	72.01	-
J4 Bare Ground	0.18	-	2.78
TOTAL	6.47	956.76	100

BROADLEAVED SCATTERED TREES – A3.1

- 3.2.2. Scattered broadleaved trees were present along the southern and eastern boundary of the Site, most of which were immature and relatively thin. Species present included frequent sycamore with lesser amounts of pedunculate oak, goat willow *Salix caprea*, hawthorn and silver birch *Betula pendula* (**Photograph 2**).

SCRUB DENSE/CONTINUOUS – A2.1

- 3.2.3. A section of dense scrub was present to the south-east of the Site.
- 3.2.4. A previously dense area of willow *Salix* sp. scrub, which had been recently cleared, was present to the north of the Site. Most of the willow present within this area was noted to be regenerating from cut stumps (**Target note 5, Photograph 3**).

SCRUB SCATTERED – A2.2

- 3.2.5. Areas of scattered scrub were present throughout the Site, within species poor semi-improved grassland habitats.
- 3.2.6. To the south of the Site an extensive growth of gorse *Ulex europaeus*, covering a large area between earth mounds was recorded between sections of tall ruderal habitats (**Photograph 4**).

SPECIES POOR SEMI-IMPROVED GRASSLAND – B6

- 3.2.7. The majority of the Site comprised a mosaic of species poor, semi-improved grassland with areas of scrub and tall ruderal vegetation.
- 3.2.8. An area of species poor semi-improved grassland dominated by false oat grass *Arrhenatherum elatius*, with little scrub or ruderal vegetation, was present to the north-west of the Site (**Photograph 5**).

TALL RUDERAL – C3.1

- 3.2.9. Areas of tall ruderal habitat, including species such as common nettle *Urtica dioica*, rosebay willow herb *Chamaenerion angustifolium* and common Michaelmas-daisy *Symphyotrichum lanceolatum* x *novi-belgii* (*S. x salignum*), were scattered throughout the Site (**Photograph 6**).

RUNNING WATER – G2

- 3.2.10. Two wet ditches were present within the Site.
- 3.2.11. A section of wet ditch (**Target Note 1, Photograph 7**), which appeared to have been recently excavated, was present to the east of the Site between the location of a dry pond (**Target Note 3, Photograph 8**) and Briton Plantation. The water present was deep at western end but dried out towards its eastern extent.
- 3.2.12. The second section of wet ditch (**Target Note 6**) was located along the southern boundary of the Site. The ditch was mostly shaded and contained approximately water of a depth of approximately 10cm (**Photograph 9**).

FENCE – J2

- 3.2.13. Metal palisade fencing was present to the north and running centrally through the Site.

DRY DITCH – J2.6

- 3.2.14. A dry ditch (**Target Note 4, Photograph 10**) was present to the south of the Site. The ditch appeared to be recently excavated and linked to a natural watercourse running along the southern boundary of the Site.

BARE GROUND – J4

- 3.2.15. Two sections of bare ground were present within the centre of the Site, where ground was particularly disturbed in proximity of the excavated dry ditch (**Photograph 11**).

3.3. PROTECTED AND NOTABLE SPECIES ASSESSMENT

- 3.3.1. The potential for the Site to support legally protected species and notable species has been assessed using the results of the desk study and observations made during the site survey of habitats within and immediately surrounding the Site. A summary of desk study information is

included within **Appendix B**. Desk study records have only been considered below if they are recent (from the last 10 years) and/or if they relate to species that may be supported by habitats at the Site. Habitats present within the Site are suitable for the following species; further consideration is given below to the likelihood for these species to be present within the Site:

- Bats;
- Badger;
- Birds;
- Water vole *Arvicola amphibius*;
- Amphibians; and
- Reptiles.

- 3.3.2. The Site does not provide suitable habitat for other protected or notable species and other species, beyond those listed above, will not be considered further in this PEA.

BATS

- 3.3.3. The data search returned 35 records of bats within 2km of the Site, including common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, noctule *Nyctalus noctula* and Daubenton's bat *Myotis daubentonii*. The closest of these records pertains to an unidentified bat species feeding, 110m north of the Site. The closest record of a confirmed roost was located 2km to the south of the Site and associated with a common pipistrelle roost.
- 3.3.4. No granted European Protected Species Licenses were recorded within 2km of the Site.
- 3.3.5. Scattered broadleaved trees present to the south and east of the Site were noted to be immature and relatively thin. These were considered unsuitable to support features with potential to support bat roosts. Three mature trees, two sycamore and one pedunculate oak, were present along the southern boundary, but did not possess suitable roosting features. No trees within the broadleaved plantation woodland section were recorded to have suitable roosting features.
- 3.3.6. Suitable foraging and commuting habitat is present within the Site, and therefore further recommendations are given within **Section 4.6** of this report.

BADGER

- 3.3.7. The data search returned no records of badger within 2km of the Site. No evidence of badger was recorded during the field survey.
- 3.3.8. The Site has potential to provide foraging habitat for badger, including broad-leaved plantation woodland and scattered trees, and scrub habitats, however, habitat with potential to support sett creation is limited within the Site. Additionally, given the highly industrialised nature of the wider area and extensive road network present badgers are not discussed further within this report.

BIRDS

- 3.3.9. The data search returned no relevant records of birds, within 2km of the Site.
- 3.3.10. Broadleaved scattered trees and woodland, species poor semi-improved grassland habitats and areas of scrub within the Site provide suitable habitat for nesting for common species of breeding birds. Therefore, further recommendations are provided within **Section 4.6** of this report.

WATER VOLE

- 3.3.11. The data search returned four records of water vole within 2km of the Site, the closest of these located 900m south west of the Site, in a watercourse not hydrologically linked to those within the Site. No evidence of water vole was recorded during the field survey.
- 3.3.12. Two ditches are present within the Site; one ditch was partially dry, and the other contained less than 10cm of water, at the time of survey. Therefore, both were assessed as unsuitable to support water vole; as such water vole are not considered further within this report.

AMPHIBIANS

- 3.3.13. The data search returned 19 records of amphibians within 2km of the Site; six records of great crested newt *Triturus cristatus*, four records of smooth newt *Lissotriton vulgaris* and nine records of common frog *Rana temporaria*. Records of common frog and smooth newt were returned from within the Site. No records of great crested newt fell within the Site boundary, with the nearest record located approximately 750m away.
- 3.3.14. Two waterbodies are present within 250m of the Site, located 100m north and 160m south, respectively. Only the southern waterbody was able to be accessed and subject to HSI assessment, returning a score of 'average' in line with Oldham (2000) (HSI score of 0.66).
- 3.3.15. No evidence of amphibians was recorded during the field survey. Evidence of a single waterbody was recorded within the Site during the field survey (**Target Note 3, Photograph 8**), however, this was dry at time of survey and considered likely to be ephemeral on an annual basis.
- 3.3.16. Suitable terrestrial habitat is present within the Site to support sheltering and foraging amphibians in the form of species poor semi-improved grassland and scrub habitats. In addition, due to the previous clearance works within the Site, several patches of rubble, cleared brash and log piles were present, which offer suitable hibernacula for amphibians (**Photograph 12**). Therefore, further recommendations are given within **Section 4.6** of this report.

REPTILES

- 3.3.17. The data search returned no records of reptiles within 2km of the Site. No evidence of reptiles was recorded during the field survey.
- 3.3.18. Suitable habitat is present within the Site in the form of scrub habitats, species poor semi-improved grassland, bare ground and tall ruderal vegetation. In addition, log, rubble piles, and brash piles provide suitable hibernacula for reptiles (**Photograph 12**). Therefore, further recommendations are given in **Section 4.6** of this report.

NON-NATIVE INVASIVE PLANT SPECIES

- 3.3.19. The data search returned 33 records pertaining to four species of invasive non-native plant species within 2km of the Site and included Himalayan balsam *Impatiens glandulifera*, Japanese knotweed, rhododendron *Rhododendron ponticum* and Himalayan cotoneaster *Cotoneaster simonsii*. The closest of these records pertains to Japanese knotweed, located 110m south of the Site.
- 3.3.20. During the field survey a large stand of Japanese knotweed was recorded covering an area approximately 150m in length by 5-10m in width along the southern boundary of the Site (**Target Note 2, Photographs 13 and 14**). The stand appeared to have been previously treated with

herbicide but regrowth was present in most areas. Japanese knotweed is listed as a Schedule 9 species under the Wildlife and Countryside Act (as amended) 1981.

- 3.3.21. Owing to the presence of Japanese knotweed within the Site, further recommendations are given within **Section 4.6** of this report.

ANIMAL SPECIES LISTED ON SCHEDULE 9 OF THE WILDLIFE AND COUNTRYSIDE ACT

- 3.3.22. The data search returned 15 records of eastern grey squirrel *Sciurus carolinensis*, within 2km of the Site. The closest record was located 138m south of the Site. During the field survey no evidence of Schedule 9 animals was recorded within the Site.

4. DISCUSSION AND RECOMMENDATIONS

- 4.1.1. This section considers the potential for effects on designated sites, legally protected species, notable species and notable habitats as a consequence of the Proposed Development. Where further surveys or detailed assessment of potential effects are required in order to design suitable mitigation this is identified.

4.2. STATUTORY DESIGNATED SITES

- 4.2.1. LNRs are a statutory designation made under Section 21 of the National Parks and Access to the Countryside Act 1949 by principal local authorities. Parish and Town Councils can also declare LNRs but they must have the powers to do so delegated to them by a principal local authority. LNRs are for people and wildlife. They are places with wildlife or geological features that are of special interest locally.
- 4.2.2. Two local nature reserves are present within 2km of the Site, Acornfield plantation and Croxteth, located 0.7km north east and 2.0km south west, respectively.
- 4.2.3. Due to the distance from the Proposed Development and the lack of connectivity to the Site, there are no anticipated effects on these sites. Therefore, designated sites are not discussed further within this report.

4.3. NON-STATUTORY DESIGNATED SITES

- 4.3.1. Non-statutory designated sites are afforded protection by Local Planning Policy, which aims to prevent development which would adversely affect sites of ecological or geological importance. However, where damage is unavoidable, an approach is taken to seek minimisation of damage and replacement through the use of planning conditions or agreements within any granted planning permission.
- 4.3.2. Eight non-statutory designates sites, all LWS, are located within 2km of the Site. The closet of these sites is Otis meadow, located approximately 80m west of the Site.
- 4.3.3. The Proposed Development will not require land take from Otis meadow, however, there is potential for this non-statutory site to be affected by construction phase pollution, for example dust. To minimise this, best environmental practice recommendations are provided in **Section 4.6**.

4.4. HABITATS

- 4.4.1. Several parcels of deciduous broadleaved woodland are present within 2km of the Site, with one section present adjacent to the Site boundary. Broadleaved woodland is identified as a HPI in accordance with Section 41 of the NERC Act 2006.
- 4.4.2. Under Section 40 of the NERC Act every public body (including planning authorities) must, 'in exercising its functions, have regard so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'.
- 4.4.3. It is not anticipated that any sections of broadleaved woodland will be removed to facilitate construction of the Proposed Development. However, this habitat may be at risk from indirect pollution (i.e. dust) and therefore, further recommendations are given in **Section 4.6**.

4.5. PROTECTED AND NOTABLE SPECIES

- 4.5.1. The results of the desk study, Phase 1 habitat Survey and protected species assessment highlighted the potential presence of several protected species or species of conservation concern within the Site, or within the immediate surroundings of the Site. These include bats, birds, amphibians and reptiles.
- 4.5.2. The legal protection afforded to these species is outlined below and, where appropriate, the requirement for further survey and/or mitigation measures is identified.

BATS

- 4.5.3. All species of bats recorded within the UK are protected from killing, injury and disturbance⁷ and their roosts protected from damage or destruction under the Habitats Regulations. Protection is also afforded under the Wildlife and Countryside Act 1981 (as amended) with respect to disturbance of individuals occupying places of rest or shelter and obstruction of access to these. Activities that would otherwise constitute an offence under this legislation may be licensed by Natural England for certain purposes.
- 4.5.4. Certain species of bats, including the Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, brown long-eared bat *Plecotus auritus* and soprano pipistrelle are also listed as Species of Principal Importance (SPI) for the conservation of biodiversity in accordance with Section 41 of the NERC Act 2006. Under Section 40 of the NERC Act (England) every public body (including planning authorities) must, 'in exercising its functions, have regard so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity' (including SPI) when discharging their duties (including determining planning applications).
- 4.5.5. No trees within the Site were assessed to provide bat roost potential, by virtue of the character of trees present, being predominantly immature and of narrow trunk. Whilst three mature trees were identified on Site, these did not present with features with bat roost potential. In addition, suitable foraging and commuting habitat is also present within the Site.
- 4.5.6. The Proposed Development will require all trees within the Site to be felled. Considering the overall immature nature of the majority of trees on Site and an absence of potential roost features identified on the three mature trees present, no further recommendations are provided in respect of bats.

BIRDS

- 4.5.7. The Habitat Regulations 2017 (as amended) Part 1 Regulation 10(2) & (3) state that local authorities '*must take such steps in the exercise of their functions as they consider appropriate to contribute to...the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the UK including by means of the upkeep, management and creation of such*

⁷ Disturbance is defined within the Habitats Regulations as that which is likely to impair a species ability to survive, breed or reproduce, hibernate or migrate or to significantly affect the local distribution or abundance of the species.

habitat...'. The legislation continues to state that economic and recreation requirements must be taken into consideration in considering which measures are appropriate.

- 4.5.8. Under the Wildlife and Countryside Act 1981 (as amended) all wild birds are protected from killing and injury, and their nests and eggs protected from taking, damage and destruction whilst in use. Additional protection is extended to species listed under Schedule 1 of the Act, meaning it is also an offence to disturb these species at or near the nest, or whilst they have dependent young.
- 4.5.9. Suitable habitat is present within the Site in the form of broadleaved trees, scrub habitats and species poor-semi-improved grassland. Removal of these habitats has the potential to disturb, injure or kill nesting birds present within the Site during the breeding season (recognised as March to August inclusive). Further recommendations are given within **Section 4.6** of this report pertaining to birds.

AMPHIBIANS

- 4.5.10. Great crested newt are protected from killing, injury and disturbance⁸ and their places of rest or shelter (occupied habitat) protected from damage or destruction under the Habitats Regulations. Protection is also afforded under the Wildlife and Countryside Act 1981 (as amended) with respect to disturbance of individuals occupying places of rest or shelter and obstruction of access to these. Activities that would otherwise constitute an offence under this legislation may be licensed by Natural England for certain purposes.
- 4.5.11. Great crested newt and common toad *Bufo bufo* are also listed as SPI in accordance with Section 41 of the NERC Act 2006 (England). Under Section 40 of the NERC Act every public body (including planning authorities) must, 'in exercising its functions, have regard so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity' (including SPI) when discharging their duties (including determining planning applications).
- 4.5.12. There are no waterbodies within the Site, as one present was dry at time of survey. Two waterbodies are present within 250m of the Site, located 100m north, and 160m south respectively. No suitable aquatic habitat is present within the Site to support great crested newt. Suitable terrestrial habitat is present in the form of species poor semi-improved grassland and scrub habitats, in addition to the presence of log, brash and rubble piles which all provide potential to support hibernating amphibians.
- 4.5.13. The Site is located within a heavily industrial/commercial setting and bordered by main roads in all directions within the wider area, representing significant barriers to the movement of animals. Any amphibians present within the Site are likely to represent a small, remnant population and be restricted to within habitat present within the encompassing road network. Whilst the Proposed Development will result in the loss of some habitat, retained habitat beyond the Site boundary will remain viable to support amphibians.

⁸ Disturbance is defined within the Habitats Regulations as that which is likely to impair a species ability to survive, breed or reproduce, hibernate or migrate or to significantly affect the local distribution or abundance of the species.

- 4.5.14. Removal of the aforementioned terrestrial habitats and hibernacula could lead to the potential disturbance, injury or killing of amphibians present within the Site. Further recommendations are given within **Section 4.6** of this report regarding amphibians.

REPTILES

- 4.5.15. Native widespread reptile species (common or viviparous lizard *Zootoca vivipara*, adder *Vipera berus*, grass snake *Natrix Helvetica* and slow worm *Anguis fragilis*) are partially protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This includes protection from killing and injury.
- 4.5.16. All reptile species are also listed as SPI in accordance with Section 41 of the NERC Act 2006. Under Section 40 of the NERC Act (England) every public body (including planning authorities) must, 'in exercising its functions, have regard so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity' (including SPI) when discharging their duties (including determining planning applications).
- 4.5.17. Suitable habitat to support reptiles is present within the Site in the form of scrub habitats, bare ground, tall ruderal vegetation and species poor semi-improved grassland. In addition, log, brash and rubble piles within the Site provide potential hibernacula.
- 4.5.18. Removal of habitats could lead to the potential disturbance, injury or killing of any reptiles present. Therefore, further recommendations are given within **Section 4.6** of this report.

INVASIVE NON-NATIVE SPECIES

- 4.5.19. A large stand of Japanese knotweed was recorded within the Site (**Target Note 2, Photographs 13 & 14**). Japanese knotweed is an invasive non-native species, listed under Schedule 9 (Section 14) of the Wildlife and Countryside Act 1981 (as amended). Under the WCA it is an offence to plant or cause this species to grow/spread in the wild. Actions which may cause the spread of this species (e.g. strimming, flailing or dumping contaminated material) may constitute an offence.
- 4.5.20. Works undertaken near to, or among this species, will require additional control measures to prevent any further spread of plant materials across the Site or to off-site areas. Further recommendations are given within **Section 4.6** of this report.

FURTHER SURVEY REQUIREMENTS

- 4.5.21. Potential ecological constraints for which further surveys and/or mitigation are required to ensure legal and planning policy compliance are listed in **Table 4**.

Table 4 - Key Ecological Constraints and Further Survey Requirements

Ecological Receptor	Potential Constraints	Further Survey Requirements	Seasonal Constraints
Birds	Destruction of active nesting sites with the removal of vegetation.	If Site vegetation clearance is to occur between March and August (inclusive), a suitably experienced ecologist (SEE) would be required to undertake pre-commencement checks of areas proposed for clearance in search of the presence of nesting birds/nests/nesting behaviour no more than 48 hours prior to clearance works. In the absence of nests or nesting behaviour and upon instruction from the SEE, Site clearance may immediately follow the pre-commencement checks. The results of the inspection will be valid for 48 hours only. Any areas previously inspected and allowed for clearance that are not cleared within 48 hours will require a re-inspection by the SEE prior to clearance. If a nest or nesting activity is discovered during any pre-clearance inspection or during works, the SEE will enforce an exclusion zone of at least a 5m radius around the nest/nesting zone (the radius of the exclusion will be determined by the species present and at the discretion of the SEE). The exclusion zone will remain in place until such time that the nest becomes inactive (i.e. chicks hatch and fledge, or nest attempt fails). Only once the nest has been	Nesting bird checks to be carried out prior to vegetation clearance of suitable supporting habitat, during the breeding bird season (March to August, inclusive). Nesting can be impacted by influenced by prevailing weather conditions; therefore, survey may be required during February or into September.

		confirmed inactive by the SEE, can the exclusion be removed, and the vegetation clearance recommence.	
Amphibians	Killing or injuring amphibian species, such as GCN, which may be utilising terrestrial habitats.	Any vegetation and site clearance required within scrub or grassland habitats or removal of log/brush/rock piles within the Site, should be carried out under a Precautionary Working Method Statement (PWMS). The PWMS will necessitate an inspection by a SEE in advance of clearance works. Vegetation clearance should proceed as follows: • Finger-tip search of vegetation in advance of strimming; • If clear, strimming of vegetation to 10cm in height followed by a secondary finger-tip search; • If clear, strimming to ground level. For log/brush/rock piles present on site these will be dismantled and removed by hand and overseen by the presence of a SEE. In the unlikely event animals are discovered during the clearance process these will be captured and translocated to an appropriate receptor site area outwith the construction site boundary. The PWMS is required to promote legal compliance with regards to protected and notable species during construction of the Proposed Development and will include a	Works should ideally take place to avoid the winter months, when GCN are less active (November to March, inclusive).
Reptiles	Killing or injuring reptiles which may be utilising terrestrial habitats.		Works should ideally take place to avoid the winter months, when reptiles are less active (November to February inclusive).

		toolbox talk to all site personnel in advance of site works commencing.	
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4.6. PRELIMINARY AVOIDANCE, MITIGATION AND COMPENSATION MEASURES

- 4.6.1. To enable compliance with relevant legislation and planning policy, as described above within **Section 4.2 to 4.5** the following avoidance, mitigation and compensation measures should be designed into the Proposed Development.
- Japanese knotweed was recorded within the Site. It is recommended that an Invasive Non-Native Species specialist contractor is engaged as early as possible to discuss options for the continued treatment and removal of the plant from the Site as part of the works. The specialist contractor will be able to advise of timescales required for successful removal from site and the necessary procedures and protocols required (e.g. appropriate disposal of plant material).
 - The loss of trees and scrub habitats from the boundary of the Proposed Development should be avoided as far as possible.
 - Retained trees should be protected in-line with *British Standard BS5837* (British Standards Institution, 2012) in relation to construction.
 - Any lighting during the construction phase and external lighting incorporated as part of the Proposed Development should kept to a minimum. Where required, lighting should be directional, avoid UV content, and instead utilise warmer spectrums. Lighting should be used only when required and not illuminate adjacent habitats or features that may support protected and/or notable species, e.g. broadleaved plantation woodland, and scrub habitats. Retained habitats should not be directly illuminated during the operational phase of the Proposed Development.

ENVIRONMENTAL BEST PRACTICE

- 4.6.2. In addition, general environmental protection measures must be implemented during the construction phase of the Proposed Development. Such measures include best environmental practice guidance outlined in Construction Industry Research and Information Association Guidance (CIRIA, 2015).
- 4.6.3. The following minimum standards must be adhered to in order to prevent ecological impacts beyond the Site boundary:
- Measures must be taken to prevent dust and other emissions from construction affecting land beyond the Site.
 - Measures must be taken to ensure aquatic pollution is avoided. Chemicals and fuels must be stored in secure containers located away from watercourses or waterbodies. Spill kits must be available.
 - Excavations must be covered or securely fenced (with no potential access points beneath fencing) when the Site is closed (e.g. overnight) to prevent entrapment of animals.
 - Retained trees must be protected in accordance with BS5837;
 - Noise and vibration must be controlled and kept to the minimum necessary.
 - Lighting used for construction must be switched-off when not in use and positioned so as not to spill on to adjacent land or retained vegetation within the Site.

4.7. ECOLOGICAL ENHANCEMENT OPPORTUNITIES

- 4.7.1. The National Planning Policy Framework (NPPF) (2019) states that at an overview level the '*planning system should contribute to and enhance the national and local environment by...*

minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures'.

- 4.7.2. At a local level, the Knowsley Local Plan 2016 (the 'Local Plan') has core strategy policies in place for Biodiversity and Nature Conservation. Policy CS8 aims to *'seek to protect, maintain and where possible enhance biodiversity within and around new developments according to their designation and significance to provide space for nature'*.
- 4.7.3. To encourage compliance with planning policy the following measures are recommended for inclusion within the Proposed Development; where possible:
- Landscaping associated with the Proposed Development should aim to achieve a measurable gain in biodiversity as informed by a Biodiversity Net Gain (BNG) assessment⁹. Examples of landscaping measures include the use of native species of local provenance and/or species with specific nature conservation benefits (for example invertebrate rich and/or early-late flowering nectar-rich species and fruit bearing species).
 - As many trees as possible should be retained along boundaries and within the Site. Where trees are required to be felled for the Proposed Development, these could be used to create log piles which provide value for amphibians, reptiles and invertebrates, the latter of which provide food resources for birds.

⁹ On 14 March, Her Majesty's Treasury confirmed that following consultation, the government will use the forthcoming Environment Bill to mandate BNG for development in England.

5. CONCLUSIONS

- 5.1.1. Habitat across the Site consists of a mosaic of species poor, semi-improved grassland with areas of scattered and dense scrub, and tall ruderal species. Immature broadleaved trees are present along the southern and eastern boundaries of the Site. A section of broadleaved plantation woodland is present to the east, beyond the Site boundary.
- 5.1.2. Two LNRs are present within 2km of the Site. However, given the lack of pathways between the Site and these designated sites no direct or indirect impacts are envisaged to occur as a result of construction of the Proposed Development. Eight LWS are present within 2km of the Site. The closest of these, Otis meadow, is located 80m west from the Site. No land take is required from this site; however, recommendations are made for environmental best practice measures to minimise construction phase pollution.
- 5.1.3. No incidental observations of activity or presence of protected and/or notable species were recorded during the field survey. Nesting bird checks are recommended if vegetation clearance is due to occur during the nesting bird season (March to August inclusive). A PWMS to safeguard amphibians and reptiles should also be implemented during vegetation clearance of the Site. Finally, an Invasive Non-Native Species specialist contractor should be sought early in the construction programme to successfully treat and remove Japanese knotweed present within the Site.

6. REFERENCES

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FIGURES

Figure 1- Site Location Plan



Legend

-  Application Boundary
-  Ownership Boundary



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

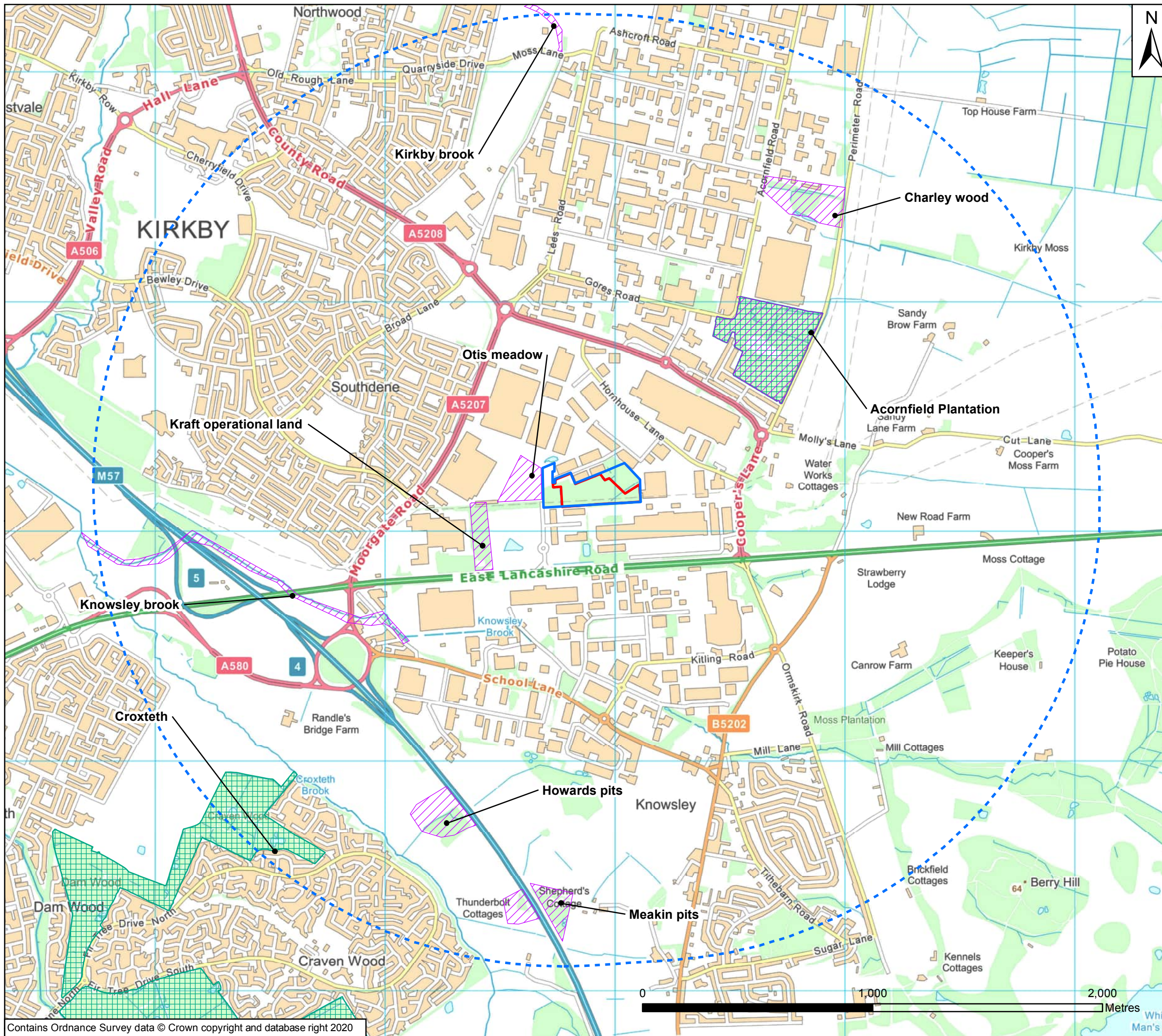


Client:	Gleave Partnership	
Project:	Land off Faraday Road	
Title:	Figure 1 - Site Location Plan	

Drawing No:	Figure 1	Drawn:	AC
Date:	28/07/2020	Checked:	DC
Scale:	2,000 @ A3	Approved:	EH

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 2 - Statutory and Non-Statutory Sites of Nature Conservation



Legend

- Application Boundary
- Ownership Boundary
- 2km Buffer
- Local Wildlife Site (LWS)
- Local Nature Reserve (LNR)

Client:

Gleave Partnership

Project:

Land off Faraday Road

Title:

Figure 2: Statutory and Non-Statutory Sites of Nature Conservation

Drawing No:	Figure 2	Drawn:	AC
Date:	28/07/2020	Checked:	DC
Scale:	16,000 @ A3	Approved:	EH

Figure 3 - Results of Phase 1 Habitat Survey



Legend

- Application Boundary
- Ownership Boundary
- Scrub - Dense/Continuous
- Scrub - Scattered
- Poor Semi-Improved Grassland
- Other Tall Herb and Fern - Ruderal
- Bare Ground
- Dry Ditch
- Running Water
- Scattered Broadleaved Trees
- Target Note



Client:	Gleave Partnership		
Project:	Land off Faraday Road		
Title:	Figure 3 - Phase 1 habitat map		
Drawing No:	Figure 3	Drawn:	AC
Date:	28/07/2020	Checked:	DC
Scale:	1,500 @ A3	Approved:	EH

Appendix A

**RELEVANT LEGISLATION AND
PLANNING POLICY**

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ENGLAND LEGISLATION AND POLICY CONTEXT

This report has been compiled with reference to relevant wildlife legislation, planning policy and the UK Biodiversity Framework. An overview and context of relevant legislation is provided, with the relevant protection each species groups or species receives summarised in Table 1.

The Wildlife and Countryside Act 1981, (as amended) (WCA)

Protected birds, animals and plants are listed under Schedules 1, 5, 8 and 9 respectively of the WCA, a description of these Schedules and their meaning is provided below.

Under the WCA (England) all birds, their nests and eggs (with exception of species listed under Schedule 2) are protected by the WCA. It is an offence to:

- Intentionally kill, injure, or take any wild bird,
- Take or destroy an egg of any wild bird.
- Damage or destroy the nest of any wild bird (whilst being built, or in use). Under the WCA the clearance of vegetation within the survey area boundary, or immediately adjacent to the survey area during the bird nesting season could result in an offence occurring by the disruption or destruction of nest sites. The bird breeding season can be taken to occur between March - August inclusive, although is subject to variations based on species, geographical and seasonal factors.

Schedule 1

Birds listed under Schedule 1 of the WCA¹⁰ are afforded additional protection with regard to intentional or reckless disturbance whilst nest-building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Schedule 5

Species listed in Schedule 5 can either be fully protected or be partially protected under Section 9, which makes it unlawful to intentionally:

- Part 1: kill, injure or take;
- Part 2: possess or control (live or dead animal, part or derivative);
- Part 4 (a): damage or destruct any structure used for shelter or protection;
- Part 4 (b): disturb them in a place of shelter or protection;
- Part 4 (c): obstruct access to place of shelter or protection;
- Part 5 (a): sell, offer for sale, possess or transport for the purpose of sale (live or dead animal, part or derivative);
- Part 5 (b): advertise for buying or selling.

Schedule 8

The Act makes it an offence (subject to exceptions) to pick, uproot, trade in, or possess (for the purposes of trade) any wild plant listed in Schedule 8, and prohibits the unauthorised intentional uprooting of such plants.

Schedule 9

Invasive species listed under Schedule 9 are prohibited from release into the wild and the Act prohibits planting or “causing to grow” in the wild of any plant species listed in Schedule 9. It should be noted that certain bird species listed on Schedule 1 of the WCA are also listed on Schedule 9 to prevent release of non-native and captive individuals, this includes barn owl, red kite, goshawk and corncrake.

Countryside Rights of Way Act 2000 (CRoW Act)

The CRoW Act has amended the WCA in England strengthening the protection afforded to Sites of Special Scientific Interest (SSSI) and the legal protection for threatened species. It adds the word ‘reckless’ to the wording of the offences listed under Section 9(4) of the WCA. This alteration makes it an offence to recklessly commit an offence, where previously an offence had to be intentional to result in a breach of legislation.

¹⁰ To view the current list of Schedule 1 listed birds visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/1> [Accessed July 2020 | 01.03.2017].

Natural Environment and Rural Communities (NERC) Act 2006

Species and Habitats of Principal Importance are listed under Section 41 of the NERC Act 2006 (England). Section 41 2006 (England) lists species that are of principal importance for the conservation of biodiversity , and should be used to guide decision-makers such as local and regional authorities when implementing their duty to have regard for the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006 (England).

The Protection of Badgers Act (1992)

It is an offence to wilfully take, kill, injure, possess or ill-treat a badger. Under the Act their setts are protected against intentional or reckless interference. Sett interference includes damaging or destroying a sett, obstructing access to any part of the sett, or disturbance of a badger whilst it is occupying a sett. The Act defines a badger sett as ‘any structure or place, which displays signs indicating the current use by a badger’ and Natural England (NE) takes this definition to include seasonally used setts that are not occupied but that show sign of recent use by badgers (Natural England, 2009¹¹). If impacts to badgers or their setts are unavoidable then authorised sett disturbance requires a licence.

The UK Post-2010 Biodiversity Framework (2011-2020) (JNCC and DEFRA, 2012)

This Framework lists the UK’s most threatened species and habitats and sets out targets and objectives for their management and recovery. The UK Biodiversity Action Plan (BAP) process is delivered nationally, regionally and locally and should be used as a guide for decision-makers to have regards for the targets set by the framework and the goals they aim to achieve. The UK BAP has now been replaced by the UK Post-2010 Biodiversity Framework, however, it contains useful information on how to characterise important species assemblages and habitats which is still relevant (UK Post-2010 Biodiversity Framework, 2012¹²).

The Conservation of Habitats and Species Regulations 2019 (as amended)

The Conservation of Habitats and Species Regulations 2019 consolidate the Conservation of Habitats and Species Regulations 2010 with subsequent amendments. The Regulations transpose Council Directive 92/43/EEC, on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive), into national law. They also transpose elements of the EU Wild Birds Directive in England. The Regulations came into force on 30th November 2017, and extend to England (including the adjacent territorial sea) and to a limited extent in Scotland (reserved matters) and Northern Ireland (excepted matters). In Scotland, the Habitats Directive is transposed through a combination of the Habitats Regulations 2010 (in relation to reserved matters) and the Conservation (Natural Habitats &c.) Regulations 1994. The Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended) transpose the Habitats Directive in relation to Northern Ireland.

All species listed under Annex IV of the Habitats Directive require strict protection and are known as European Protected Species (EPS). Under Regulation 42 of the Habitats Regulations it is unlawful to:

- Deliberately kill, capture or disturb;
- Deliberately take or destroy the eggs of; and
- Damage or destroy the breeding site/resting place of any species protected under this legislation.

If the Ecologist determines that impacts to an EPS are unavoidable then the works may need to be carried out under a site-specific mitigation licence from Natural England (NE). Low Impact Class licences are also available in England for bats and great crested newts. This enables Registered Low Impact Consultants to undertake certain low impact activities reducing the EPS application paperwork and process length.

Certain EPS are also listed under Annex II of the Habitats Directive and are afforded protection by the establishment of core areas of habitat known as Special Areas of Conservation. This means these species are a relevant consideration in a Habitats Regulations Assessment (HRA).

¹¹ Natural England, June 2009, Protection of Badgers Act 1992 (as amended), Guidance on ‘Current Use’ in the definition of a Badger Sett WMLG17, Natural England, Peterborough.

¹² JNCC and Defra (on behalf of the Four Countries’ Biodiversity Group), July 2012, UK Post-2010 Biodiversity Framework, Available from: http://jncc.defra.gov.uk/pdf/UK_Post2010_Bio-Fwork.pdf [Accessed July 2020 02.03.2017].

The Birds Directive seeks to maintain populations of all wild bird species across their natural range (Article 2). All bird species listed under Annex I¹³ of the Birds Directive are rare or vulnerable and afforded protection by the classification of Special Protection Areas (SPAs), these are also designated under all regularly occurring migratory species, with regard to the protection of wetlands of international importance (Article 4). This means these bird species and communities are a relevant consideration in HRA.

¹³ To view birds listed under Annex I visit: http://ec.europa.eu/environment/nature/conservation/wildbirds/threatened/index_en.htm [Accessed July 2020]

Table A:1: key species and national wildlife legislation, policy and biodiversity framework applicable in England

Species	Legislation, planning policy and UK biodiversity framework							
	Wildlife and countryside act 1981 (as amended), (WCA)				The conservation of /habitats and species regulations 2010 (as amended) (habitats regulations) - regulation 41	Natural environment and rural communities (NERC) act 2006	The protection of badgers act 1992	The UK post-2010 biodiversity framework 2011-2020 (JNCC and Defra, 2012)
	Schedule1	Schedule 5	Schedule 8	Schedule 9	European protected species (annex iv of the EC habitats directive),			
Badger ¹⁴							X	
Bats		X ¹⁵ (part)			X ¹⁶	X ¹⁷		X ¹⁸
Birds	X			X ¹⁹		X ²⁰		X ²¹
Reptiles		X ²² (part) □		X ⁹	X ²³	X ²⁴		X ²⁵

¹⁵ These species are partially protected under section 9(4)(b), (4)(c) and (5).

¹⁶ Only Barbastelle (*Barbastella barbastellus*), Bechstein's bat (*Myotis bechsteinii*), greater horseshoe bat (*Rhinolophus ferrumequinum*) and lesser horseshoe bat (*Rhinolophus hipposideros*) are listed on Annex II of the Habitats Directive.

¹⁷ Greater horseshoe bat, lesser horseshoe bat, Bechstein's bat, noctule (*Nyctalus noctula*), soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*) and barbastelle are listed as Species of Principal Importance in England

¹⁸ Barbastelle bat, Bechstein's bat, noctule, soprano pipistrelle, brown long-eared bat, greater horseshoe bat, lesser horseshoe bat are listed as UK BAP species of bat.

¹⁹ To view plants and animals listed on Schedule 9 Part 1 visit <http://www.legislation.gov.uk/ukpga/1981/69/schedule/9> [accessed July 2020]

²⁰ There are 49 species of birds listed as Species of Principal Importance in England in Section 41 of the NERC Act 2006.

²¹ To view the current list of UK BAP priority birds visit: <http://jncc.defra.gov.uk/page-5163> [Accessed July 2020].

²² The four common reptile species, Adder (*Vipera berus*), Grass snake (*Natrix natrix*), Common lizard (*Zootoca vivipara*) and Slow worm (*Anguis fragilis*) are offered partial protection under section 9(5). The rarer UK reptile species (Smooth snake (*Coronella austriaca*) and Sand lizard (*Lacerta agilis*)) are partially protected under section 9(4)(b) and (c) and (5).

²³ Smooth snake (*Coronella austriaca*) and Sand lizard (*Lacerta agilis*) are the only reptiles to be designated as European Protected Species.

²⁴ All 6 reptile species are listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006 <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

²⁵ To view the current list of UK BAP priority herptile species visit: <http://jncc.defra.gov.uk/page-5166> [Accessed July 2020].

Amphibians		X ²⁶ (part)		X ²⁷	X ^{28, 29}	X ³⁰		
Plants			X ³¹	X ⁹	X ^{32, 33}	X ³⁴		X ³⁵

Table A 1

THE CONSERVATION OF HABITATS AND SPECIES REGULATIONS 2017 (AS AMENDED) (HABITATS REGULATIONS)

All species protected under this legislation are **European Protected Species** and licensing is required for the undertaking of certain activities affecting these species. The protection is applied to all stages of the animals' life.

Under Regulations 39 of the Habitats Regulations it is unlawful to:

- Deliberately kill, capture or disturb;
- Deliberately take or destroy the eggs of; and
- Damage or destroy the breeding site/resting place of any species protected under this legislation.

If impacts to protected species are considered unavoidable then the works may need to be carried out under a site-specific licence from Natural England (NE). Certain displacement operations may be carried out under a Class licence by a registered person in England. In England projects must provide a net benefit for the protected species affected, as site specific licences are issued for the purpose of conservation.

Species listed on **Annex II** of the Habitats Regulations are attributed further protection which means that Special Areas of Conservation (SAC) may be designated to internationally important sites for these species.

²⁶ The four common reptile species, Adder (*Vipera berus*), Grass snake (*Natrix natrix*), Common lizard (*Zootoca vivipara*) and Slow worm (*Anguis fragilis*) are offered partial protection under section 9(5). The rarer UK reptile species (Smooth snake (*Coronella austriaca*) and Sand lizard (*Lacerta agilis*)) are partially protected under section 9(4)(b) and (c) and (5).

²⁷ Common frog (*Rana temporaria*), Common toad (*Bufo bufo*), Smooth newt (*Lissotriton vulgaris*) and Palmate newt (*Lissotriton helveticus*) are offered partial protection under section 9(5). Great crested newt (*Triturus cristatus*) and Natterjack toad (*Epidalea calamita*) are offered partial protection under section 9(4)(b) and (c) and (5). Pool frog (*Pelophylax lessonae*) is offered partial protection under section 9(4)(b) and (c)(1) only and with respect to England only.

²⁸ Great crested newt, Natterjack toad and Pool frog are the only amphibians to be designated European Protected Species.

²⁹ Great crested newt is the only amphibian listed on Annex II of the Habitats Directive.

³⁰ Great crested newt, Natterjack toad and Common toad are listed as Species of Principal Importance in England in Section 41 of the NERC Act 2006 <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

³¹ To view the current list of Schedule 8 listed plants visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/8> [Accessed July 2020].

³² There are nine plant species designated as European Protected Species. To view the current list visit: <http://www.legislation.gov.uk/ukpga/2010/490/schedule/5/made> [Accessed July 2020].

³³ To view the current list of plant species on Annex II of the Habitats Directive visit: <http://jncc.defra.gov.uk/page-1523> [Accessed July 2020].

³⁴ There are currently 152 vascular plants listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006. To view the current list of UK BAP priority plants visit: <http://jncc.defra.gov.uk/page-5171> and <http://jncc.defra.gov.uk/page-5168> [Accessed July 2020].

³⁵ To view the current list of UK BAP priority plants visit: <http://jncc.defra.gov.uk/page-5171> and <http://jncc.defra.gov.uk/page-5168> [Accessed July 2020].

Appendix B

**SUMMARY OF ECOLOGICAL DESK
STUDY DATA**



Protected and notable species (excluding birds) for which records have been identified within 2km

Species common name	Species Latin name	No. of records	Distance and orientation from Site	Legal / Conservation Status ³⁶
Bat sp	-	15	110m north	
Common pipistrelle	<i>Pipistrellus pipistellus</i>	11	1.2km north	
Daubenton's bat	<i>Myotis daubentonii</i>	1	200m south	
Noctule	<i>Nyctalus noctula</i>	2	200m south west	
Pipistrelle sp	-	1	1.3km south east	
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	4	1.0km south	
Unidentified bat sp	-	1	1.8km north east	
Water vole	<i>Arvicola amphibius</i>	4	900m south west	
Eurasian red squirrel	<i>Sciurus vulgaris</i>	2	1.3km south east	
West European hedgehog	<i>Erinaceus europaeus</i>	8	1.2km south	
Great Crested Newt	<i>Triturus cristatus</i>	6	160m south	
Smooth newt	<i>Lissotriton vulgaris</i>	4	Within the Site	
Common frog	<i>Rana temporaria</i>	9	Within the Site	

³⁶ HabReg = Conservation of Habitats and Species Regulations (2017), W&CA = Wildlife and Countryside Act (1981), NERC = Schedule 41 Natural Environment and Rural Communities Act (2006), LBAP = Local Biodiversity Action Plan, RD1 (UK) = UK Red Data Book listing based on IUCN guidelines, RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce).

Protected and notable birds for which records have been identified within 2km

Species common name	Species Latin name	No. of records	Legal / Conservation Status 37

Protected and notable invertebrates for which records have been identified within 2km

Species common name	Species Latin name	No. of records	Legal / Conservation Status 38

³⁷ HabReg = Conservation of Habitats and Species Regulations (2017), W&CA = Wildlife and Countryside Act (1981), NERC = Schedule 41 Natural Environment and Rural Communities Act (2006), LBAP = Local Biodiversity Action Plan, BoCC Red = Birds of Conservation Concern Red List, BoCC Amber = Birds of Conservation Amber List.

³⁸ HabReg = Conservation of Habitats and Species Regulations (2017), W&CA = Wildlife and Countryside Act (1981), NERC = Schedule 41 Natural Environment and Rural Communities Act (2006), LBAP = Local Biodiversity Action Plan, RD1 (UK) = UK Red Data Book listing based on IUCN guidelines, RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally Rare and Scarce).

Appendix C



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PLANT SPECIES RECORDED

Plant species recorded

Latin name	Common name	DAFOR
<i>Acer pseudoplatanus</i>	Sycamore	O
<i>Achillea millefolium</i>	Yarrow	R
<i>Aegopodium podagraria</i>	Ground-elder	R
<i>Agrostis capillaris</i>	Common Bent	O
<i>Agrostis stolonifera</i>	Creeping Bent	F
<i>Angelica sylvestris</i>	Wild Angelica	O
<i>Arrhenatherum elatius</i>	False Oat-grass	O
<i>Artemisia vulgaris</i>	Mugwort	O
<i>Betula pendula</i>	Silver Birch	O
<i>Buddleja davidii</i>	Butterfly-bush	R
<i>Calystegia sepium</i>	Hedge Bindweed	O
<i>Carex hirta</i>	Hairy Sedge	R
<i>Chamaenerion angustifolium</i>	Rosebay Willowherb	F
<i>Cirsium arvense</i>	Creeping Thistle	F
<i>Cirsium palustre</i>	Marsh Thistle	O
<i>Cirsium vulgare</i>	Spear Thistle	O
<i>Cornus sericea</i>	Red-osier Dogwood	R
<i>Corylus avellane</i>	Hazel	R
<i>Cytisus scoparius</i>	Broom	R
<i>Deschampsia caespitosa</i>	Tufted Hair-grass	R
<i>Digitalis purpurea</i>	Foxglove	O
<i>Dryopteris dilatata</i>	Broad Buckler-fern	R
<i>Dryopteris filix-mas</i>	Common Male Fern	O
<i>Dryopteris filix-mas</i> agg.	Male Fern	O
<i>Elymus repens</i>	Common Couch	R
<i>Epilobium montanum</i>	Broad-leaved Willowherb	R

Latin name	Common name	DAFOR
<i>Equisetum arvense</i>	Field Horsetail	F
<i>Ervilla hirsute</i>	Hairy Tare	O
<i>Eupatorium cannabinum</i>	Hemp-agrimony	R
<i>Festuca rubra</i> agg.	Red Fescue	O
<i>Galium aparine</i>	Cleavers	F
<i>Geranium dissectum</i>	Cut-leaved Crane's-bill	R
<i>Geranium mole</i>	Dove's-foot Crane's-bill	R
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Holcus lanatus</i>	Yorkshire-fog	O
<i>Holcus mollis</i>	Creeping Soft-grass	R
<i>Hypericum perforatum</i>	Perforate St. John's-wort	R
<i>Jacobaea vulgaris</i>	Common Ragwort	O
<i>Juncus bufonius</i> agg.	Toad Rush [agg.]	R
<i>Juncus effuses</i>	Soft Rush	O
<i>Juncus inflexus</i>	Hard Rush	R
<i>Lactuca serriola</i>	Prickly Lettuce	O
<i>Lathyrus pratensis</i>	Meadow Vetchling	F
<i>Leontodon autumnalis</i>	Autumnal hawkbit	O
<i>Lotus pedunculatus</i>	Large Bird's-foot-trefoil	F
<i>Lysimachia vulgaris</i>	Yellow Loosestrife	O
<i>Lythrum salicaria</i>	Purple-loosestrife	R
<i>Lythrum salicaria</i>	Purple-loosestrife	R
<i>Melilotus officinalis</i>	Ribbed Melilot	O
<i>Mentha aquatica</i>	Water Mint	R
<i>Myosotis arvensis</i>	Field Forget-me-not	R
<i>Oenothera biennis</i>	Common Evening-primrose	R
<i>Papaver rhoeas</i>	Common Poppy	R

Latin name	Common name	DAFOR
<i>Papaver somniferum</i>	Opium Poppy	R
<i>Persicaria maculosa</i>	Redshank	O
<i>Phalaris arundinacea</i>	Reed Canary-grass	F
<i>Plantago lanceolate</i>	Ribwort Plantain	O
<i>Plantago major</i>	Greater Plantain	R
<i>Populus alba</i>	White Poplar	R
<i>Potentilla reptans</i>	Creeping Cinquefoil	R
<i>Prunella vulgaris</i>	Selfheal	R
<i>Prunus spinosa</i>	Blackthorn	R
<i>Pteridium aquilinum</i>	Bracken	R
<i>Pulicaria dysenterica</i>	Common Fleabane	A
<i>Quercus robur</i>	Pedunculate Oak	O
<i>Ranunculus repens</i>	Creeping Buttercup	A
<i>Ranunculus sceleratus</i>	Celery-leaved Buttercup	R
<i>Reynoutria japonica</i>	Japanese Knotweed	O
<i>Rosa canina</i> agg.	Dog Rose	R
<i>Rubus fruticosus</i> agg.	Bramble	A
<i>Rumex crispus</i>	Curled Dock	F
<i>Rumex obtusifolius</i>	Broad-leaved Dock	O
<i>Salix caprea</i>	Goat Willow	O
<i>Salix cinerea</i>	Grey Willow	A
<i>Salix x fragilis</i>	Crack willow	R
<i>Sambucus nigra</i>	Elder	O
<i>Scrophularia nodosa</i>	Common Figwort	R
<i>Senecio vulgaris</i>	Groundsel	R
<i>Silene dioica</i>	Red Campion	O
<i>Sisymbrium officinale</i>	Hedge Mustard	R

Latin name	Common name	DAFOR
<i>Solanum dulcamara</i>	Bittersweet	R
<i>Sonchus asper</i>	Prickly Sow-thistle	R
<i>Stachys sylvatica</i>	Hedge Woundwort	R
<i>Symphytotrichum lanceolatum x novi-belgii</i> (S. x salignum)	Common Michaelmas-daisy	A
<i>Taraxacum officinale</i> agg.	Dandelion	R
<i>Trifolium dubium</i>	Lesser Trefoil	F
<i>Trifolium pratense</i>	Red Clover	O
<i>Trifolium repens</i>	White Clover	R
<i>Tripleurospermum inodorum</i>	Scentless Mayweed	R
<i>Tussilago farfara</i>	Colt's-foot	R
<i>Typha latifolia</i>	Bulrush	O
<i>Ulex europaeus</i>	Gorse	F
<i>Urtica dioica</i>	Common Nettle	F
<i>Vicia cracca</i>	Tufted Vetch	F
<i>Vicia sativa</i>	Common Vetch	R

Appendix D

TARGET NOTES **wsp**

Target Note 1: Section of wet ditch which has recently been excavated, between the site of a dry pond (Target Note 3) and Briton Plantation. Water is deep at the western end but towards the east it dries before Briton Plantation (Photograph 7).

Target Note 2: Large stand of Japanese knotweed, approximately 150m long and 5-10m wide along the southern site boundary. Eastern is at SJ 43112 97115 with western end finishing at SJ 42993 97126 Stand appears to have been treated in past but most areas now re-growing (Photographs 13 and 14).

Target Note 3: Location of a pond on aerial mapping at SJ 42979 97128. Pond is now dry (Photograph 8) although bulrush *Typha* sp is abundant, along with other aquatic species such as water mint *Mentha aquatica*, celery-leaved buttercup *Ranunculus sceleratus* and ivy-leaved water crowfoot *Ranunculus hederaceus*.

Target note 4: Recently excavated section of dry ditch which links up with a natural watercourse running along southern site boundary (Photograph 10).

Target Note 5: -A previously dense area of willow scrub which has quite recently been cleared. There are piles of logs in the area and wood chippings spread on ground. Most of the willows are now regenerating from cut stumps. (Photograph 3).

Target Note 6: Section of wet ditch running along southern boundary. Mostly shaded and with only 2-10cm of water (Photograph 9).

Appendix E

PHOTOGRAPHS

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Photographs



Photograph 1: Broad-leaved plantation woodland located to the east, outside of the Red Line Boundary of the Site.



Photograph 2: Broad-leaved scattered trees, present along the southern and eastern boundary of the Site.



Photograph 3: Target Note 5, a section of previously dense willow *Salix sp* scrub, which had been recently cleared.



Photograph 4: Between sections of tall ruderal habitat, extensive growth of gorse *Ullex europaeus* was present.



Photograph 5: an area of species poor semi-improved grassland, with little scrub or tall ruderal vegetation present to the west of the Site.



Photograph 6: Areas of tall ruderal habitat were present throughout the Site located within the species poor semi-improved grassland.



Photograph 7: Target Note 1, section of wet ditch which was recently been excavated, between the site of a dry pond and Briton Plantation woodland.



Photograph 8: Target note 3, pond located at SJ 42979 97128 which was present on aerial imagery, but dry at time of survey.



Photograph 9: Target Note 7, section of wet ditch running along southern boundary. Mostly shaded and with only 2-10cm of water.



Photograph 10: Target Note 4, recently excavated section of dry ditch which links up with a natural watercourse running along southern Site boundary.



Photograph 11: Two sections of bare ground present within centre of the Site.



Photograph 11: One of several log piles present in the Site, which could potentially be suitable hibernacula for amphibians and reptiles.



Photograph 13: Target Note 2, large stand of Japanese knotweed located within the south east of the Site. Photograph shows eastern end of stand at SJ 43112 97115. Stand shows previous signs of treatment but has regrowth.



Photograph 14: Target Note 2, large stand of Japanese knotweed located within the south east of the Site. Photograph shows western extent of stand located at SJ 42993 97126. Stand shows previous signs of treatment but has regrowth.



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