



Knowsley Metropolitan Borough Council
(KMBC)

Halewood LUF

Preliminary Ecological Appraisal



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Type of document (version) Public

Project no. 70112144

Our Ref. No. 001

Date: September 2023

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Quality control

Issue/revision	First issue	Revision 1	Revision 2	Revision 3
Remarks				
Date				
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Signature				
Project number	70112144			
Report number	001			
File reference				

Contents

Executive summary

1	Introduction	1
1.1	Background	1
1.2	Scope of report	1
1.3	Relevant legislation and policy	1
2	Methods	3
2.1	Overview	3
2.2	Desk study	3
2.3	Habitat survey	4
2.4	Habitat Condition Assessment	6
2.5	Protected and Priority Species Assessment	6
2.6	Preliminary Bat Roost Assessment	7
2.7	Habitat Suitability Index (HSI) Assessment	8
2.8	Notes and Limitations	9
3	Results	10
3.1	Desk Study	10
3.2	Habitat Survey	13
3.3	Protected and Notable Species Assessment	20
3.4	Bat Roost Assessment	22
4	Discussion and Recommendations	25
4.6	Preliminary Avoidance, Mitigation and Compensation Measures	32
4.7	ECOLOGICAL ENHANCEMENT OPPORTUNITIES	33
5	Conclusions	35

6 References 37

Figures 39

Figure 1 – Site Boundary	39
Figure 2 – Statutory Designated Sites	39
Figure 3 – Non-Statutory Designated Sites	39
Figure 4 - UK Habitat & PBRA Survey Results (Leisure Centre Area)	39
Figure 5 - UK Habitat & PBRA Survey Results (Park & Football Academy Area)	39

Appendices

Appendix A

RELEVANT LEGISLATION

Appendix B

SUMMARY OF ECOLOGICAL DESK STUDY DATA

Appendix C

PLANT SPECIES RECORDED

Appendix D

PHOTOGRAPHS

Appendix E

TARGET NOTES

Appendix F

HSI results

Executive summary

WSP UK Ltd. (WSP) was commissioned by Knowsley Metropolitan Borough Council (KMBC) in August 2023, to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Bat Roost Assessment (PBRA) of two areas of land at Halewood Leisure Centre and Grace Park, within the Halewood area of Knowsley borough, Merseyside.

The 'Site', as referred to within this report, was defined by the red line boundaries as shown in **Figure 1**. The Site was located at central Ordnance Survey (OS) National Grid References SJ 45260 85165 and SJ 44628 85288. The 'Proposed Development' at present, is within the planning phase and includes the refurbishment of Halewood Leisure Centre (an existing building) and development of new recreation/sporting areas, including the building of new retail facilities at Grace Park. All development is to be retained within the existing red line boundaries.

UK Habitat (UKHab) and PBRA surveys of the Site were undertaken on 22nd August 2023, to provide baseline ecological information for the Site. Consideration of the Site's potential to support legally protected or otherwise notable species or habitats was also assessed during the survey. A data search for protected and noteworthy species records was also undertaken as part of a desk study review of existing ecological baseline information.

Three statutory Sites of International importance were recorded within 10km of the Site: Mersey Estuary Special Protection Area (SPA) and Ramsar 4.7km Southeast and Liverpool Bay SPA, 9.8km northwest. No statutory Sites of national importance were recorded within 2km of the Site. Eight non statutory Sites were recorded within 2km of the Site the closest being the Halewood triangle (Local Wildlife Site (LWS)), 0.3km north west from the centre of the Site.

The Site was comprised of modified grassland, lines of trees, other neutral grassland, scrub, buildings, developed sealed/unsealed surface and one pond.

Broad-leaved trees and sections of scrub within the Site have the potential to support nesting birds. It is therefore recommended that any vegetation clearance works associated with the construction of the Proposed Development, are undertaken outside of the breeding bird season (March to August, inclusive). If this is unavoidable, it is recommended that an Ecological Clerk of Works (ECoW) is present on site to undertake pre-commencement checks of vegetation due to be cleared.

A Precautionary Working Method Statement (PWMS) is recommended to ensure works have due regard for badger, bat species, birds, reptiles and amphibians. Implementation of biosecurity measures for INNS is also recommended to safeguard transfer into and beyond the Site.



Specific recommendations and mitigation have been prescribed to ameliorate the effects of the Proposed Development to ensure compliance with relevant legislation and planning policy, where referenced within this PEA. Recommendations include the retention and enhancement of habitats where possible, creation of compensatory habitat where this may occur, and the provision of bat and bird boxes.

It is recommended that a Biodiversity Net Gain (BNG) assessment is undertaken for the Proposed Development so that overall, there is a positive outcome for biodiversity. Landscape plans should be informed by the BNG assessment to ensure gains for biodiversity following development.

The baseline conditions in this report¹ are accurate at the time at which the survey was undertaken. However, should the Proposed Development not commence for a period of 18 months, it is recommended that an update survey be undertaken to confirm conditions, as presented, remain accurate.

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1 Introduction

1.1 Background

- 1.1.1. WSP UK Ltd. (WSP) was commissioned by Knowsley Metropolitan Borough Council (KMBC (the Client)) in August 2023 to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Bat Roost Assessment (PBRA) of two areas of land at Halewood Leisure Centre and Grace Park/Halewood Junior Football Academy, within the Halewood area of Knowsley borough, Merseyside. The two areas of land are hereafter referred to as 'The Site' and measure 13.8Ha in area.
- 1.1.2. The Site is defined by the red line boundary as shown in **Figure 1** and is located at central Ordnance Survey (OS) Grid references SJ 45260 85165 and SJ 44628 85288. The Site is located within a rural setting at the south end of the borough, central to Merseyside County. The Site comprised two areas: Halewood Leisure centre to the east and Grace park & Halewood football academy to the west, with Halewood town centre central to the two areas.
- 1.1.3. At the time of writing the 'Proposed Development' plans include the refurbishment Halewood Leisure Centre (an existing building) and development of new recreation/sporting areas including the building of new retail facilities, at Grace Park. The Proposed Development is to be retained within the existing red line boundary of the Site, with the loss of some existing greenspace predicted (approximately 1.4 ha).

1.2 Scope of report

- 1.2.1. WSP was commissioned by the Client to complete a PEA and PBRA of the Site in August 2023. The brief was:
 - To provide baseline ecological information about the Site with particular reference to whether legally protected and/or notable sites, species or habitats are present or likely to be present;
 - To complete an external inspection of structures and trees within the Site, to identify the potential or otherwise for bat roosts 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. This report 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 (Amendment) (EU Exit) Regulations 2017 (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;
- The Protection of Badgers Act 1992;
- The Hedgerow 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)²;
- The National Planning Policy Framework (NPPF) 2021 (DCLG, 2021);
- Environment Act 2021;
- Knowsley Local Plan 2013.

² 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, 2017a, 2017b and 2018), and UK Habitat Classification Working Group (UKHab Classification Working Group, 2020a); and guidance contained in the British Standard - Code of Practice for Biodiversity and Development BS42020:2013 (British Standards Institute (BSI),2013).
- 2.1.2. This PEA is based on the following data sources:
- An ecological desk study;
 - A habitat survey using UK Habitat (UKHab) Classification methodology;
 - A Preliminary Bat Roost Assessment (PBRA) survey; and
 - A protected/notable species assessment

2.2 Desk study

- 2.2.1. The ecological desk study was undertaken in August 2023 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 CIEEM (2017a, 2017b, and 2020). To provide the baseline data for the ecological desk study, the following information was requested from Merseyside Environmental Advisory Service (MEAS).
- Records of legally protected and notable species (including bats) within 2km of the Site;
 - Records of non-statutory sites designated for nature conservation value within 2km of the Site.
- 2.2.2. Freely downloadable datasets (available from DEFRA's Magic tool³) were consulted for information regarding the presence of statutory designated habitats⁴ within 2km of the Site.

³ <https://magic.defra.gov.uk/>

⁴ Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR) and Local Nature Reserves (LNR).

This search was extended to 10km for Internationally designated sites⁵ that form part of the National Site Network (formerly Natura 2000 sites).

- 2.2.3. A search for Habitats of Principal Importance (HPI)⁶ and woodland listed on the Ancient Woodland Inventory⁷ was also undertaken within 1km of the Site.
- 2.2.4. In addition, open source 1:25,000 Ordnance Survey mapping was used to identify any mapped waterbodies and watercourses within 500m of the Site.
- 2.2.5. A summary of the findings of the desk study have been incorporated within **Section 3** and **Appendix B** of this report and are shown on **Figure 2 and 3**. The full desk study data can be provided on request.
- 2.2.6. The ecological desk study was undertaken by a member of CIEEM, who has completed numerous ecological desk studies within the last year.

2.3 Habitat survey

- 2.3.1. The UKHab survey was carried out by a Qualifying member of CIEEM, with extensive experience over the last three years of completing PEA surveys at a variety of sites.
- 2.3.2. Habitats were described and mapped following the Professional Version 1.1 of UKHab classification survey methodology using the following documents:
 - UKHab Classification User Manual (hereafter 'UKHab User Manual') (Butcher et al., 2020a);
 - UKHab Classification Field Key (Butcher et al., 2020b); and
 - The UKHab Classification Habitat Descriptions Version 1.1 (Butcher et al., 2020b)
- 2.3.3. The UKHab system classifies habitats according to their vegetation types and structure, following a principal hierarchy of 'Primary Habitats' (**Chart 2-1**). Primary Habitats include ecosystems (level 1), broad habitat types (level 2 and 3); defined habitats, including Priority Habitats⁸ (level 4); and further defined habitats, including Annex 1 Habitats⁹ (level 5). Each

⁵ Natura 2000 sites (Special Areas of Conservation (SAC) and Special Protection Areas (SPA)) of European importance and internationally designated Ramsar sites.

⁶ 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.

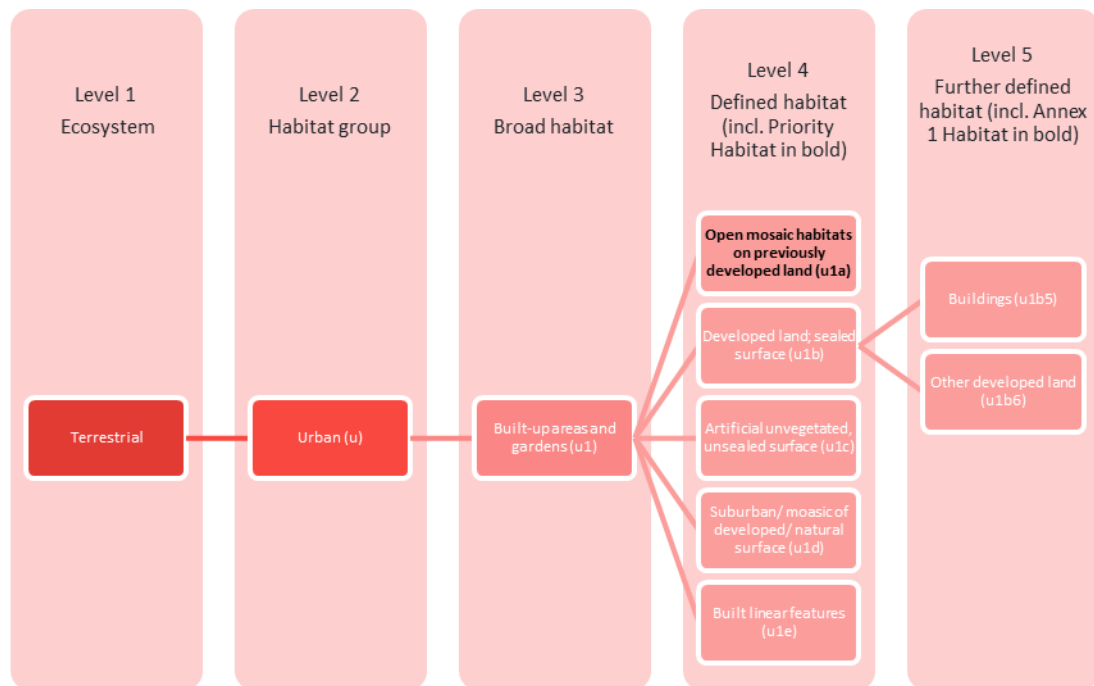
⁷ The ancient woodland inventory in England lists areas over two hectares in size which have been continuously wooded since at least 1600.

⁸ UK Biodiversity Action Plan (UK BAP) priority habitats (JNCC, 2008).

⁹ European Union Habitats Directive 92/43/EEC Annex 1.

Primary Habitat has an alpha-numeric code, unique to UKHab (i.e., different to other habitat survey methods such as Phase 1).

Chart 2-1 - UKHab Primary Hierarchy - example



2.3.4. A non-hierarchical system of numeric codes ('Secondary Codes') can then be used to provide more information on a habitat from the following categories:

- Mosaic habitats;
- Habitat complexities;
- Origin of habitat;
- Management;
- Land use;
- Environmental qualifiers;
- Hydrological regime; and
- Green infrastructure.

- 2.3.5. Primary Habitat and Secondary Codes were assigned to each polygon and line feature within the Site. Text descriptions including plant species for each habitat type were also recorded. A list of plant species was compiled (**Appendix C**), with relative plant species abundance estimated using the DAFOR scale¹⁰. 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**.
- 2.3.6. Habitats were plotted on a Geographical Information System (GIS) mapping application. Target notes were made to provide information on specific features of ecological interest (e.g., bat roosting features) or habitat features too small to be mapped. These are included in **Appendix E**.
- 2.3.7. Any invasive plant species listed on Schedule 9 of the WCA 1981 (as amended) which were evident during the UKHab survey were also target noted. Detailed mapping of such species; or a full survey of the Site for all invasive plant species was beyond the scope of this commission.
- 2.3.8. Data collected as part of this UKHab survey is suitable for use in retrospective biodiversity unit calculations, if required.

2.4 Habitat Condition Assessment

- 2.4.1. Concurrently with recording the habitat type, a Habitat Condition Assessment (HCA) was undertaken for both linear and area habitats.
- 2.4.2. The HCA followed Natural England's Joint Publication 'The Biodiversity Metric 4.0 Technical Supplement' (Natural England, 2023) (hereafter 'Biodiversity Metric 4.0'), which requires habitat condition to be assessed using detailed methodology and tables set out within the document.

2.5 Protected and Priority Species Assessment

- 2.5.1. The potential for the Site to support legally protected and notable species was assessed using desk study results and combined with field observations during the habitat 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 birds (Gilbert et al, 1998 and Bibby et al, 2000); bats (Collins, 2016 and Mitchell-Jones, 2004); otter *Lutra*

¹⁰ 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.

lutra (Chanin, 2003); great crested newt *Triturus cristatus* (Gent and Gibson, 2003 and English Nature, 2001); badger *Meles meles* (Harris et al, 1991 and Roper, 2010); water vole *Arvicola amphibius* (Dean et al. 2016).

2.6 Preliminary Bat Roost Assessment

- 2.6.1. All trees and structures within the Site were inspected to enable an assessment of their suitability to support bat roosts and to search for evidence indicating the current or historic use by roosting bats.
- 2.6.2. A ground-level visual inspection of the exterior of structures and trees using binoculars was undertaken, to search for Potential Roosting Features (PRFs) which may provide suitable roosting opportunities for bats. Where suitable features were noted, their location and a brief description of their character was recorded. Additionally, each feature was visually inspected for evidence indicating use by roosting bats, such as droppings, urine staining, and scratch marks / characteristic staining (from fur oils).
- 2.6.3. Structures and trees were categorised in line with good practice guidance, from the Bat Conservation Trust (BCT) (Collins, 2016), descriptions shown in **Table 2-1**. Based on features present and the location of the structures and trees, the potential for different types of bat roost was considered. For the purpose of this preliminary roost assessment, potential roost types were grouped as follows:
 - Maternity (breeding roost);
 - Summer / transitional (to include transitional, satellite, night and day roosts); and
 - Hibernation.

Table 2-1 – Roost Potential Categorisation

Category	Description
Confirmed	Structure or tree with features confirmed to be used by roosting bats either by historic records (verified appropriately), or evidence recorded during survey.
High	Structure 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	Structure 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.

Category	Description
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.

2.7 Habitat Suitability Index (HSI) Assessment

- 2.7.1. 1 pond located to the east of the Grace park area within the Site was subject to a HSI assessment using current best practice methods (ARG UK, 2010, based on Oldham et al., (2000)). The results of the HSI assessments helped inform the requirement for further surveys.
- 2.7.2. Ponds were assessed and scored on ten key variables which are known to influence breeding populations of GCN, in accordance with standard methods (ARG UK, 2010). These variables are:
- Geographic location;
 - Pond area;
 - Permanence;
 - Water quality;
 - Shading;
 - Impact of waterfowl;
 - Fish stocks;
 - Number of ponds within 1km;
 - Terrestrial habitat around a pond; and
 - Macrophyte cover of a pond.
- 2.7.3. Scores for each of the above variables were used to calculate an overall HSI value for each pond. This was then cross referenced with the guidelines (ARG, 2010) to assign the pond to one of five categories: poor, below average, average, good or excellent. Index calculation is not a failsafe method of identifying whether a pond supports GCN or not; therefore, professional judgement and availability of records of GCN in the locality was also used to inform the requirement for further survey.

2.8 Notes and Limitations

2.8.1. 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 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 UKHab 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 was possible.
- The UKHab habitat map (**Figure 4**) 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

- 3.1.1. The desk study identified three statutory sites of international importance within 10km of the Site. A description of each internationally designated site is detailed in **Table 3-1** below and their location shown in **Figure 2**. No statutory sites of national importance were identified within 2km of the Site.

Table 3-1 – Statutory designated sites of international importance

Site Name	Designation	Size (ha)	Approximate distance and orientation from Site	Description
Mersey Estuary	Ramsar and SPA	5,023.35	4.7km south east, from the centre of the Site,	A large, sheltered estuary which comprises large areas of saltmarsh and extensive intertidal sand and mudflats, with limited areas of brackish marsh, rocky shoreline and boulder clay cliffs, within a rural and industrial environment. The intertidal flats and saltmarshes provide feeding and roosting sites for large and internationally important populations of waterfowl.
Liverpool Bay	SPA	25,2757.73	9.8km north west, from the centre of the Site.	It is classified for the protection of red-throated diver <i>Gavia stellata</i> , common scoter <i>Melanitta nigra</i> , and little gull <i>Hydrocoloeus minutus</i> in the non-breeding season; common tern <i>Sterna hirundo</i> and little tern <i>Sterna albifrons</i> in the breeding season, and an internationally important waterbird assemblage.

Non-statutory Sites

- 3.1.2. The desk study identified eight non-statutory sites within 2km of the Site. A description is detailed in **Table 3-3** below and their location shown in **Figure 3**.

Table 3-3 – Non-statutory designated sites of national importance

Site Name	Designation	Size (ha)	Approximate distance and orientation from Site	Description
Cartbridge Lane Wood	Local Wildlife Site (LWS)	2.2	1.3km north from the centre of the Site	A predominantly broadleaved woodland which has been used as a garden in the past. Many interesting species are present as a result. 1 Priority BAP Habitats, 2 regionally important habitats.
Crab Tree Rough And Hop Yard Wood	LWS	4.1	0.8km south east from the centre of the Site	Predominantly broadleaved woodland with ponds, neutral grasslands and areas of regeneration. 2 regionally important habitats.
Ditton Brook	Local Wildlife Site (LWS)	5	1km north east from the centre of the Site	An open water course providing good water vole habitats. Breeding location for water vole.
Greens Bridge Plantation	LWS	10.9	1.2 km north east from the centre of the Site	A predominantly deciduous woodland with a variety of other habitats including ditches, ponds and acidic grasslands. 1 Priority BAP Habitats, 3 regionally important; 1 locally uncommon.
Halewood Triangle	LWS	30.8	0.3km north west from the centre of the Site	A large site containing many different habitats including broadleaved woodland, wet and dry grasslands, ponds and ditches with breeding amphibians, all of which add to the site's interest. 2

Site Name	Designation	Size (ha)	Approximate distance and orientation from Site	Description
				Priority BAP Habitats, 4 regionally important.
Mill Wood and Alder Wood	Local nature reserve (LNR)	9.8	1.3km south from the centre of the Site	Mill Wood is one of only two Liverpool sites on the Ancient Woodland Inventory, while Alder Wood is of more recent origin. In between the two lies an area of mown, semi-improved grassland and scattered scrub with an area of unimproved grassland to the north of Mill Wood. Three ponds are found within Mill Wood. The Ram's Brook forms the northern boundary of Mill Wood.
Mill Wood and Hopyard Wood	LWS	14.5	1km south east from the centre of the Site	Mill wood is documented as an ancient woodland and there are areas hosting mature pedunculate oak <i>Quercus robur</i> and sycamore <i>Acer pseudoplatanus</i>, although no evidence of veteran trees. Towards the southern boundary Mill Wood hosts predominantly young even aged birch <i>Betula sp.</i> and oak <i>Quercus sp.</i> Hopyard wood is dominated by secondary sycamore woodland with a poor diversity, however further east lies an area of willow and alder <i>Alnus glutinosus</i> carr, with large

Site Name	Designation	Size (ha)	Approximate distance and orientation from Site	Description
				pools of standing water and a good ground flora in parts with species such as marsh marigold <i>Caltha palustris</i> , marsh bedstraw <i>Galium palustre</i> , gipsywort and remote sedge <i>Carex remota</i> .
Ramsbrook Plantation	LWS	2.2	1.7 km south east from the centre of the Site	Broadleaved woodland, the canopy is dominated by common oak <i>Quercus sp.</i> , ash <i>Fraxinus excelsior</i> and sycamore <i>Acer pseudoplatanus</i> with some horse chestnut <i>Aesculus hippocastanum</i> , beech <i>Fagus sylvatica</i> , alder, birch, sweet chestnut <i>Castanea sativa</i> and Scots pine <i>Pinus sylvestris</i> , together with crack willow <i>Salix × fragilis</i> near two of the ponds.

Other Habitats of Conservation Importance

- 3.1.3. One area of woodland listed on the Ancient Woodland Inventory is located 1.4km south east of the Site. No areas of ancient woodland are present within the Site.
- 3.1.4. One habitat of principal importance (HPI) is present within the Site (pond), several areas of deciduous woodland HPI is present within 2km, closest being 0.5km east of the Site.

3.2 Habitat Survey

- 3.2.1. The following account summarises the findings of the UKHab survey. 10 UKHab Primary Habitat types were identified within the Site, which are mapped on **Figure 4 & 5**, and listed in **Table 3-2**, along with areas in hectares (or metres for linear features). A description of the species, composition and management of each habitat is provided further below, and an



indicative species list is provided in **Appendix C**, with photographs provided in **Appendix D**. Numeric codes used in this section refer to the UKHab Classification Primary Habitats (Butcher et al, 2020a). The order of the habitat descriptions below reflects their ordering in the UKHab manual and does not reflect habitat importance.

Table 3-2 – UKHab Habitat Areas

Primary UKHab Habitat	Secondary UKHab Habitat	Area (ha)		Length (m)	% of Site	Photograph
g3c – Other Neutral Grassland	78 (abandoned), 300 (natural and semi-natural open space)	0.38		2.7	1,2	
g4 – Modified grassland	66 (frequently mown), 215 (regional park)	10.60		76.8	3,4,5	
w1g6 – Line of trees			860		6,7,8,9,10	
h3 – Dense Scrub	330 (scrub)	0.07		0.5	11	
h3d – Bramble Scrub	330 (scrub)	0.21		1.4	12	
u1b – Developed land sealed surface	89 (car park), 520 (recreational ground), 532 (artificial ball court), 610	1.87		13.4	13, 14	

	(children's play area), 621 (natural outdoor gym)				
u1b5 – Buildings	90 (commercial building)	0.52		3.8	15,16,17,18,19,20,21,22
u1c – Artificial unvegetated, unsealed surface		0.08		0.6	23,24
u1e – Built linear features	69 (fence), 115 (track)	0.05	2466	0.4	25,26,27
r1- Standing water	362 (artificial lake or pond)	0.06		0.4	28
	TOTAL	13.8		3326	100

The Site comprises two areas of land (AOL), Halewood Leisure Centre and Grace Park/Halewood Junior Football Academy. The following descriptions of each habitat type are grouped by each area of land, although both areas make up the Site and are combined in **Table 3-2** above and detailed in **Figures 4 & 5**.

Halewood Leisure Centre

g4 - Modified grassland

- 3.2.2. Frequently mown, modified grassland is present within the Site and is the dominant habitat surrounding the leisure centre and car park in this AOL (**Appendix D, Photograph 3**). The grassland habitat was dominated by perennial ryegrass *Lolium perenne*, Yorkshire fog *Holcus lanatus* and creeping buttercup *Ranunculus repens*, occasional dock *Rumex sp.* and ribwort plantain *Plantago lanceolata*, white clover *Trifolium repens*, daisy *Bellis perennis* and dandelion *Taraxacum officinale* were occasional. The condition was assessed as moderate due to uniform sward height and low species diversity.

w1g6 - Line of trees

- 3.2.3. Lines of semi-mature trees were present within the AOL near the south and west boundaries; two small lines bordering the entrance road to the east are also present, (**Appendix D, Photographs 6 and 7**). Species present included Norway Maple *Acer platanoides* (dominant), apple *Malus sp* (occasional). The condition was assessed as poor due to large gaps in the canopy and the presence of intensively managed grassland surrounding the trees.

The following urban habitats do not require a condition assessment.

u1b - developed land sealed surface

- 3.2.4. This habitat was present within the AOL as car park, sports, and recreation areas central to the AOL. (**Appendix D, Photograph 13**).

u1b5 - Buildings

- 3.2.5. A two-storey building (B1) was present in the centre of the AOL. The building comprised of brick wall to 3m, with aluminium shuttering extending to full height of approximately 15m. Roof was domed and comprised of aluminium sheeting. A canopy was present around the front and side of the building made from corrugated sheeting. Windows were present on the first story at regular intervals. The brick work and windows were in good condition with no gaps or cracks. Vents present were gridded to prevent access for nesting birds. (**Appendix D, Photograph 15,16 and 17**).
- 3.2.6. Two storage containers (B2 and B3) were present at the south-east corner of the large football area to the north of the AOL (TN2, (**Appendix D, Photograph 18**)).

u1c - Artificial unvegetated, unsealed surface

- 3.2.7. A very small area of this habitat was present at the south east corner of the football pitch on the north of the AOL. Loose rubble is present as a base for two storage containers. (Appendix D, Photograph 18).

u1e - Built linear features

- 3.2.8. Steel railing fencing 2m, is present around the perimeter of the AOL. A sealed footpath is present running from south to north through the AOL. A small 1m railing fence is present around the perimeter of the play area to the west of the car park. The football area to the east of the AOL is surrounded by 3m mesh fencing. (Appendix D, Photograph 25 and 26).

Grace Park/Halewood Junior Football Academy

Habitats are grouped as one area of land (AOL) comprising of Grace Park and Halewood Football Academy, with the two areas separated by a railed fence through the centre.

g3c - Other neutral grassland

This habitat is present mainly at two localised areas at the centre of this AOL. Several smaller areas exist adjacent to the fenced areas around the perimeter and through the centre of the land. Species present within this habitat include frequent perennial ryegrass *Lolium perenne*, Yorkshire fog *Holcus lanatus*, ribwort plantain *Plantago lanceolata*, dandelion *Taraxacum officinale*, cock's foot *Dactylis glomerata* creeping thistle *Cirsium arvense*, common nettle *Urtica dioica*, ragwort *Jacobaea vulgaris*, curly dock *Rumex crispus*, black knapweed *Centaurea nigra*; occasional crested dogs tail *Cynosurus cristatus*, sweet vernal grass *Anthoxanthum odoratum*, tufted hairgrass *Deschampsia cespitosa*, bramble *Rubus fruticosus*, hawthorne *Crataegus monogyna*. Condition assessment for this habitat is moderate due to species composition lacking characteristics of common types and less than 10 species present per metre squared. (Appendix D, Photograph 1 and 2).

g4 - Modified grassland

- 3.2.9. Frequently mown modified grassland is present within the Site and is the dominant habitat within this AOL (Appendix D, Photograph 4 and 5). This habitat is used as football pitches and recreation areas. The grassland habitat was dominated by perennial ryegrass, Yorkshire fog, and creeping buttercup occasional dock, ribwort plantain, white clover, daisy and dandelion. The condition was assessed as moderate due to uniform sward height and low species diversity.

w1g6 - Line of trees

- 3.2.10. This habitat is present in several areas around the perimeter this AOL and also adjacent to a fenced area running through the middle. Species include frequent semi mature sweet chestnut *Castanea sativa*, Norway maple, occasional Silver birch, hornbeam *Carpinus betulus*, ash *Fraxinus excelsior* (western boundary) and juvenile hornbeam, birch. and lime

Tilia x europaea (central area). (**Appendix D, Photograph 8,9 and 10**). Condition assessment for this habitat was moderate due to gaps in canopy and more than 70% of tree's being non-native.

h3 - Dense scrub

- 3.2.11. This habitat is located within a small central area of the AOL adjacent to the northern boundary. (**Appendix D, Photograph 11**). Species present within this habitat was dominated by dogwood *Cornus sanguinea*, occasional alder *Alnus glutinosa*, bramble *Rubus fruticosus* agg., damson *Prunus domestica* subsp. *insititia*, elder *Sambucus nigra*, rosebay willowherb *Chamaenerion angustifolium*. A small area is also present on the southwestern boundary running into bramble scrub. Condition assessment for this habitat is poor due to a lack of mixed ages of the shrubs, a lack of clearings and heavily managed habitat directly adjacent.

h3h - Bramble scrub

- 3.2.12. This habitat is present in several areas around the perimeter this AOL and also adjacent to a fenced area running through the middle. Bramble is the dominant species within this habitat. A condition assessment is not required for this habitat type. (**Appendix D, Photograph 12**)

u1b - developed land sealed surface

- 3.2.13. This habitat is present in a small area to the north of the AOL within a 'play area'. (**Appendix D, Photograph 14**).

u1b5 - Buildings

- 3.2.14. Three single storey buildings were present within this AOL, located adjacent to the south eastern boundary. B4 – shipping container flat roof (negligible PBRA). B5 - modified shipping container with roofing sheets, cladding, UPVC doors and windows (low PBRA). B6 – brick building with flat roof bitumen roof. Wooden door, frame and windows (low PBRA). Condition assessment is not required for this habitat. (**Appendix D, Photograph 19, 20, 21, 22 and 23**). See **Table 3-3** for PBRA assessment.

u1c - Artificial unvegetated, unsealed surface

- 3.2.15. This habitat was present as a small area at the north west of the AOL within the play area. Condition assessment not required. (**Appendix D, Photograph 24**).

u1e - Built linear features

A 2m railing fence bordering the AOL, as well as through the centre separating the football club and park. (**Appendix D, Photograph 27**). Condition assessment not required.

r1 - Standing open water and canals

- 3.2.16. This habitat was present as one pond (P1) within the centre of the AOL, towards the southern boundary of the park. Plant species present included soft rush *Juncus effusus*, birdsfoot trefoil *Lotus corniculatus*, pendulous sedge *Carex pendula*, and cattail *Typha latifolia*. (**Appendix D, Photograph 28**). Condition assessment for this habitat was moderate.

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 survey of habitats within and immediately surrounding the Site. A summary of desk study information is included within **Appendix B**. Further consideration is given below to the likelihood for these species to be present within the Site:

- Bats;
- Birds;
- Badger;
- Amphibians;
- Non-native invasive species

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

Bats

- 3.3.3. The desk study identified 147 records for bats within 2km of the Site. The nearest records were 0.7km from the centre of the Site and included Noctule *Nyctalus noctula*, Brown long eared *Plecotus auritus* Common Pipistrelle *Pipistrellus pipistrellus* and Soprano pipistrelle *Pipistrellus pygmaeus* species. One European Protected Species (EPS) License was issued within 2km of the Site (25344-EPS-MIT, expired 1/09/2021) for Common pipistrelle and allowed for the destruction of a resting place.
- 3.3.4. Numerous trees were present within the Site, all assessed as having negligible suitability for roosting bats. Six buildings were present on Site. B1, B5 and B6 offer low suitability to support roosting bats. B2, B3, B4 and B5 offers negligible suitability to support roosting bats. Suitable commuting and foraging habitat is present within the Site in the form of scrub and grassland habitat ,although this is minimal within the Site, the majority of which is regularly mown ,modified grassland offering poor foraging habitat.
- 3.3.5. The results of the PBRA survey are summarised below within **Section 3.3**. Further recommendations for bats are provided in **Section 4.5**.

Birds

- 3.3.1. The desk study returned 32 records of 23 bird species within 2km from the centre of the Site. Records included six species on the Birds of conservation concern (BOCC) red list, including swift *Apus apus*, tree sparrow *Passer montanus* and lapwing *Vanellus vanellus*. Nine species on the BOCC amber list were also recorded including Kestrel *Falco tinnunculus*, gadwall *Anas strepera* and dunlin *Calidris alpina*.
- 3.3.2. Habitats including lines of trees, scrub and other neutral grassland were present within the Site, which could provide suitable nesting and foraging habitat for a variety of bird species.
- 3.3.3. At the time of survey, no signs of any nesting birds were noted. However, as suitable habitats were found within the Site and some bird species (i.e. pigeons *Columba palumbus*) can attempt to nest all year round, further recommendations for nesting birds have been made in **Section 4.5**.

Badger

- 3.3.4. No records for badger were returned in the desk study data.
- 3.3.5. Habitats present on Site (all areas) including developed land and mown grassland, offer poor habitat for sett creation and are highly disturbed. A small area of scrub present on Site (football academy and Grace Park), offers suitable sett creation habitat. Foraging habitat is present within the Survey Area as grassland and scrub. Further recommendations for badger have been made in **Section 4.5**.

Amphibians

- 3.3.6. 829 records for amphibians including smooth newt *Lissotriton vulgaris*, common frog *Rana temporaria* and common toad *Bufo bufo*, were returned in the desk study data within 2km of the Site. One EPS licence for Great Crested Newt *Triturus cristatus* (GCN) was recorded within 2km of the Site (25445-EPS-MIT; expired 30/06/2018) and allowed for destruction and disturbance of a resting place and breeding site.
- 3.3.7. One waterbody was recorded within the Site (Grace Park) which was subject to a habitat suitability index assessment (**Appendix F**). This waterbody was assessed as below average and no other waterbodies were found within 500m of the Site on aerial imagery or OS mapping. The majority of the habitat within the Site comprised modified grassland. Modified grassland offers limited shelter and foraging habitat for amphibians, however scrub and other neutral grassland present offer suitable terrestrial habitat. Further recommendations for amphibians including GCN have been made in **Section 4.5**.

Reptiles

- 3.3.8. No records of reptiles were returned within 2km from the Site in the desk study data.

- 3.3.9. Habitats within the Site including scrub and unmanaged, other neutral grassland offers suitable sheltering, commuting and foraging habitat for reptiles, especially slow worm *Anguis fragilis*. Further recommendations for reptile have been made in **Section 4.5**.

Invasive Non-Native Species

- 3.3.10. 162 records of invasive non-native species (INNS) were returned within the desk study for non-native invasive plant species within 2km of the Site. These included Japanese Knotweed *Fallopia japonica*, Himalayan Balsam *Impatiens glandulifera* and Japanese rose *Rosa rugosa*. No INNS were recorded during the habitat survey. As the time from the date of survey to developments commencing is unknown, further recommendations for INNS have been made in **Section 4.5**.

3.4 Bat Roost Assessment

Trees

- 3.4.1. Numerous trees were present on Site, All were assessed for potential bat roost features. Results are detailed in **Table 3-3**.

Buildings

- 3.4.2. Six buildings present within the Site (B1-B6), were assessed externally for their suitability to support roosting bats, in accordance with good practice guidance (Collins, 2016). A detailed description of the results of the PBRA is shown below in **Table 3-3**, along with **Photographs 6-10 & 29 (trees) and 15-22 (buildings)** in **Appendix D** Results are displayed on **Figure 4 & 5**.

Table 3-3 – Results of the PBRA Survey

Feature ID	Description	External Potential Roosting Features	Overall Suitability	Evidence of Roosting Bats
B1 – Leisure Centre	A two-story building (B1) was present in the centre of the AOL. The building comprised of block wall to 3m, followed by aluminium shuttering. Roof was domed and comprised of aluminium sheeting. A canopy was	Some small gaps present where canopy sheeting met wall sheets, also in soffits where canopy steel supports meet soffit at the front of building.	Low	None

	present around the front and side of the building made from corrugated sheeting. Windows present on the first story at regular intervals. Brick work and windows in good condition with no gaps or cracks. Vents present were gridded to prevent access.			
B2	Steel shipping container used to store sports equipment. No windows. Flat roof. Single storey.	Well-sealed. In good condition.	Negligible	None
B3	Steel shipping container used to store sports equipment. No windows. Flat roof. Single storey.	Well-sealed. In good condition.	Negligible	None
B4	Steel shipping container, flat roof. No windows. Single storey.	Well-sealed. In good condition.	Negligible	None
B5	Modified steel shipping container. Corrugated sheet roof, single storey. Cladded with UPVC sheeting. UPVC windows and door. Sealed soffits.	Well-sealed. In good condition. Some gaps evident where roofing sheets meet roof.	Low	None

B6	Single storey brick-built operations building. Single wooden door and frame and wooden window frame.	Gaps evident in soffits due to rot.	Low	None
Trees	Numerous semi mature/Mature trees present within lines of trees around Site boundary. One mature poplar <i>Populus sp.</i> tree (T1) present western area of Halewood Leisure centre AOL. Several juvenile lines of trees present along fence lines.	No features present	Negligible	None

4 Discussion and Recommendations

- 4.1.1. This section considers the potential for effects on designated sites, protected and notable species and habitats as a consequence of the Proposed Works. 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. Three statutory sites of international importance were recorded within 10km of the Site, the closest being the Mersey estuary (SPA and Ramsar), 4.7km south east of the Site.
- 4.2.2. The Habitats Regulations provide strict protection to sites of European and/or international importance. This includes requiring projects or plans to be screened for likely significant effects upon SPA, SAC and candidate SACs (cSAC). Guidance also requires potential SPAs (pSPAs) and Ramsars to be subject to the same assessment.
- 4.2.3. At the time of writing, it is understood the Proposed Works are to be contained within the Site. Habitats present within the Site include mown modified grassland (dominant), other neutral grassland, line of trees, scrub, pond and developed land. Although habitat will be lost during development, this will be predominantly modified grassland. This habitat does not act as functionally linked land and is unsuitable for the key species using the designated sites. The use of the Site as a public park and leisure centre will also deter ground foraging and nesting species found at the designated sites. Therefore, due to the scale, localised nature and distance of the Proposed Works from the statutory sites, along with the lack of connectivity to the Site, adverse impacts to the statutory sites are not predicted.
- 4.2.4. Should the scale or location of works change, it is recommended a review of potential impacts is undertaken to determine any need for a Habitats Regulations Assessment or SSSI consent.

4.3 Non-Statutory Designated Sites

- 4.3.1. Eight non-statutory sites are present with 2km of the Site, the closest being the Halewood triangle 0.3km north west from the centre of the Site. The Proposed Works are to be contained within the Site. All non-statutory designated sites are located a sufficient distance from the Site and are not hydrologically connected. It is therefore assessed that they will not be directly affected by the Proposed Works.

4.4 Habitats

- 4.4.1. Under Section 40 of the NERC Act 2006, 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'.
- 4.4.2. The Site contains habitats of low ecological value, comprising modified mown grassland, developed land and buildings as well as higher value habitats such as pond (HPI), neutral

grassland and scrub. Habitat loss within the Site due to the proposed development is envisaged to be of low value. Any habitat loss is recommended to be kept to a minimum.

4.5 Protected and Notable Species

- 4.5.1. The results of the desk study, UKHab survey and protected species assessment highlighted the potential for the Site to support several protected species or species of conservation concern within the Site, or within the immediate surroundings of the Site. These include bats, birds, badger, reptiles and INNS. 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

- 4.5.2. All species of bats recorded within the UK are protected from killing, injury and disturbance¹¹ and their roosts protected from damage or destruction under the Habitats Regulations. Protection is also afforded under the WCA 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.
- 4.5.3. Certain species of bats, including soprano pipistrelle, are also listed as Species of Principal Importance (SPI) for the conservation of biodiversity in England in accordance with Section 41 of the NERC 2006. Section 40 obliges public bodies (including local planning authorities) to have regard for the conservation of biodiversity (including SPI) when discharging their duties (including determining planning applications).
- 4.5.4. Trees are present within the Site as lines around the perimeter with one central (TN1), all were assessed as negligible suitability to support roosting bats. Four buildings are present on Site that were assessed as having negligible suitability to support roosting bats. Three buildings (B1, B5 & B6) are present on Site and were assessed as providing low suitability to support roosting bats.
- 4.5.5. Recommendations for further survey in relation to bats are provided within **Table 4-1** below and preliminary mitigation detailed in **Section 4.5**.

Birds

- 4.5.6. Under the WCA 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

¹¹ 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.

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.

- 4.5.7. The buildings, scrub and trees within the Site may all provide suitable nesting habitat to support breeding birds. In the event of potential disturbance from direct or indirect effects, recommendations to ensure protection of bird species are provided in **Table 4-1** and **Section 4.6** below.

Badger

- 4.5.8. The Protection of Badgers Act 1992 makes it illegal to wilfully kill, injure or take any badger, or attempt to do so. It also makes it an offence to intentionally or recklessly damage, destroy or obstruct access to any part of a badger sett. Activities that would otherwise constitute an offence under this legislation may be licensed by Natural England for certain purposes.
- 4.5.9. At the time of survey, no setts or signs of badger activity were recorded within the Site. Habitats including scrub and grassland were found within the Site, which may provide suitable foraging and sett building habitat for badgers. As such, owing to the highly mobile nature of badgers, and accounting for any delays between the time of survey and the Proposed Works, it is recommended that a Precautionary Working Method Statement PWMS is produced with regard for badgers. This document will set out the risks and guidelines associated with the Proposed Works and outline measures to safeguard badger and ensure there are no breaches of environmental legislation. A pre-works walkover is recommended prior to development. Recommendations are provided in **Table 4-1** and **Section 4.6** below.

Reptiles

- 4.5.10. 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.
- 4.5.11. All reptile species are also listed as SPI in accordance with Section 41 of the NERC Act 2006. Public bodies have an obligation under Section 40 to have regard for these species when carrying out their functions.
- 4.5.12. Habitats within the Site, including scrub and grassland, provide suitable foraging and basking habitat for a number of common reptiles.
- 4.5.13. It is anticipated that the Proposed Works will be contained to areas of existing developed land. Any necessary vegetation clearance works will be minimal to facilitate access and the movement of vehicles and materials to and from the Site.
- 4.5.14. As such, it is recommended that a PWMS be produced for reptiles to set out the risks and guidelines associated with the Proposed Works, and outline measures to safeguard reptiles and ensure there are no breaches of environmental legislation. Recommendations are provided in **Table 4-1** and **Section 4.6** below.

Amphibians

- 4.5.15. Great crested newts are protected from killing, injury and disturbance¹² and their places of rest or shelter (occupied habitat) protected from damage or destruction under the Habitats Regulations. Protection is also afforded under the WCA 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.
- 4.5.16. Great crested newts, common frog, and common toad are also listed as SPI in accordance with Section 41 of the NERC Act 2006. Public bodies have an obligation under Section 40 to have regard for these species when carrying out their functions.
- 4.5.17. A single pond was recorded within the Site. No other ponds were recorded within 500m of the Site. 829 records for amphibians were recorded within 2km of the Site during the desk study. It is understood that this pond will not be affected by the proposed development. The Site contains suitable terrestrial and aquatic habitat for amphibians via pond, scrub and unmanaged other neutral grassland. Terrestrial habitat is likely to be disturbed during development.
- 4.5.18. It is recommended that a PWMS is produced, to set out the risks and guidelines associated with the Proposed Works, and outline measures to safeguard amphibians and ensure there are no breaches of environmental legislation. This will include delivery of a toolbox talk to the contractors on Site with regard to amphibians prior to the start of the Proposed Works.
- 4.5.19. A follow up Environmental DNA (eDNA) survey is recommended to determine if GCN are present within the pond. GCN are a species of principle importance (SPI) (NERC act 2006), confirmation that GCN species are not using this pond is needed due to likely disturbance of terrestrial areas surrounding the pond during development.

Invasive Non-Native Species

- 4.5.20. Species listed under Schedule 9 of the WCA are Invasive Non-Native Species (INNS), and as such it is an offence to plant or otherwise allow these species to grow in the wild.
- 4.5.21. No INNS were recorded on Site during the habitat survey. 116 records of INNS were recorded within 2km of the Site in the desk study search. The Site is also a well-used recreation and dog walk area so there is high potential of transfer from surrounding areas. Due to the likely lapse in time between the initial survey and the start of the Proposed Works, it is recommended that pre-commencement checks are undertaken. If required, it is

¹² 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.



recommended that a licenced contractor is sought to advise, treat, and/or remove INNS plants prior to works commencing. Recommendations are provided before in **Table 4-1** and **Section 4.6** below.

Table 4-1 – Key Ecological Considerations and Further Survey Requirements

Ecological Receptor	Constrains and Impacts of Proposed Works	Further Survey Requirements		Seasonal Constraints
Bats	Removal of lines of trees could cause disruption to bat commuting and foraging habitat.	B1 is categorised as having low bat roost potential but is not due for alteration under proposed development therefore no further survey is needed other than following best practice guidance related to machine operation and lighting. B5 & B6 are categorized as low bat roost potential and are due for removal under the proposed development. An endoscope survey is recommended prior to development to further assess if roosting bats are using these buildings. Further surveys may be required following this survey.		Core bat activity season for foraging and commuting is March to November.
Amphibians	GCN – protected	An eDNA survey of the pond is required as the works will be within 250m of the pond.	15 th April – 30 th June	
Badger	Badgers could be disturbed and/or harmed by the Proposed Works. There is the potential for the Proposed Works to disturb new setts that may be	A pre-construction walkover of the Site for badger is recommended	Survey can be undertaken any time	

Ecological Receptor	Constrains and Impacts of Proposed Works	Further Survey Requirements		Seasonal Constraints
	present, following a lapse in time between the survey and the implementation of the Proposed Works.			

4.6 Preliminary Avoidance, Mitigation and Compensation Measures

4.6.1. To enable compliance with relevant legislation, as described above within **Section 4.2** and **Section 4.5** the following avoidance, mitigation and compensation measures should be designed into the Proposed Works.

- It is recommended that vegetation clearance in grassland, trees, scrub or buildings where nests may be present are undertaken outside the bird nesting season (outside the period March to August, inclusive). If undertaken within this period, it is recommended that a pre-commencement nesting bird check is undertaken by a ECoW. If nests or nesting behaviour are encountered, an appropriate exclusion buffer would be erected within which no works can take place (the size of the buffer would be at the discretion of the ECoW and vary by species). Only once the nest attempt has come to a natural conclusion can the exclusion buffer be removed and works recommence (as confirmed by the ECoW).
- It is recommended that any removal of trees or tree sections is avoided. If unavoidable, removal should be minimised as much as practically possible to limit any effects on foraging and commuting habitat for bats. Operation of machinery likely to indirectly disturb bats via noise should only be operated in daytime hours when bats are less likely to be active.
- Construction should only occur during daylight hours where possible. If this is not possible, the lighting of the Proposed Works should be designed considering nocturnal species such as bats and should retain dark corridors along the Site boundaries. Lighting should use hoods, louvres or other luminaire design features to avoid light spill onto retained and newly created/ reinstated areas of vegetation likely to be used by foraging and commuting species. In addition, narrow spectrum light sources should be used where possible to lower the range of species affected by lighting, specifically avoiding shorter wavelength blue light, using instead warm/neutral colour temperature <4,200 kelvin lighting (BCT, 2018).
- 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.
- It is recommended that a PWMS is produced detailing the biosecurity measures to be implemented throughout the Proposed Works to prevent the potential spread of INNS onto areas of the Site and off-Site. 'Check, Clean and Dry'¹³ Guidance should be

¹³ <https://www.nonnativespecies.org/what-can-i-do/check-clean-dry/>

followed as a minimum. A pre-works walkover of the Site is recommended between March and September to ensure no INNS is present on Site prior to development.

- A PWMS is recommended to be implemented during the Proposed Works, this will detail prescriptive working methods to reduce potential impacts to species including bats, birds, reptiles, amphibians and badger.
- Any potential hibernaculum features for reptiles and amphibians such as log or rubble piles etc, should not be removed between October and March.

Environmental Best Practice

4.6.2. In addition, general environmental protection measures are recommended during the construction phase of the Proposed Works, as outlined by the Construction Industry Research and Information Association guidance (CIRIA, 2015). The following minimum standards must be adhered 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.
- Chemicals and fuels must be stored in secure containers located away from watercourses. 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. Ramps may be provided at one end of any open excavation, in order to allow animals to escape should they fall in.
- 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.
- Retained trees must be protected in accordance with BS5837 Trees in Relation to Design, Demolition and Construction (BS5837, 2012);

4.7 ECOLOGICAL ENHANCEMENT OPPORTUNITIES

- 4.7.1. The National Planning Policy Framework (NPPF) (2021) 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, Knowsley Council aim to “...minimise impact to existing biodiversity and where possible enhance biodiversity within new developments” (Knowsley Local Plan: Core Strategy 2014).

- 4.7.3. It is recommended that a Biodiversity Net Gain (BNG) assessment is undertaken for the Proposed Development so that overall, there is a positive outcome for biodiversity. Landscape plans should be informed by the BNG assessment to ensure gains for biodiversity following development.
- 4.7.4. To encourage compliance with planning policy the following measures are recommended for inclusion within the Proposed Development; where possible:
- 4.7.5. The lighting of the Proposed Development should be designed considering nocturnal species, for example barn owl and bats, and should include dark corridors along the Site boundaries. Lighting should use hoods, louvres or other luminaire design features to avoid light spill onto retained and newly created areas of vegetation likely to be used by foraging and commuting bats. In addition, narrow spectrum light sources should be used where possible to lower the range of species affected by lighting, specifically avoiding shorter wavelength blue light, using instead warm/neutral colour temperature <4,200 kelvin lighting (BCT, 2018).
- 4.7.6. Landscaping associated with the Proposed Development should aim to achieve a measurable gain in biodiversity, as informed by a BNG assessment. 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 and fruit bearing species), e.g green roofs, walls and climbers. Green walls and roofs can provide food and shelter for invertebrates, which in turn can provide food resources for bats and birds. Some green roofs can themselves provide suitable habitat for nesting birds.
- 4.7.7. Provision of bird boxes to replace trees and scrub lost to facilitate construction of the Proposed Development.

5 Conclusions

- 5.1.1. Three statutory sites of international importance were found within 10km of the Site. The Proposed development will fall within the Site with low value modified grassland the main habitat lost, providing unsuitable habitat for species within the designated sites.
- 5.1.2. Eight non-statutory designated sites were found within 2km of the Site. Due to the distance from the Site, the lack of hydrological connectivity, and the small-scale nature of the Proposed Works, no negative effects are anticipated on these designated sites.
- 5.1.3. The Site was found to consist of a range of habitats, including modified grassland, other neutral grassland, scrub, lines of trees, sealed and unsealed developed land, six buildings and a pond.
- 5.1.4. Recommendations have been made for further survey and mitigation to enable compliance with relevant legislation. Recommendations include, dependent on the finalised scope of the Proposed Works, a pre-works check for nesting birds (depending on the timing of the works) will be required for any suitable vegetation removal or disturbance to buildings which are suitable for birds to utilise for nesting.
- 5.1.5. An endoscope survey is required on building 5 and 6 located in the football club area within the Site. The buildings were assessed as 'low' potential for bat roost suitability and further assessment is recommended via endoscope inspection to confirm potential or downgrade features. Further surveys in the form of nocturnal emergence/return surveys may be required following the endoscope survey. All trees were assessed as negligible for bat roosting suitability.
- 5.1.6. Broad-leaved trees and sections of scrub within the Site have the potential to support nesting and breeding birds. It is therefore recommended that any vegetation clearance works associated with the construction of the Proposed Development are undertaken outside of the nesting bird season (March to August, inclusive). If this is unavoidable, it is recommended that an Ecological Clerk of Works (ECoW) is present on site to undertake pre-commencement checks of vegetation due to be cleared.
- 5.1.7. A PWMS is recommended to ensure works have due regard for and safeguard badger and bat species, birds, reptiles, and amphibians. This should include implementation of biosecurity measures for INNS and environmental best practice measures to reduce direct impacts to ecological receptors are also recommended.
- 5.1.8. It is recommended that a BNG assessment is undertaken for the Proposed Development so that overall, there is a positive outcome for biodiversity, due to the envisaged loss of habitat through development. Landscape plans should be informed by the BNG assessment to ensure gains for biodiversity following development.

- 5.1.9. The baseline conditions in this report are accurate at the time at which the survey was undertaken¹⁴. However, should the Proposed Works not commence for a period of one year, it is recommended that an update survey be undertaken to confirm there have been no significant changes.

¹⁴ WSP have provided this report solely for the use of the recipient and accepts no liability to any third parties or any other party using or reviewing the report or any part thereof. WSP makes no warranties or guarantees, actual or implied, in relation to this report, or the ultimate commercial, technical, economic, or financial effect on the project to which it relates, and bears no responsibility or liability related to its use other than as set out within the scope of the contract under which it was supplied.

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Figures

Figure 1 - Site Boundary

Figure 2 - Statutory Designated Sites

Figure 3 - Non-Statutory Designated Sites

Figure 4 - UK Habitat & PBRA Survey Results (Leisure Centre Area)

Figure 5 - UK Habitat & PBRA Survey Results (Park & Football Academy Area)



Key
 Site Boundary



Client:
Knowsley Metropolitan Borough Council
(KMBC)

Project:
Halewood LUF

Title:
Location Plan

Drawing No:	Figure 1	Drawn:	GA
Date:	07/09/2023	Checked:	SC
Scale:	3,911 @ A3	Approved:	MN



- Key
- Site Boundary
 - 10km buffer
 - Special Protection Area (Eng)
 - Ramsar Site - Wetland of International Importance (Eng)



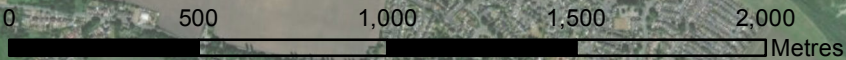
Client:	Knowsley Metropolitan Borough Council (KMBC)		
Project:	Halewood LUF		
Title:	Statutory Designated Sites		
Drawing No:	Figure 2	Drawn:	GA
Date:	07/09/2023	Checked:	SC
Scale:	80,000 @ A3	Approved:	MN

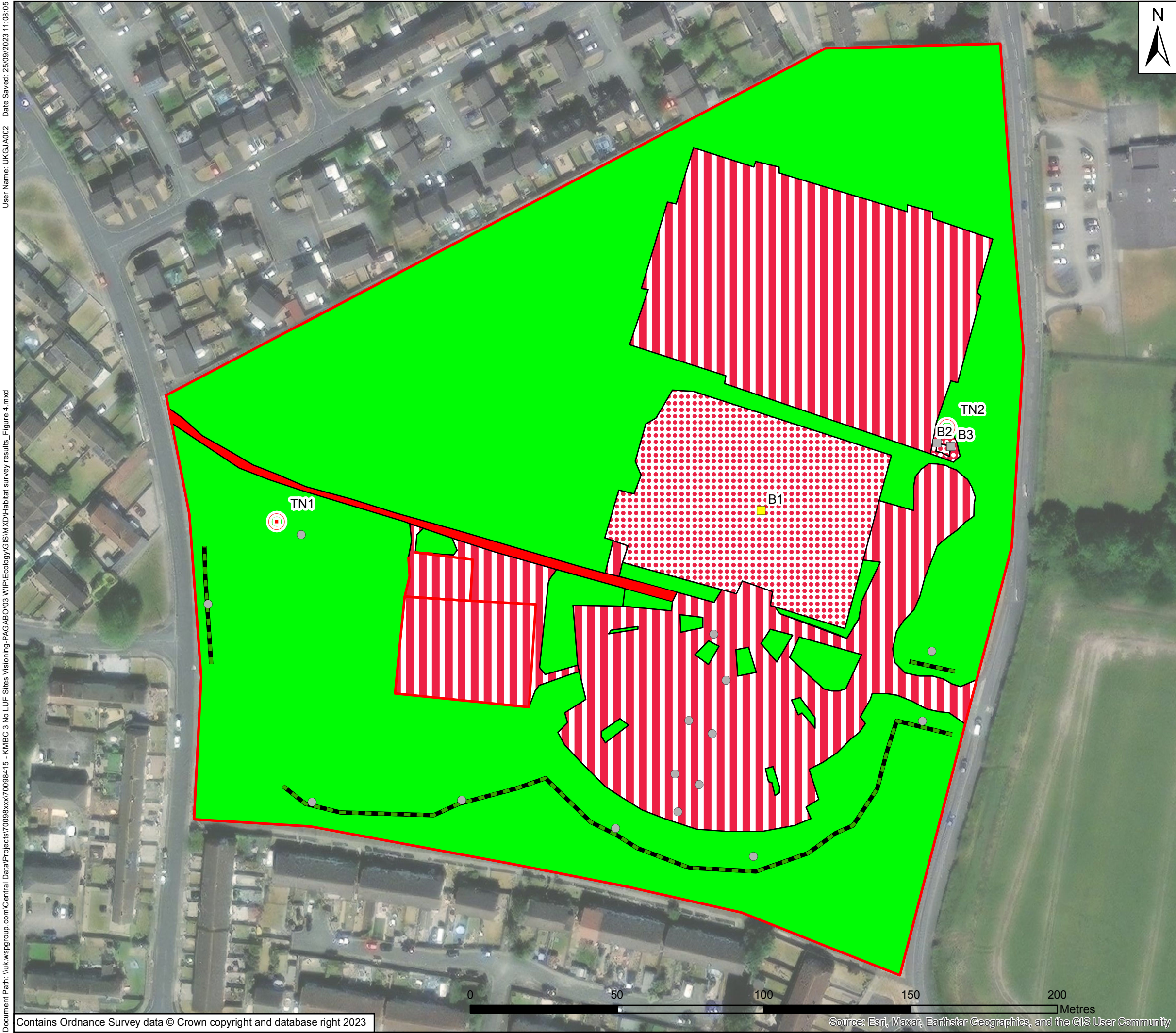


- Key
- Site Boundary
 - 2km Buffer
 - Local Wildlife Sites (LWS)



Client:	Knowsley Metropolitan Borough Council (KMBC)		
Project:	Halewood LUF		
Title:	Non Statutory Designated Sites		
Drawing No:	Figure 3	Drawn:	GA
Date:	07/09/2023	Checked:	SC
Scale:	20,000 @ A3	Approved:	MN





- Key
- Site Boundary
 - g4 - modified grassland
 - u1b - developed land, sealed surface
 - u1b5 - buildings
 - u1c - artificial unvegetated unsealed surface
 - u1e - built linear features
 - u1e Built linear features (fence)
 - w1g6 - Line of trees
 - Negligible PBRA (Buildings)
 - Negligible PBRA (Trees)
 - Low PBRA (Buildings)
 - Target Notes



Client:
Knowsley Metropolitan Borough Council
(KMBC)

Project:
Halewood LUF

Title:
UK Habitat & PBRA Survey Results
Leisure Centre Area

Drawing No:	Figure 4	Drawn:	GA
Date:	25/09/2023	Checked:	SC
Scale:	1,250 @ A3	Approved:	MN



N

Key

Site Boundary

g3c - other neutral grassland

g4 - modified grassland

h3 - dense scrub

r1 - standing open water and canals

u1b - developed land, sealed surface

u1b5 - buildings

u1c - artificial unvegetated unsealed surface

u1e Built linear features (fence)

w1g6 - Line of trees

Negligible PBRA (Buildings)

Negligible PBRA (Trees)

Low PBRA (Buildings)

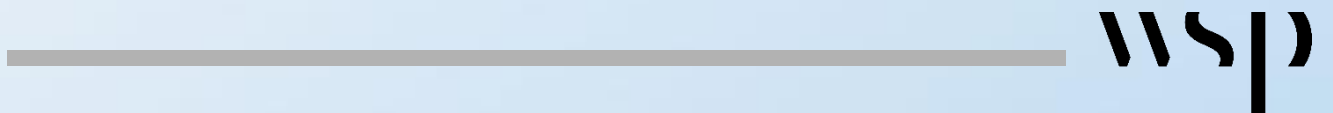
Target Notes



Client:	Knowsley Metropolitan Borough Council (KMBC)		
Project:	Halewood LUF		
Title	UK Habitat & PBRA Survey Results Park and Football Academy Area		
Drawing No:	Figure 5	Drawn:	GA
Date:	25/09/2023	Checked:	SC
Scale:	1,425 @ A3	Approved:	MN

Appendix A

RELEVANT LEGISLATION



ENGLAND & WALES 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 and Wales) 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 WCA¹⁵ 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.

¹⁵ To view the current list of Schedule 1 listed birds visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/1> [Accessed June 2023]

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 and Wales 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.

Natural Environment and Rural Communities (NERC) Act 2006

Species and Habitats of Principal Importance in England and Wales are listed under Section 41 and Section 42 respectively of the NERC Act. The Section 41 and 42 lists detail species that are of principal importance for the conservation of biodiversity in England and Wales, 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.

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, 2009¹⁶)

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, 2012¹⁷).

The Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 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 and Wales. The Regulations came into force on 30th November 2017, and extend to England and Wales (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.

¹⁶ 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.

¹⁷ 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 June 2023]



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) or Natural Resources Wales (NRW). Low Impact Class licences are also available in both England and Wales 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).

The Birds Directive seeks to maintain populations of all wild bird species across their natural range (Article 2). All bird species listed under Annex I¹⁸ 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.

Table A:1: Key Species and National Wildlife Legislation, Policy and Biodiversity Framework Applicable in England & Wales								
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 Regulation–) - Regulation 41	Natural Environment and Rural Communities (NERC) Act 2006 / The Environment (Wales) Act (2016)	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							☐	
Bats		☐ ¹⁹ (part)			☐ ²⁰	☐ ²¹		☐ ²²

¹⁸ To view birds listed under Annex I visit: http://ec.europa.eu/environment/nature/conservation/wildbirds/threatened/index_en.htm [accessed June 2023]

¹⁹ These species are partially protected under section 9(4)(b), (4)(c) and (5).

²⁰ 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.

²¹ 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 with the addition of common pipistrelle (*Pipistrellus pipistrellus*) in Wales listed under

Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

²² 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.

Table A:1: Key Species and National Wildlife Legislation, Policy and Biodiversity Framework Applicable in England & Wales

Species	Legislation, Planning Policy and UK Biodiversity Framework							
Hazel Dormouse		□ 5(part)			□	□		□
Otter		□ 5(part)			□	□		□
Water vole		□ 23(full)				□		□
Birds	□			□ 24		□ 25		□ 26
Reptiles		□ 27(part) □		□ 9	□ 28	□ 29		□ 30
Amphibians		□ 31(part)		□ 32	□ 33, 34	□ 35		
White-clawed Crayfish		□ 36(partial)			□ 37	□		□

23 Class Licences are available to Registered Consultants to intentionally disturb, damage or destroy water vole burrows or to displace water voles from their burrows in relation to a development proposal where the licensed action provides a conservation benefit for water voles. Certain displacement operations may be carried out under a Class licence by a registered person in England, however in Wales all displacement operations must be carried out under a site specific licence.

24 To view plants and animals listed on Schedule 9 Part 1 visit <http://www.legislation.gov.uk/ukpga/1981/69/schedule/9> [accessed 6 April 2017]

25 There are 49 species of birds listed as Species of Principal Importance in England in Section 41 of the NERC Act 2006 and 51 species in Wales under Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

26 To view the current list of UK BAP priority birds visit: <http://jncc.defra.gov.uk/page-5163> [Accessed June 2023].

27 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).

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

29 All 6 reptile species are listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006 and 5 species, excluding smooth snake, listed under Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

30 To view the current list of UK BAP priority herptile species visit: <http://jncc.defra.gov.uk/page-5166> [Accessed June 2023].

31 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).

32 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.

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

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

35 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 and under Section 7 of the Environment (Wales) Act (2016) <http://www.legislation.gov.uk/ukpga/2006/16/contents>.

36 Under the Wildlife and Countryside Act it is illegal to take or sell white clawed crayfish under the WCA. A licence is required to survey (hand net or trap) for the species. To undertake work within WCC inhabited rivers a Class Licence maybe issued by the relevant authority to move WCC away from harm prior to works. Although WCC are not protected from killing or injury Natural England state in their Class licence that due to declining numbers all efforts should be made to conserve the species.

37 White clawed crayfish are listed under Annex II and V of the Habitats Directive.

Table A:1: Key Species and National Wildlife Legislation, Policy and Biodiversity Framework Applicable in England & Wales

Species	Legislation, Planning Policy and UK Biodiversity Framework							
Invertebrates		³⁸ (full/part)			^{39, 40}	⁴¹		⁴²
Fish		⁴³ (full/part)		⁹	^{44, 45}	⁴⁶		⁴⁷
Plants			⁴⁸	⁹	^{49, 50}	⁵¹		⁵²

³⁸ To view the current list of invertebrates that are protected under this Act either in part or full visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/5> [Accessed June 2023].

³⁹ The Large blue butterfly (*Maculinea arion*), Fisher’s estuarine moth (*Gortyna borelii lunata*) and Lesser whirlpool ram’s-horn snail (*Anisus vorticulus*) are the only invertebrates to be designated European Protected Species.

⁴⁰ There are currently twelve invertebrates listed in Annex II of the Habitats Directive; White-clawed crayfish (*Austropotamobius pallipes*), Southern damselfly (**Coenagrion mercuriale**), Marsh fritillary butterfly (**Eurodryas aurinia**), Violet click beetle (**Limoniscus violaceus**), Stag beetle (**Lucanus cervus**), Freshwater pearl mussel (**Margaritifera margaritifera**), Narrow-mouthed whorl snail (**Vertigo angustior**), Round-mouthed whorl snail (**Vertigo genesii**), Geyer’s whorl snail (**Vertigo geyeri**), Desmoulin’s whorl snail (**Vertigo moulinsiana**), Lesser whirlpool ram’s-horn snail (*Anisus vorticulus*) and Fisher’s estuarine moth (*Gortyna borelii lunata*).

⁴¹ There are currently 379 invertebrate species (not including marine species) listed as Species of Principal Importance in England http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&ved=0ahUKEwivvu7J9trSAhXiCsAKHX4TBGcQFggvMAM&url=http%3A%2F%2Fpublications.naturalengland.org.uk%2Ffile%2F6518755878240256&usg=AFQjCNEpiUWYuOqhVcfSDvi_3iK2TJytfQ and 188 species in Wales http://www.eryri-npa.gov.uk/_data/assets/pdf_file/0003/486156/SpeciesList.pdf listed under Section 41 of the NERC Act 2006 and listed under Section 7 of the of the Environment (Wales) Act 2016. [Accessed June 2023]

⁴² To view the current list of UK BAP priority invertebrates visit: <http://jncc.defra.gov.uk/page-5169> [Accessed June 2023].

⁴³ To view the current list of fish either part or fully protected under the Act visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/5> [Accessed June 2023].

⁴⁴ Sturgeon (*Acipenser sturio*) is the only fish to be designated a European Protected Species.

⁴⁵ There are eight fish species listed on Annex II of the Habitats Directive. To view the current list visit: <http://jncc.defra.gov.uk/page-1523> [Accessed June 2023].

⁴⁶ There are 35 species of fish listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006 and 10 species in Wales listed under Section 7 of the Environment (Wales) Act 2016.

⁴⁷ To view the current list of UK BAP priority fish visit: <http://jncc.defra.gov.uk/page-5164> [Accessed June 2023].

⁴⁸ To view the current list of Schedule 8 listed plants visit: <http://www.legislation.gov.uk/ukpga/1981/69/schedule/8> [Accessed June 2023].

⁴⁹ 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 June 2023].

⁵⁰ To view the current list of plant species on Annex II of the Habitats Directive visit: <http://jncc.defra.gov.uk/page-1523> [Accessed June 2023]

⁵¹ There are currently 152 vascular plants listed as Species of Principal Importance in England listed under Section 41 of the NERC Act 2006 and 77 species in Wales listed under Section 7 of the Environment (Wales) Act 2016.³¹ 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 June 2023].

⁵² 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 June 2023].

Appendix B

SUMMARY OF ECOLOGICAL DESK STUDY DATA

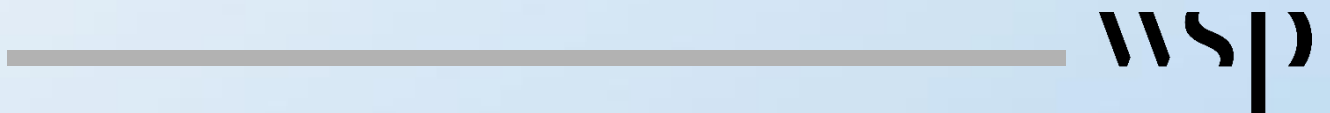


Table B-1 - Protected and Notable species (excluding birds for which records have been identified within 2km)

Species common name	Species Latin name	No. of records	Distance from Site in km (nearest record)	Legal / Conservation Status ⁵³
Bat	<i>Chiroptera</i>	1	1.7km, north west	HabDir-A2*, HabDir-A4; UKBAP-2007; WACA-Sch5_sect9.4b, WACA-Sch5_sect9.5a, WACA-Sch5Sect9.4c; England_NERC_S.41; HabReg-Sch2; LBAP
Brown Hare	<i>Lepus europaeus</i>	23	1.6km, north east	
Brown Long-eared Bat	<i>Plecotus auritus</i>	1	2km south east	
Common Frog	<i>Rana temporaria</i>	713	0.4km north east	
Common Pipistrelle	<i>Pipistrellus pipistrellus</i>	22	0.7km, south east	
Common Toad	<i>Bufo bufo</i>	18	0.04km, west	
Eastern Grey Squirrel	<i>Sciurus carolinensis</i>	236	0.5km, north west	
Eurasian Otter	<i>Lutra lutra</i>	1	1.7km north west	
European Mole	<i>Talpa europaea</i>	8	1.6km south east	
European Rabbit	<i>Oryctolagus cuniculus</i>	2	1.4km south east	
European Water Vole	<i>Arvicola amphibius</i>	2	1.8km north east	
Noctule Bat	<i>Nyctalus noctula</i>	3	1km north west	

⁵³ HabReg = Conservation of Habitats and Species Regulations 2017 (as amended), 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).

Pipistrelle	<i>Pipistrellus pipistrellus</i>	116	1.6km north	
Pipistrelle Bat species	<i>Pipistrellus</i>	3	1.5 km north	
Smooth Newt	<i>Lissotriton vulgaris</i>	98	0.5km, north west	
Soprano Pipistrelle	<i>Pipistrellus pygmaeus</i>	1	1.7km west	
West European Hedgehog	<i>Erinaceus europaeus</i>	533	0.2km, north west	

Table B-2 – Protected and notable bird species for which records have been identified within 2km

Species common name	Species Latin name	No. of records	Legal / Conservation Status ⁵⁴
Blackbird	<i>Turdus merula</i>	6	W&CA
Collared Dove	<i>Streptopelia decaocto</i>	1	W&CA
Coot	<i>Fulica atra</i>	1	W&CA
Dunlin	<i>Calidris alpina</i>	1	BOCC red, W&CA
Dunnock	<i>Prunella modularis</i>	1	BOCC amber, W&CA
Gadwall	<i>Anas strepera</i>	1	BOCC amber, W&CA
Kestrel	<i>Falco tinnunculus</i>	3	BOCC amber, W&CA
Lapwing	<i>Vanellus vanellus</i>	1	BOCC red, W&CA
Magpie	<i>Pica pica</i>	2	W&CA
Mallard	<i>Anas platyrhynchos</i>	1	BOCC amber W&CA
Moorhen	<i>Gallinula chloropus</i>	1	BOCC amber W&CA
Pied Wagtail	<i>Motacilla alba subsp. yarrellii</i>	1	W&CA
Ringed Plover	<i>Charadrius hiaticula</i>	1	BOCC red W&CA
Shelduck	<i>Tadorna tadorna</i>	1	W&CA
Shoveler	<i>Anas clypeata</i>	1	BOCC amber W&CA

⁵⁴ HabReg = Conservation of Habitats and Species Regulations 2017 (as amended), 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.

Skylark	<i>Alauda arvensis</i>	1	BOCC red W&CA
Swallow	<i>Hirundo rustica</i>	1	W&CA
Swift	<i>Apus apus</i>	1	BOCC red W&CA
Teal	<i>Anas crecca</i>	1	BOCC amber W&CA
Tree Sparrow	<i>Passer montanus</i>	1	BOCC red W&CA
Wheatear	<i>Oenanthe oenanthe</i>	1	BOCC amber W&CA
White Wagtail	<i>Motacilla alba subsp. alba</i>	1	W&CA
Woodpigeon	<i>Columba palumbus</i>	2	BOCC amber W&CA

Table B-3 – Protected and notable invertebrate species for which records have been identified within 2km

Species common name	Species Latin name	No. of records	Legal / Conservation Status ⁵⁵
Alder Leaf Beetle	<i>Agelastica alni</i>	61	UKBAP-2007; England_NERC_S.41
Azure Damselfly	<i>Coenagrion puella</i>	12	UKBAP-2007; England_NERC_S.41
Banded Demoiselle	<i>Calopteryx splendens</i>	9	UKBAP-2007; England_NERC_S.41
Beet Moth	<i>Scrobipalpa ocellatella</i>	1	UKBAP-2007; England_NERC_S.41
Blue-tailed Damselfly	<i>Ischnura elegans</i>	12	UKBAP-2007; England_NERC_S.41

⁵⁵ HabReg = Conservation of Habitats and Species Regulations 2017 (as amended), 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).

Broad-bodied Chaser	<i>Libellula depressa</i>	6	UKBAP-2007; England_NERC_S.41
Brown Hawker	<i>Aeshna grandis</i>	14	UKBAP-2007; England_NERC_S.41
Brown-spot Pinion	<i>Anchoscelis litura</i>	4	UKBAP-2007; England_NERC_S.41
Buff Ermine	<i>Spilosoma lutea</i>	44	UKBAP-2007; England_NERC_S.41
Bulrush Veneer	<i>Calamotropha paludella</i>	2	UKBAP-2007; England_NERC_S.41
Cercyon littoralis	<i>Cercyon littoralis</i>	1	UKBAP-2007; England_NERC_S.41
Common Blue Damselfly	<i>Enallagma cyathigerum</i>	4	UKBAP-2007; England_NERC_S.41
Common Darter	<i>Sympetrum striolatum</i>	34	UKBAP-2007; England_NERC_S.41
Emperor Dragonfly	<i>Anax imperator</i>	2	UKBAP-2007; England_NERC_S.41
Large Red Damselfly	<i>Pyrrhosoma nymphula</i>	3	UKBAP-2007; England_NERC_S.41
Migrant Hawker	<i>Aeshna mixta</i>	5	UKBAP-2007; England_NERC_S.41
Polydrusus formosus	<i>Polydrusus formosus</i>	3	UKBAP-2007; England_NERC_S.41
Red-eyed Damselfly	<i>Erythromma najas</i>	3	UKBAP-2007; England_NERC_S.41
Sallow	<i>Cirrhia icteritia</i>	2	UKBAP-2007; England_NERC_S.41
Shoulder-striped Wainscot	<i>Leucania comma</i>	9	UKBAP-2007; England_NERC_S.41
Southern Hawker	<i>Aeshna cyanea</i>	7	UKBAP-2007; England_NERC_S.41

Swallowtail	<i>Papilio machaon</i>	1	UKBAP-2007; England_NERC_S.41
Wall	<i>Lasiommata megera</i>	1	UKBAP-2007; England_NERC_S.41

Appendix C

PLANT SPECIES RECORDED

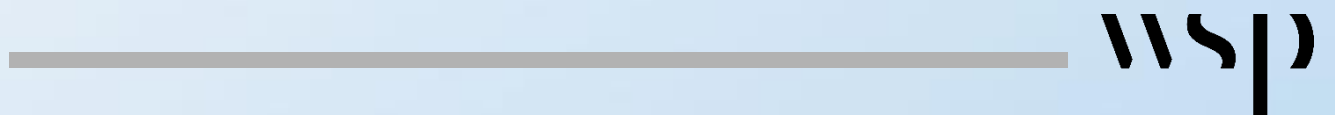


Table C-1 - Plant Species Recorded

Common Name		Latin Name	Frequency (DAFOR)
g3c – Other neutral grassland			
Bindweed	<i>Convolvulus arvensis</i>	O	
Birds foot trefoil	<i>Lotus corniculatus</i>	R	
Bramble	<i>Rubus fruticosus</i>	O	
Cocks foot	<i>Dactylus glomerata</i>	O	
Common nettle	<i>Urtica dioica</i>	O	
Creeping buttercup	<i>Ranunculus repens</i>	O	
Creeping thistle	<i>Cirsium arvense</i>	F	
Crested dogstail	<i>Cynosurus cristatus</i>	R	
Dandelion	<i>Taraxcum officinale</i>	F	
Dock	<i>Rumex sp.</i>	O	
Hawthorn	<i>Crateagus monogyna</i>	R	
Perennial ryegrass	<i>Lolium perenne</i>	F	
Privet	<i>Ligustrum sp.</i>	R	
Ragwort	<i>Jacobaea vulgaris</i>	F	
Red Clover	<i>Trifolium pratense</i>	O	
Ribwort plantain	<i>Plantago lanceolata</i>	F	
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	R	

Teasel	<i>Dipsacus fullonum</i>	O
Tufted hairgrass	<i>Deschampsia cespitosa</i>	O
Yorkshire fog grass	<i>Holcus lanatus</i>	F
g4 – Modified grassland		
Creeping buttercup	<i>Ranunculus repens</i>	O
Daisy	<i>Bellis perennis</i>	O
Dandelion	<i>Taraxcum officinale</i>	O
Dock	<i>Rumex sp.</i>	O
Perennial ryegrass	<i>Lolium perenne</i>	D
Ribwort plantain	<i>Plantago lanceolata</i>	O
White clover	<i>Trifolium repens</i>	O
Yorkshire fog grass	<i>Holcus lanatus</i>	D
w1g6 – Line of trees		
Alder	<i>Alnus glutinosa</i>	O
Ash	<i>Fraxinus excelsior</i>	O
Birch	<i>Betula sp.</i>	O
Bradford pear	<i>Pyrus calleryana</i>	R
Cherry	<i>Prunus avium</i>	R
Cigar Tree	<i>Catalpa speciosa</i>	R
Elder	<i>Sambucus nigra</i>	O
Goat Willow	<i>Salix caprea</i>	R
Hornbeam	<i>Carpinus betulus</i>	F
Lime	<i>Tilia × europaea</i>	F
London plane	<i>Platanus × acerifolia</i>	R

Newcastle Hawthorne	<i>Crataegus crus-galli</i>	R
Norway Maple	<i>Acer platanoides</i>	D
Rowan	<i>Sorbus aucuparia</i>	R
Sweet chesnut	<i>Castanea sativa</i>	F
Sycamore	<i>Acer pseudoplatanus</i>	O
Whitebeam	<i>Sorbus aria</i>	R
h3 – Dense Scrub		
Bramble	<i>Rubus fruticosus</i>	D
Damson	<i>Prunus domestica</i> <i>subsp. insititia</i>	O
Dogwood	<i>Cornus sanguinea</i>	F
Elder	<i>Sambucus nigra</i>	O
Ivy	<i>Hedera helix</i>	O
Rose	<i>Rosa sp.</i>	O
h3d – Bramble Scrub		
Bramble	<i>Rubus fruticosus.</i>	D
r1 – Standing Water		
Birdsfoot trefoil	<i>Lotus corniculatus</i>	O
Cattail	<i>Typha</i>	F
Pendulous sedge	<i>Carex pendula</i>	O
Soft rush	<i>Juncus effusus</i>	O

Appendix D

PHOTOGRAPHS

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Table D-1 - Survey Photographs

	
Photograph 1 – Other neutral grassland on the western boundary eventually running into scrub.	Photograph 2 – Other neutral grassland, one of two localised areas containing grass and ruderal species with planted juvenile tree's.
	
Photograph 3 – Modified grassland comprising the dominant habitat in the Leisure Centre area of land within the Site.	Photograph 4 – Modified grassland comprising the dominant habitat within the football club area of land within the Site.



Photograph 5 – Modified grassland comprising the dominant habitat with the park area within the Site.



Photograph 6 – Norway maple line of trees around the perimeter of the Leisure centre area within the Site.



Photograph 7 – Line of Pear and Apple trees near bordering the entrance to the Leisure centre area within the Site.



Photograph 8 – Semi mature sweet chestnut and birch trees bordering the southern perimeter of the football club area within the Site.



Photograph 9 – Juvenile lime and hornbeam line of trees planted adjacent to the fence separating the football club and park areas within the Site.



Photograph 10 – Immature line of trees bordering the northern perimeter of the park area within the Site.



Photograph 11 – Dense scrub occurring in two areas adjacent to the perimeter of the park area within the Site.



Photograph 12 – Bramble scrub occurring in areas adjacent to the railed fencing around the perimeter of the football club and park area within the Site.



Photograph 13 – Developed land with a sealed surface. Occurring within the car park and sport/recreation areas within the leisure centre area within the Site.



Photograph 14 – Developed land, sealed surface, present within a small play area near the northern perimeter of the park AOL within the Site.





Photograph 15 – Halewood leisure centre (B1) located within the centre of the leisure centre AOL within the Site. Low PBRA.



Photograph 16 – Halewood leisure centre potential bat roost feature (PRF), gaps where roofing sheets join the building.



Photograph 17 – Halewood leisure centre potential bat roost feature (PRF), gaps in soffit where support post meets the building canopy.



Photograph 18 – Two storage containers (B2 & B3), sited on unsealed developed land (TN2) located on the south east corner of the sports pitch, positioned in the north of the leisure centre AOL within the Site. Negligible PBRA.



Photograph 19 – Metal storage container (B4) on the eastern boundary of the football club area within the Site. Negligible PBRA.



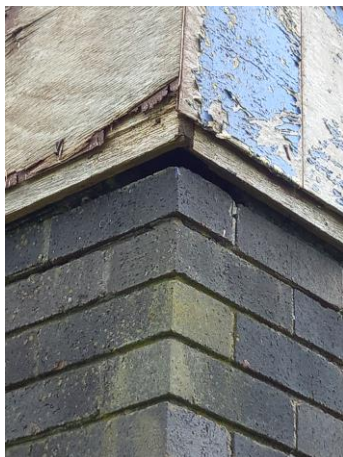
Photograph 20 – Metal storage container (B5) modified with cladding, roofing sheet, UPVC windows and door. Adjacent to B4. Low PBRA.



Photograph 21 – Building 5, PRF. Gaps located under roofing sheets.



Photograph 22 – Operations building (B6), adjacent to B5. Low PBRA.



Photograph 23 – Building 6, PRF. Gaps in the soffits due to rotten wood.



Photograph 24 – Developed land, unsealed surface, present within a small play area near the northern perimeter of the park AOL within the Site.



Photograph 25 – Built linear features. Footpath, sealed surface running west from the leisure centre to the boundary of the leisure centre AOL within the Site.



Photograph 26 – Built linear feature. Mesh fencing present around the perimeter of football pitch area within the leisure centre AOL within the Site.



Photograph 27 – Built linear feature. Railing fencing present around the perimeter of all AOL within the Site. Lower railing fencing present around play areas.



Photograph 28 – Pond 1 (P1) located in the park AOL within the Site,

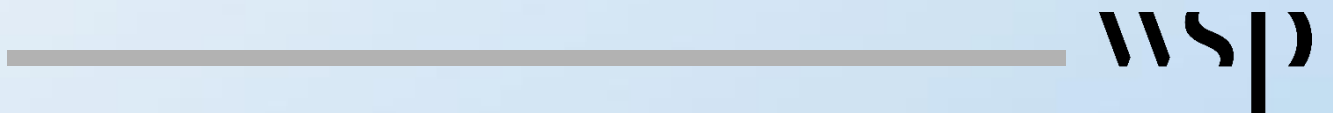




Photograph 29 – TN1, mature black poplar tree near to western boundary of the leisure centre area within the Site.

Appendix E

TARGET NOTES



TARGET NOTES

Target note 1	Mature Black poplar <i>Populus nigra</i> tree, at grid reference SJ 45152 85159. Photo 29
Target note 2	Small area of unsealed developed land as a base for two metal storage containers at grid reference SJ 45368 85194.

Appendix F

HSI results

wsp

		Site Name:		Imperial rd, Heysham		Pond Reference:		P1	
		Project Number:		70112144		Grid Reference:		SJ44678526	
		Date:		22/8/23	Surveyor:	Gary Allwood & Ross Clarke			
				Photo Reference:					
SI1		Map location:		A (1) /B (0.5) /C (0.01)				1	
SI2		Surface area:		rectangle/ellipse/irregular					
				length (m)					
				width (m)					
				OR estimate (m²) if irregular					
						area (m2) =		0.1	
SI3		Desiccation rate:		never (0.9) / rarely (1.0) / sometimes (0.5) / annually (0.1)				1	
SI4		Water quality:		good (1.0) / moderate (0.67) / poor (0.33) / bad (0.01)				1	
SI5		Shade:		% of margin shaded 1m from bank				1	
SI6		Waterfowl:		absent (1) / minor (0.67) / major (0.01)				1	
SI7		Fish population:		absent (1) / possible (0.67) / minor (0.33) / major (0.01)				0.67	
SI8		Pond density:		number of ponds within 1km (not separated by major barriers)				1	
SI9		Terrestrial habitat:		good (1) / moderate (0.67) / poor (0.33) / isolated (0.01)				0.67	
SI10		Macrophyte cover:		% of pond surface covered by macrophytes				0.5	
Overall HSI Category: (poor (<0.5), below average (0.5-0.59), average (0.6-0.69), good (0.7-0.79), excellent (>0.8))								0.54	



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