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Tyrer Ecological Consultants Ltd, Formby Business Centre, 42 Duke Street, Formby, L37 4AT

Preliminary Ecological Appraisal

February 2022

**Land adjacent to Greenhill,
The Orchard,
Huyton,**

L36 5UZ

National Grid Ref: SJ442904



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Preliminary Ecological Appraisal

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This report aims to provide general advice on ecological constraints associated with any development of the site and includes recommendations for further survey; it is not intended that this report should be submitted with a planning application for development of the site, unless supported by the results of further surveys and a detailed assessment of the effects of the proposed development

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Executive Summary

As part of a revised planning application following outline planning consent granted at Land adjacent to Greenhill, The Orchard in Huyton, Tyrer Ecological Consultants Ltd carried out an updated site walkover in February 2022, with a view to producing an updated report (this report); this process follows the findings of a Preliminary Ecological Appraisal (PEA) at the site carried out in August 2019.

The original PEA and update site walkover were commissioned by KDP Architects Limited; outline consent was granted for the site on 31st January 2022 (Knowsley Council: 20/00187/OUT) in association with a Section 106 agreement, for THE ERECTION OF THREE STOREY RETIREMENT APARTMENT BLOCK, COMPRISING 20 NO. 1 BED AND 20 NO. 2 BED APARTMENTS WITH COMMUNAL AREA TOGETHER WITH VEHICULAR ACCESS, CAR PARKING AND ASSOCIATED WORKS (LANDSCAPING RESERVED FOR FUTURE APPROVAL).

Revised proposals are for (Personal communication Email KDP: 02/02/2022):

- *Approval was for 20 x 1Bed and 20 x 2Bed units; however we are looking to amend as the end use prefers 30 x 1 Beds and 10 x 2 Beds;*
- *Alteration to Site Plan – Substation moved externally, minor landscaping alterations and car park layout reworked;*
- *Minor amendments to the Elevations;*
- *The new scheme will be full Affordable Housing, not for over 55's as per the previous consent;*

Extensive findings, conclusions and recommendations are presented throughout the report; however, the reader should be aware of the following Key recommendations.

- No changes to the status-quo covered in the original PEA to report.
- All previous recommendations apply, copied and re-provided in this report, as subject to planning conditions under most recent granted consent Knowsley Council: 20/00187/OUT.

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1.0 Introduction & Scope

- 1.1 As part of a revised planning application following outline planning consent granted at Land adjacent to Greenhill, The Orchard in Huyton, Tyrer Ecological Consultants Ltd carried out an updated site walkover in February 2022, with a view to producing an updated report (this report); this process follows the findings of a Preliminary Ecological Appraisal (PEA) at the site carried out in August 2019.
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 - Minor amendments to the Elevations;
 - The new scheme will be full Affordable Housing, not for over 55's as per the previous consent;
- 1.4 Figure 1.1 shows the new proposed site plan.



Figure 1.1 - Proposed site plan (KDP_01)

- 1.5 As part of the Local Planning Authorities (LPA) planning policies and obligations to the Planning Framework, ecological surveys are generally required prior to planning permission being granted, particularly where protected/priority habitats or species are, or may be present, that could be affected by the proposals for which the application seeks consent.
- 1.6 The PEA was carried out in accordance with the '*Guidelines for Preliminary Ecological Appraisal, 2nd Edition*' (CIEEM, 2017) and all site associated '*CIEEM Competencies for Species Survey (CSS)*', whilst this report has been presented in accordance with the British Standard 42020:2013.
- 1.7 The overarching aim of this PEA report was to ascertain the nature of the land, its respective features and the immediate surrounding area. Where possible, information would be obtained on any sensitive wildlife habitats or species that were present, or may be present, and if so determine if they will be impacted upon by future development.
- 1.8 The objectives of the ecological appraisal may be surmised as follows:
- Identify the presence of species with non-statutory conservation designations.
 - Identify the presence/potential presence of species protected under the Wildlife and Countryside Act (1981) (as amended) or the Conservation of Habitats and Species Regulations (2019) as amended (EU Exit).
 - Identify any species or habitats that require special consideration during future development.
 - Identify the presence of statutory or non-statutory designated sites in close proximity.
 - If the above are present assess any impacts that may occur as a result of the development.
 - Outline opportunities to provide biodiversity net gain in accordance with relevant guidance.

2.0 Legislation & Policy

- 2.1 The legislature considered for the purposes of this report includes the following:
- Conservation of Habitats and Species Regulations (amendment) (2019) (EU Exit),
 - Wildlife and Countryside Act (1981) (as amended),
 - Countryside Rights of Way (CROW) Act (2000),
 - Natural Environment and Rural Communities (NERC) Act (2006),
 - Protection of Badgers Act (1992),
 - The Hedgerow Regulations (1997),
 - Town and Country Planning Act (1990),
 - Wild Mammals Protection Act (1996)
- 2.2 These acts entail relevance to both protected and invasive species. The degree of protection offered to taxa provided within existing UK and EU legislature often varies depending on species/group, for example, some species may purely be protected during one of its life stages (e.g. common species of breeding bird whilst nesting/with eggs/young); some species may receive full protection within the EU (e.g. otter), whereas others may be protected solely on a national basis (e.g. grass snake).
- 2.3 Table 2.1 contains appropriate legislature to each species/group specifically respective to the site and provides the relevance of said legislation.

Table 2.1 - Relevant Legislation

Species Group/Species	Relevant Legislature	Level of Protection
Badger	Protection of Badgers Act (1992), Wildlife and Countryside Act (1981) (as amended)	Illegal to wilfully kill, injure or take a badger (or attempt to do so). Cruelly ill-eradicate a badger. Dig for a badger. Intentionally or recklessly damage or destroy a badger sett, or obstruct access to it. Cause a dog to enter a badger sett. Disturb a badger when it is occupying a sett.
Bats	CRoW Act (2000) Conservation of Habitats and Species Regulations (2019) (EU Exit) Wildlife and Countryside Act (1981) (as amended)	All British bats and their roosts are afforded full protection from damage/destruction and bats may not be injured/killed/taken at any life stage. Once identified, roosts are protected whether the bat is in occupation or not.
Birds (Breeding)	CRoW Act (2000) Wildlife and Countryside Act (1981) (as amended)	All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected. Birds listed on Schedule 1 Wildlife & Countryside Act (1981) (as amended) are afforded a greater level of protection.
Invasive Plant Species	Wildlife and Countryside Act (1981) (as amended)	Species listed within Schedule 9 as invasive, including Japanese Knotweed (<i>Reynoutria japonica</i>) and Himalayan Balsam (<i>Impatiens glandulifera</i>), for example, carry notoriety regarding development. The Act makes it an offence for any person to grow or cause to grow in the wild any plants listed as invasive.

Relevant Policy

- 2.4 Guidance for Local Authorities: Extract from Office of the Deputy Prime Minister - Circular 06/2005:

"It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision".

- 2.5 Paragraph 180 of the National Policy Planning Framework (as revised in July 2021) states:

180. When determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons⁶³ and a suitable compensation strategy exists; and,

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

2.6 The Knowsley Local Plan Core Strategy 2016 stipulates:

“...the design of development will be expected to support and integrate biodiversity enhancements, flood risk mitigation, energy/resource efficiency and waste recycling requirements, to accord with Policy CS8: Green Infrastructure, Policy CS24: Managing Flood Risk and Policy CS26: Waste Management.”

3.0 Priority Habitats & Species

3.1 In the United Kingdom, legal protection and otherwise legislative recognition is afforded to particular habitats and species. Certain habitats and species are considered to hold nature conservation importance and are thus protected due to factors such as their ecological functionality, connectivity, rarity, their vulnerability, environmental importance, or declining population/status. They are referred to as priority habitats and priority species.

3.2 The UK Biodiversity Action Plan (UKBAP) provided a statutory basis for lists of habitats and species of national conservation importance - now transposed under Section 41 (s.41) of the Natural Environment Rural Communities Act 2006 (NERC Act).

3.3 The following Section 41: Habitats of Principal Importance in England and Section 41: Species of Principal Importance in England are considered relevant to the appraisal:

Habitats:

- Lowland mixed deciduous woodland.

Species:

- Bats: Brown long-eared (*Plecotus auritus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Common Noctule (*Nyctalus noctula*),.
- s.41 Bird species that include but not limited to: Dunnock (*Prunella modularis*), Bullfinch (*Pyrrhula pyrrhula*), Song thrush (*Turdus philomelos*), Tree Sparrow (*Passer montanus*), House Sparrow (*Passer domesticus*), Starling (*Sturnus vulgaris*), Willow Tit (*Poecile montanus*),.
- Land mammals that include: Hedgehog (*Erinaceus europaeus*), for e.g.,
- Herpetofauna that include: Common toad (*Bufo bufo*), for e.g.,

- Botanical species that includes Purple ramping-fumitory (*Fumaria purpurea*), Bluebell (*Hyacinthoides non-scripta*), Cornflower (*Centaurea cyanus*) for e.g.

3.4 Local Biodiversity Action Plans (LBAP's) are a way of encouraging people to work together to deliver a program of continuing action for biodiversity at a local level. LBAPs also embrace the idea of 'local distinctiveness'; habitats and species which are not considered UK conservation priorities can be catered for by LBAPs if they are of particular local significance.

3.5 LBAP's set out practical steps that aim to:

- Help protect biodiversity;
- Enhance and improve biodiversity where possible, and,
- Promote biodiversity at a local level.

3.6 The North Merseyside Biodiversity Action Plan (NMBAP) lists key local habitats/species considered to be rare or declining in the area; some may be of national concern while others are significant at local level. The following local plans are considered of potential relevance to the survey.

- Bats;
- Bluebell;
- Dragonflies;
- Skylark;
- Song Thrush;
- Urban Grasslands (This habitat covers acid/neutral/calcareous unimproved, semi improved and improved grasslands occurring in urban and urban fringe areas);
- Urban Trees;
- Urban Green Infrastructure (10. Ecological Frameworks).

4.0 Methodology

4.1 As part of the ecological appraisal report, a desk-top and field-based study is conducted. Methods for both components of the appraisal are given below.

Desktop Study

4.2 Prior to a site visit a desktop study was conducted using online resources to obtain information pertaining to any sites afforded statutory (e.g. SSSI) and non-statutory (e.g. LWS) designations within 2.0km of the site boundary. To do so, the 'Multi Agency Geographic Information for the Countryside (MAGiC – provided by Defra)' along with data from the 'Natural England Open Data Geoportal' was accessed to gather such information. This particular interactive mapping service was also used to locate any European Protected Species Mitigation Licenses (EPSML) and species records to further inform conclusions concerning protected species in the context of the study site and its proposed development.

4.3 Historic satellite imagery was reviewed using sources such as Google Earth (© 2020/21) to help establish past use of the land and determine the nature of adjoining and extending habitats; such information aids in the understanding of how the site might interact with its surroundings ecologically and its value in that context, and how the development may impact at a wider scale.

4.4 In addition the Council Planning Portal 'Search for planning applications' function was utilised to help inform the desktop study by analysis of existing publicly accessible ecological survey results that have been carried out locally within the previous five years.

- 4.5 A 2.0 kilometre data search to include all protected species and designated sites within a 2.0km radius of the site of the former tennis courts was requested from the Local Biological Records Centre serving the area - Merseyside Biobank, as it would provide further and otherwise unobtainable information concerning protected species and their local distributions.

Field Survey

- 4.6 A daytime preliminary ecological appraisal was conducted on the 14th August 2019 2019 in wet, rainy conditions (15°C) by the following surveyors (Table 4.1).

Table 4.1 - Site Surveyor credentials

Name	Description of most relevant credentials
Mr. M. Pritchard ACIEEM (Senior Ecologist)	• Five years professional consultant experience & extensive training in cross habitat/species ecology; • Relevant Degree: Countryside, Conservation & Recreational Management; • Licenced in Bats: (2020-5039-CLS-CLS) (Class 1) and accredited agent on the (Class 2) Natural England bat licence of Mrs. K. Wilding (CLS-14227); • Licensed for Great Crested Newt: CL08 (Great Crested Newt Survey Level 1) - 2018-34062-CLS-CLS (England); • Licensed for Sand Lizard & Natterjack Toad (2021-55107-SCI-SCI); • FISC Level - 3 (2019) (Botanical).

- 4.7 Mr. Pritchard ACIEEM also re-attended the site on 14th February 2022 to assess the status-quo, update findings and provide recommendations accordingly. Conditions during the update walkover were post-rain, overcast (7°C).

Floristic assessment

- 4.8 The Phase 1 Survey followed UK industry standard Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Methodology standards (JNCC, 2010) with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Technical Guidance Series Guidelines for Preliminary Ecological Appraisal and Ecological Impact Assessment (CIEEM, 2016; 2017); habitats were mapped in the field and later digitised using QGIS software (see Appendix VI).
- 4.9 During the survey walkover, botanical assemblages were assessed and the land was investigated for the presence of red-listed (Stroh *et al*, 2014), s.41 and LBAP species alongside specially protected species as listed under Schedule 8 of the Wildlife and Countryside Act (WCA) (1981) (as amended) and/or Schedule 5 Conservation of Habitats and Species Regulations (2019) (EU Exit).
- 4.10 Additional to attributing ecological value to red-listed / BAP species, in accordance with existing CIEEM guidance, a geographic frame of reference is also adopted. Plant species may be recognised for their ecological importance on a geographical scale which is adopted on a site-to-site basis (see Figure 4.1). For a site-relevant species list, see Appendix III.
- 4.11 In combination with assessing the application site in relation to flora of conservation importance, the land was also assessed in relation to invasive species as listed under Schedule 9 (Part II) of the Wildlife and Countryside Act (1981) (as amended).

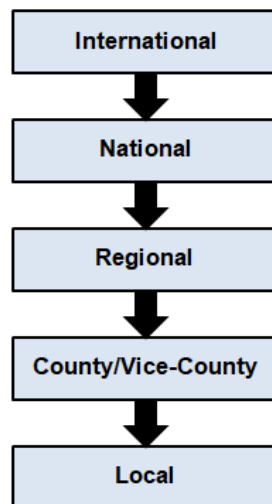


Figure 4.1 - Geographic Frame of Reference entailing degrees of conservation importance

Faunal assessment

- 4.12 The survey included an assessment of all available habitat features. The identification and/or evidence of all incidental fauna would be documented, whilst in tandem the area was assessed for the potential to support the species and habitats previously covered within the report. The 'walkover' also aimed to identify any ephemeral pools or unmapped waterbodies. No buildings are present on the application site.
- 4.13 Trees were inspected for potential places that may be of value to bats or breeding birds and to determine if evidence of use by either group was present; this typically involves a search for potential roost features in respect of bats along with an investigation of those features using a high powered torch, inclusive of bat droppings, incidental presence, dead specimens and/or prey items. Trees were co-investigated for evidence of breeding birds - which broadly involves a search for nest materials, pellets, accumulated faces which might indicate a nest and/or dead hatchlings/fledglings, whilst on occasion the behaviour of birds can also indicate the presence of breeding birds. The ground was checked for the presence of ground-nesting birds and scrub was inspected with minimal disturbance. The surrounding habitat was also considered in terms of general suitability for bats and breeding birds.
- 4.14 Criteria for bat roost assessment are based upon the determinants given in the Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016): (see Figure 4.2).
- 4.15 The 'walkover' of the site included a search for signs of Badger (*Meles meles*) which includes signs of activity such as digging, occupied setts, 'runs' leading to and from a sett and the existence of latrines or 'snuffle' holes where badgers have foraged in the ground.
- 4.16 Invertebrates that are incidentally encountered during the survey will be recorded where noteworthy, primarily in the families *Odonata*, *Lepidoptera*, *Diptera* and *Bombidae*, though no strict methodology will be followed as part of this PEA. The noted presence of a rich invertebrate community can be a valuable indicator of an application site's biodiversity and habitat value, which aids in informing appropriate recommendations in relation to achieving a biodiversity net gain.

Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.		
Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions^a 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^b). 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.^c	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ^a and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ^a and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

^a For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

^b Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2015). This phenomenon requires some research in the UK but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in large buildings in highly urbanised environments.

^c This system of categorisation aligns with BS 8596:2015 Surveying for bats in trees and woodland (BSI, 2015).

Figure 4.2 - BCT guidelines extract

- 4.17 The results, conclusions and recommendations of this report are based on a number of factors i.e.
- Skills and experience of the surveyor,
 - Knowledge of flora and fauna relevant to the site location and geographical range,
 - Nature of the immediate and surrounding habitat in relation to shelter, foraging and commuting opportunities.
- 4.18 The results, conclusions and recommendations of this report have been assessed by Mrs. K. Wilding, Director of Tyrer Ecological Consultants Ltd, and her assessment concurs with the findings and recommendations of the surveyor Mr. Pritchard.

5.0 Limitations

- 5.1 This report does not contain a comprehensive list entailing the totality of botanical taxa on site. Species listed within Appendix III were noted from observations at the time of the ecological appraisal; many plant species are only evident at certain times of the year, consequently it is probable that some plant species will have gone undetected.
- 5.2 Scrub exists throughout the site, however, is particularly mature and dense in the east of the boundary, whereby some areas could not be accessed. These habitats were able to be identified using satellite imagery, thus access was not considered a significant constraint.
- 5.3 Having considered the given constraints against the proposals and the report outcomes, on balance there were no significant constraints that would hinder the gathering of ecological information, on which to base sound conclusions and recommendations.

6.0 Desk Study Results

- 6.1 The application site is a vacant former tennis courts and the former site of Huyton Girls College, cited on a reasonably sized (0.5 hectares) plot of land adjacent to The Orchard, Huyton, approximately 9.0km east of Liverpool city centre. Located within the Huyton Conservation area, the land for which the applicant seeks outline consent has been left vacant and unmanaged over recent years, with ground/ephemeral vegetation allowed to naturally succeed resulting in a varied habitat structure on site from dense broadleaf woodland to bare ground.
- 6.2 The immediate habitat is represented by urbanisation in the form of housing estates with concomitant front and rear gardens in a generally leafy, residential setting. Huyton Park/McGoldrick Park is located 80 metres to the east, an urban park space which is broadleaved scattered tree and amenity grassland in character, whilst the Liverpool - Manchester railway link is located 140 metres to the north, with associative trackside linear woodland and scrub to the west and east. See Figure 6.1.



Figure 6.1 - Location of the application site within the contiguous landscape (Google Earth 2019)

- 6.3 The extending habitat is consistent with the immediate, largely represented by residential housing with the inclusion of school grounds, sports/playing fields, commercial unit space, golf clubs and small urban parks. The M62 motorway is located approximately 0.7km to the south, flanked by arable grassland and grazed pasture. A number of notable environs feature within 2.0km including Bowring Park Golf Club, Childwall Golf Club and Huyton Wetlands.
- 6.4 No statutorily designated sites are present within 2.0km of the application site.
- 6.5 The data search obtained via Merseyside Biobank revealed the following local wildlife sites (LWS) within 2.0km (Figure 6.2). Also see Appendix V.

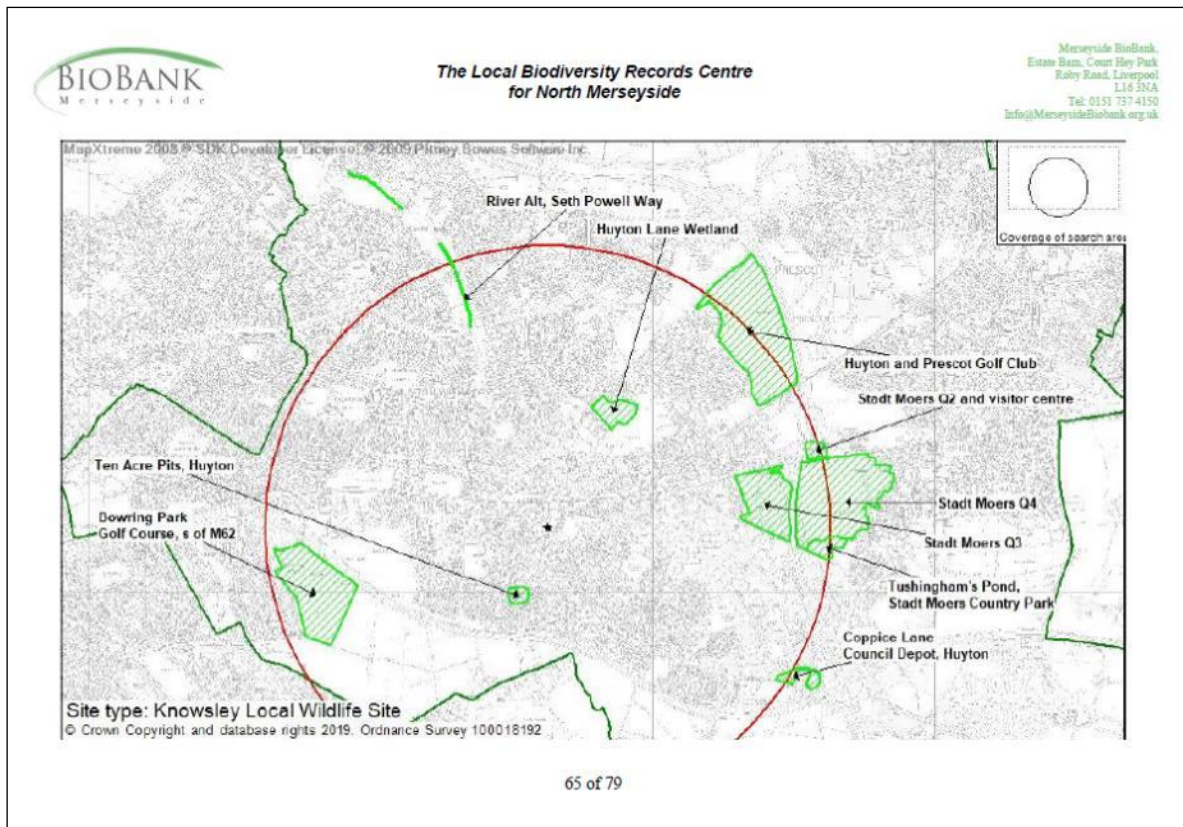


Figure 6.2 - Image shows the proximity of the site (central) to nearby local wildlife sites

- Ten Acre Pits - mature broadleaf woodland, 0.4km to the south.
- Huyton Lane Wetland - marshland with open running water, 0.8km to the north.
- Bowring Park Golf Club - A mix of woodland, grassland, scrub and ponds, located 1.4km to the south-west.
- Stadt Moers Park - a wide variety of habitats including woodland, park and pasture, open water, marsh, ditch and reedbeds, 1.5km to the east.
- Huyton & Prescott Golf Club - habitats include woodland, ponds and wetlands, 1.7km to the north-east.
- Coppice Lane Council Depot - Developed upon.
- River Alt - Netherley/Ditton Brook - Open running water bodies within 2.0km.

- 6.6 Site-surrounding environs can be considered as being of low-moderate value for the species for which the survey was undertaken, subject to them being present in the locality, notably bats and birds. The Common Pipistrelle (*Pipistrellus pipistrellus*) bat is the species most commonly associated with urban environments.
- 6.7 No ponds exist on site. Due to the nature and isolation of the site from all described local wildlife sites in a 2.0km buffer, otherwise named sites and other more favourable habitats in the wider area, most flightless terrestrial/semi-aquatic mammal species, amphibians (terrestrial phase) and reptiles would struggle to colonise the site - notably this includes Water Voles (*Arvicola auritus*), Great Crested Newts (*Triturus cristatus*), Common Lizards (*Zootoca vivipara*) and Common Toads (*Bufo bufo*). No evidence of the named species were observed during the survey, and no habitats are present on site to support them sustainably. Any species records that exist within 2.0km are isolated from the site by many significant barriers including busy roads, fencing and walls; as such the aforementioned four species will not be covered in any great details within in this report.
- 6.8 The desktop study found two results for EPSML within a 2.0km radius of the application site, the nearest of which is located 2.2km to the north, which affects the non-breeding roost(s) of two species of bat - Common Pipistrelle and Brown long-eared (*Plecotus auritus*).
- 6.9 The data search to include all species and designated sites within a 2.0km radius of the application site, via Merseyside Biobank produced invaluable information to aid the appraisal - key findings are interpreted below.
- Dunnock (*Prunella modularis*), House Sparrow (*Passer domesticus*) and Song Thrush (*Turdus philomelos*) records found within 250 metres.

7.0 Field Survey Results

7.1 Phase 1 Habitat Survey

- 7.1.1 See Table 7.1 (below) for habitat descriptions. Refer to Appendix VI - Phase 1 Habitat Map for the location of all described habitats. All species nomenclature follows Stace, C. (2019) – definitive English names. All scientific names are given in Appendix III.

Table 7.1: Phase 1 habitat types within the survey area with target notes

Habitat Code	Broad Habitat	Description
A1.1.2	Broadleaved Woodland - Plantation	Mature plantation woodland exists in the north-east dominated by Sycamore, Horse-chestnut, Large-leaved Lime and Sessile Oak, with an understorey of Holly and Dogwood. The canopy is closed limiting sunlight to the ground floor dominated by Atlantic Ivy, Common Nettle and Bramble with occasional Wood-avens.
A2.1	Scrub - dense	Small patches of dense scrub persist throughout, though a notably high, formidable sward is located in the south-east, dominated by Broom, Bramble, Dogwood and Grey Willow.
A2.2	Scrub - scattered	Scattered Bramble scrub is amalgamated throughout, notably at boundary edges featuring Butterfly-bush, with a large area gradually becoming dense in the south-west of the site where Bramble is prevailing alongside Hedge Bindweed, Field Rose, Hedge Bedstraw, Hairy Tare and Tufted Hair-grass.
A3.1	Broadleaved scattered trees	A range of mixed age scattered trees can be found around the borders of the site generally, mostly represented by Sycamore, Leyland Cypress, Downy Birch, Elder and Ash. Typical ground layer species here include Hedge Woundwort and Tutsan.
B2.2	Semi-improved Neutral grassland	Grassland on site is of good value, with a range of grasses and wildflowers recorded including, but not limited to, Red Bartsia, American Willow-herb, Yarrow, Selfheal, Lesser Trefoil, Ribbed Melilot and Common Ragwort. Dominant grasses include Creeping Soft-grass and Creeping Bent with Tufted Hair-grass and Common Reed observed locally.

C3.1	Other tall herb and fern - ruderal	Hemp-agrimony, Smooth Hawks-beard, Great Willow-herb and Rosebay Willow-herb are observed throughout notably the north, though are established centrally alongside semi-mature Grey Willow.
J1.3	Disturbed land - ephemeral/short perennial	Much of the land is former hardstanding which has succumb to seral succession over time beginning with the ingress of mosses at path/yard edges, including former paths and a large concrete slab in the north of the site - wildflowers grow successfully over the currently ephemeral areas including Intermediate Evening-primrose, Tutsan, Scarlet Pimpernel, Colts-foot, Creeping Buttercup and Mugwort.
J4	Bare ground	An area of hardstanding is located in the north of the site, mostly bare of vegetation, however mosses can be found at the edges including <i>Kindbergia praelonga</i> and <i>Didymodon</i> sp and the region nearest to the woodland features overhanging <i>Salix</i> sp. and mature Alder.

- 7.1.2 No significant changes to the status-quo were noted during the updated site walkover; minor succession has occurred in areas of grassland which had more scattered Willow, Bramble and Gorse scrub than previous, though not sufficient as to map as distinct new habitat.

7.2 Vegetation

- 7.2.1 During the site walkover no species of conservation importance on a local, regional or national scale was identified across the extent of the survey area. Additionally, no invasive species listed on Sc.9 of the Wildlife & Countryside Act were observed.

7.3 Bats

- 7.3.1 Trees located within the confines of the site boundary are absent of features which could be utilised for roosting by bats; most typically they are absent of potential roost features that include old woodpecker/natural holes, cracks, splits, fissures and/or lifted bark (on the mature specimens). Notwithstanding an absence of roost potential, all of the trees on the site offer value to bats in that they provide non-illuminated, semi-permanent landmarks which aid commuting, whilst also supporting the community of flying insects that form the staple component of a bats diet - thus, offer foraging value.

7.4 Breeding Birds

- 7.4.1 No evidence of any Schedule 1 listed (Wildlife & Countryside Act 1981 (as amended) specially protected species, such as Barn owl, was observed and site is unsuitable for this species nesting/breeding requirements; furthermore the surrounding habitat offers low value for typical hunting, being isolated via surrounding urban sprawl from far more favourable environs in the wider landscape. No evidence of any other Schedule 1 specially protected species was observed.

7.4.2 No evidence of old nesting/current breeding by common birds was observed at any point during the survey, however there exists an abundance of potential, and highly probable, nesting platforms across the site in the form of all trees and scrub habitat that could be used by common breeding birds at any stage, and oft-times the combination of dense foliage, scrub and difficult to access areas can hide nests. Theoretically, the site generally is likely to be utilised for nesting by common birds associated with gardens and urban settings during the breeding bird season (March - August).

7.4.3 All bird species encountered during the survey are presented in Table 7.2.

Table 7.2 - Birds recorded during the survey

Species	Scientific Name	Notes	Conservation Status
Blackbird	<i>Turdus merula</i>	1 - low flight	Common
House Martin	<i>Delichon urbicum</i>	2 - Flying overhead	S.41, LBAP, Amber
Starling	<i>Sturnus vulgaris</i>	1 - dead, predated	S.41, LBAP, Red
S.41 - a bird listed on section 41 of the Natural Environment Rural Communities Act 2006 (NERC Act) LBAP - A local biodiversity action plan listed species BoCC 4 - a bird of conservation concern, Amber or Red, Red being the highest conservation priority			

7.5 Other Terrestrial Mammals

7.5.1 During the search of the land encompassed within the site boundary, no evidence of recent Badger presence such as runs, grubbing holes, latrines, footprints, day nests or scratching areas were found. The site is unlikely used for foraging and commuting as the site is surrounded by urbanisation and fenced gardens, with poor terrestrial connectivity within an extending 1.0km radius. Additionally, records of badger presence in Merseyside are rare, as detailed within the data search results.

7.5.2 Despite the urban surroundings, it is considered highly likely that Hedgehogs could be present despite no evidence of this species being located during the survey, due to the general nature of the site (woodland, dense scrub/shrub and other dense ephemeral vegetation), which is of a favourable biotope as to support this species for shelter, hibernation, foraging and undisturbed breeding. No hedgehogs were observed, however this is common during a diurnal survey given their preferences for nocturnal activity.

7.6 Herpetofauna

7.6.1 Despite no open water bodies present on site, given the described habitats, which could include periods of waterlogging over/around hardstanding as evidenced by the localised and rare presence of Common Reed (*Phragmites australis*), the site could be accessed by generalist, robust common amphibians including Common Frog (*Rana temporaria*) subject to their presence in the landscape, though no amphibians were encountered during the survey.

7.6.2 No suitability exists for Great Crested Newt (*Triturus cristatus*); the nearest ponds are located over 500 metres to the south-east, separable from the site by several significant barriers (Figure 7). Additionally, it is considered unlikely Common Toad (*Bufo bufo*) would be found on site.

- 7.6.3 In respect to reptiles no evidence of this group of animals was found, no records were flagged up by the data search, and no habitat suitability was identified to warrant further survey effort in relation to this group; no impacts are anticipated due to the sites isolation from more favourable environs in the wider landscape.

8.0 Conclusions & Recommendations

- 8.1 The PEA and update walkover identified no notable flora or habitats of national conservation importance within the survey boundary. Collectively the site is consistent with the listed parameters of a functioning regional priority habitat, namely 'Urban Green Infrastructure' (see Figure 8.1), notably including 'formerly developed land', whilst 'Urban Trees' and 'Urban Grassland' present on site, LBAP habitats in their own right. The North Merseyside Biodiversity Action Plan describes the elements that contribute to the wider Green Infrastructure (GI) in North Merseyside.

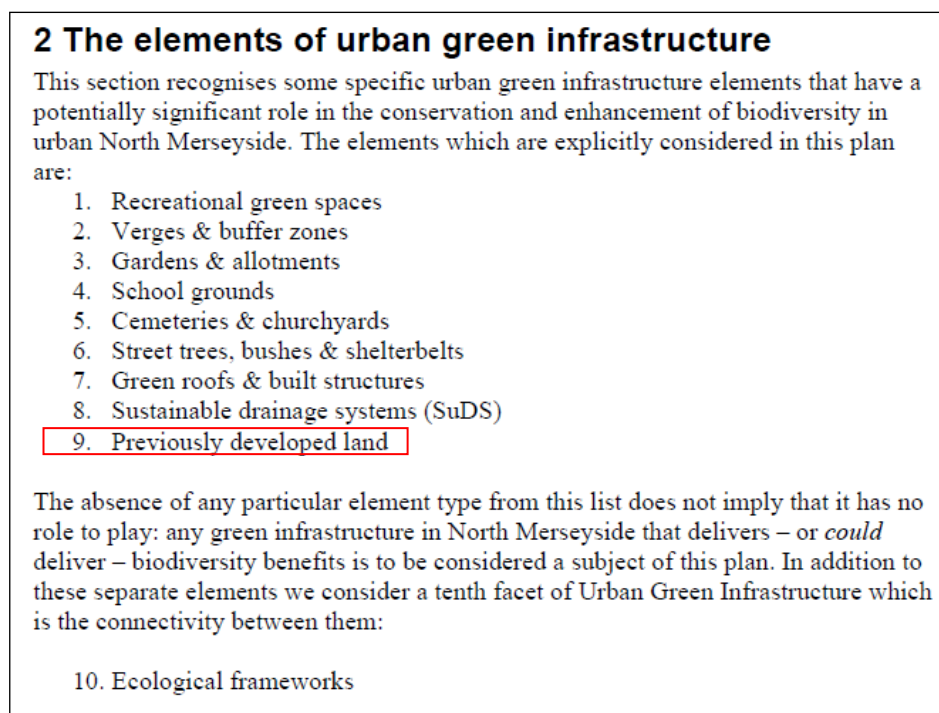


Figure 8.1 - Extracted from North Merseyside Biodiversity Action Plan - Urban Green Infrastructure

- 8.2 In accordance with the above it is recommended that woodland in the north-east of the site and any treelines around the boundaries are retained in as much as feasibly possible, prescribed alongside future habitat management of these habitats, to open up the closed woodland canopy encouraging sunlight to the ground layer, which will be to the benefit of native woodland flora and fauna, encouraging growth of the understorey and species such as Bluebell (*Hyacinthoides non-scripta*). The benefits of woodland retention and management would further extend to meet the needs of the tenants of the site, offering a tranquil, 'semi-natural' wildlife and recreational area.
- 8.3 Trees and scrub on site offer favourable foraging and commuting habitat to species/groups such as bats, birds and invertebrates. The loss of trees and scrub habitat to facilitate the proposed development scheme should be accompanied by a suitable re-landscaping strategy only using native species suitable for the area, as opposed to non-native, exotic species which are suboptimal to biodiversity net gain - see Table 8.1 for prescribed species to this area.

Table 8.1 - Appropriate species for native landscaping

Trees	Woody Shrubs
English Oak (<i>Quercus robur</i>)	Hawthorn (<i>Crataegus monogyna</i>)
Rowan (<i>Sorbus aucuparia</i>)	Honeysuckle (<i>Lonicera periclymenum</i>)
Wild Service Tree (<i>Sorbus torminalis</i>)	Gelder Rose (<i>Viburnum opulus</i>)
Silver Birch (<i>Betula pendula</i>)	Elder (<i>Sambucus nigra</i>)
Ash (<i>Fraxinus excelsior</i>)	Wild Privet (<i>Ligustrum vulgare</i>)
Goat Willow (<i>Salix caprea</i>)	Blackthorn (<i>Prunus spinosa</i>)
Beech (<i>Fagus sylvatica</i>)	
Wild Cherry (<i>Prunus avium</i>)	

8.4 No invasive species listed on Schedule 9 of the Wildlife & Countryside Act (1981) were observed on site.

8.5 All of the trees on the site, as described, are 'negligible' in terms of bat roost potential, given an absence of typical features that could be used for the purposes of roosting. No further surveys are required in relation to the proposals, trees and bats. Any felling of trees should follow the recommendations given in sections 8.2-8.3.

8.6 Installation of new lighting as part of a development scheme that exceeds current levels may have a negative impact upon foraging/commuting bats that could be present in the vicinity, particularly if increased light spillage occurs in areas currently free from illumination. There are several measures that can be implemented to offset lighting impacts upon bats, where lighting is unavoidable; these include, however are not limited to, the light source used and luminaire design, and accessories to direct light at its intended target. Numerous software programmes are currently available which can be used inform lighting plans, demonstrating how lighting decisions will illuminate a site.

Refer to the Bat Conservation Lighting Guidelines for further information if applicable.

8.7 No implications are applicable in relation to Schedule 1 specially protected bird species such as Barn Owl, and no further surveys in relation to Schedule 1 species are necessary.

8.8 No evidence of old nesting/current breeding by common birds was observed at any point during the survey, though there exists an abundance of features on site that can be used for nesting by common species associated with urban areas and gardens. Though no evidence of breeding birds was observed during the survey, all trees and scrub could be used for nesting, particularly during the breeding bird season (March - August). It is firmly recommended that any removal of these features takes place outside of the breeding bird season of March-August in order to avoid any impacts to breeding birds.

NB: *All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected under the Wildlife & Countryside Act 1981 (as amended). It is a punishable offence to interfere in any way with an active nest, including disturbance.*

8.9 A single dead/predated adult Starling was found in the north of the site, whilst House Martin were observed flying overhead, indicating both species are present in the local environment. Enhancement by way of breeding bird provision/'nest boxes' is recommended.

8.10 No impacts are applicable in relation to Badger, and no further surveys are required in relation to this species.

8.11 Habitat is present which Hedgehogs typically utilise for shelter, foraging and commuting purposes, whilst the site is largely undisturbed and could also be used for breeding. Hedgehog

features on schedule 6 of the Wildlife and Countryside Act 1981 (as amended) and the Wild Mammals Protection Act (1996) - it is also listed as a species of 'principal importance' under the NERC Act (2006), a LBAP species in Merseyside and progressively considered a species that warrants kind, responsible consideration by planning.

- 8.12 As a means of enhancement and preserving local biodiversity, it is recommended that two 'Hedgehog homes' be integrated into the scheme, placed in opposite areas of the site within either retained/newly planted landscaping - woodland, scrub or mature shrub. The boxes will provide a receptor area(s) for any Hedgehogs incidentally discovered/affected during development works which will invariably result in loss of scrub as a minimum, and offer a permanent intrinsic feature of the site, in line with Urban Green Infrastructure; suggestions for this purpose can be found within Appendix IV.
- 8.13 Purely as a precautionary measure, where open vertical-sided trenches are present or newly excavated on site it should be ensured that they are not left open overnight to avoid Hedgehogs and other small animals falling into them and becoming trapped. If trenches cannot be back filled after the working day, planks of between 150-200 mm wide should be placed in them diagonally to serve as an escape mechanism. Excavations should also be checked in the morning on a daily basis for the presence of any animals that may have fallen in during the night. Plastic netting, wire coils or similar hazardous features should not be left on the ground, to avoid entanglement. Aggregates/constructional materials should be stored on pallets as opposed to the storing on the ground.
- 8.14 In relation to GCN, there were no ponds within a 500 metre radius and the site itself is encompassed on all sides by residential development and hardstanding. Therefore, although the habitat on site would otherwise be suitable for foraging/commuting/refuge purposes, GCN are highly unlikely to be present on site. No further surveys or recommendations are applicable.
- 8.15 If any frogs and toads are encountered during site operations, it is recommended that they are removed from potential harm's way by being carefully handled and removed off site to be placed in a nearby like-for-like terrestrial habitat away from the road network and hardstanding.
- 8.16 No implications are applicable in relation to reptiles and no evidence of reptiles was found during the survey. No further surveys in relation to this group are necessary.

Biodiversity Enhancement:

- 8.17 General recommended ideas to enhance the site in accordance with the principles of '*Biodiversity Net Gain: Good practice principles for development*' (CIEEM *et. al.*, 2019), are presented in Appendix IV.

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Appendix I: Site Photographs - 2019 PEA



Plate 1 - Entry point corridor in the north-west of the site



Plate 2 - Grassland/scrub central point of the site



Plate 3 - Scrub in the south-west of the site



Plate 4 - Intermediate Evening-primrose growing with other ephemeral/short perennials in on disturbed ground in the north of the site



Plate 5 - Broom scrub in the south-east of the site



Plate 6 - Bare hardstanding in the north-east of the site



Plate 7 - Broadleaf woodland in the north-east of the site



Plate 8 - Grassland found centrally

Appendix II: Site Photographs - 2022 Updated site walkover



Plate 9 - Access into site via The Orchard



Plate 10 - Grassland found centrally



Plate 11 - Area of hardstanding in the north of the site



Plate 12 - The woodland area in the north-east of the site

Appendix III: Botanical Species List

Each species recorded was given an abundance value according to the standard DAFOR scale, where:

D	=	Dominant
A	=	Abundant
F	=	Frequent
O	=	Occasional
R	=	Rare

*These values can be prefixed by the letter L (locally), to provide more subtle biogeographical data. P, meaning Present, is given where an abundance value has not been calculated.

Common Name	Scientific Name	DAFOR
a Cotoneaster	<i>Cotoneaster sp.</i>	R
a moss	<i>Didymodon sp.</i>	F
a moss	<i>Kindbergia praelonga</i>	F
a Willow	<i>Salix sp.</i>	R
Alder	<i>Alnus glutinosa</i>	O
American Willow-herb	<i>Epilobium ciliatum</i>	O
Ash	<i>Fraxinus excelsior</i>	F
Atlantic Ivy	<i>Hedera hibernica</i>	LD
Birds-foot Trefoil	<i>Lotus corniculatus</i>	O
Bramble	<i>Rubus fruticosus agg.</i>	A
Broad-leaved Dock	<i>Rumex obtusifolius</i>	O
Broom	<i>Cytisus scoparius</i>	LD
Butterfly-bush	<i>Buddleja sp.</i>	F
Cherry Laurel	<i>Prunus laurocerasus</i>	R
Colts-foot	<i>Tussilago farfara</i>	O
Common Ivy	<i>Hedera helix</i>	O
Common Polypody	<i>Polypodium vulgare</i>	R
Common Ragwort	<i>Jacobaea vulgaris</i>	A
Common Reed	<i>Phragmites australis</i>	LR
Common Sorrel	<i>Rumex acetosa</i>	O
Common Vetch	<i>Vicia sativa</i>	O
Creeping Bent	<i>Agrostis stolonifera</i>	A
Creeping Buttercup	<i>Ranunculus repens</i>	F
Creeping Cinquefoil	<i>Potentilla reptans</i>	R
Creeping Soft-grass	<i>Holcus mollis</i>	A
Dandelion	<i>Taraxacum officinale agg.</i>	F
Dogwood	<i>Cornus sanguinea</i>	A

Land adjacent to Greenhill, The Orchard, Huyton, L36 5UZ
Preliminary Ecological Appraisal

Downy Birch	<i>Betula pubescens</i>	O
Elder	<i>Sambucus nigra</i>	O
Field Forget-me-not	<i>Myosotis arvensis</i>	O
Field Horsetail	<i>Equisetum arvense</i>	F
Field Rose	<i>Rosa arvensis</i>	O
Foxglove	<i>Digitalis purpurea</i>	O
Great Willow-herb	<i>Epilobium hirsutum</i>	F
Grey Willow	<i>Salix cinerea</i>	A
Hairy Tare	<i>Vicia hirsuta</i>	O
Hart's-tongue	<i>Asplenium scolopendrium</i>	R
Hedge Bedstraw	<i>Galium album</i>	F
Hedge Bindweed	<i>Calystegia sepium</i>	O
Hedge Woundwort	<i>Stachys sylvatica</i>	R
Hemp-agrimony	<i>Eupatorium cannabinum</i>	A
Herb-robert	<i>Geranium robertianum</i>	F
Hoary Plantain	<i>Plantago media</i>	R
Holly	<i>Ilex aquifolium</i>	F
Horse-chestnut	<i>Aesculus hippocastanum</i>	LD
Intermediate Evening-primrose	<i>Oenothera x fallax</i>	F
Ivy-leaved Toadflax	<i>Cymbalaria muralis</i>	O
Large-leaved Lime	<i>Tilia platyphyllos</i>	O
Lesser Trefoil	<i>Trifolium dubium</i>	F
Leyland Cypress	<i>Cupressus x leylandii</i>	R
Mugwort	<i>Artemisia vulgaris</i>	F
Pencilled Cranesbill	<i>Geranium versicolor</i>	R
Pendulous Sedge	<i>Carex pendula</i>	R
Purple Loosestrife	<i>Lythrum salicaria</i>	O
Raspberry	<i>Rubus idaeus</i>	O
Red Bartsia	<i>Odontites verna</i>	O
Red Valerian	<i>Centranthus ruber</i>	O
Redshank	<i>Persicaria maculosa</i>	F
Ribbed Melilot	<i>Melilotus officinalis</i>	O
Ribwort Plantain	<i>Plantago lanceolata</i>	F
Rosebay Willow-herb	<i>Chamerion angustifolium</i>	LO
Rough Meadow-grass	<i>Poa trivialis</i>	F
Scarlet Pimpernel	<i>Anagallis arvensis</i>	R
Selfheal	<i>Prunella vulgaris</i>	O

Land adjacent to Greenhill, The Orchard, Huyton, L36 5UZ
Preliminary Ecological Appraisal

Sessile Oak	<i>Quercus patraea</i>	F
Smooth Hawk's-beard	<i>Crepis capillaris</i>	LA
Spear Thistle	<i>Cirsium vulgare</i>	O
Stinging Nettle	<i>Urtica dioica</i>	F
Sycamore	<i>Acer pseudoplatanus</i>	LA
Tall Fescue	<i>Schedonorus arundinaceus</i>	O
Tall Melilot	<i>Melilotus altissimus</i>	R
Tufted Hair-grass	<i>Deschampsia cespitosa</i>	F
Tutsan	<i>Hypericum androsaemum</i>	LF
Yew	<i>Taxus baccata</i>	R

Appendix IV: Biodiversity Enhancement: General Recommendations

Broadleaved Woodland - Management

Specific management aims should be:

- Where safe to do so, allow mature woodland trees to become over mature and retain old and dead native trees as they are particularly valuable for wildlife and should not be felled. More than a fifth of the fauna of woodland may depend on dead and decaying old trees. Deadwood also encourages fungi and bryophyte growth.
- Where felling is necessary, select species that are not locally native. These species provide fewer benefits for wildlife and may shade the woodland floor, preventing wildflowers from growing.
- Promote and protect the natural regeneration of native trees and shrubs and control the regeneration of locally non-native tree species by removing saplings.
- Thin trees where the canopy becomes closed as this will allow the understorey and ground level to develop, creating a more diverse structure. This is particularly relevant to areas of young plantation and areas dominated by Alder and Willow.
- Open spaces such as rides, glades and woodland margins provide habitat for many species. They should be maintained by mowing and the cuttings removed to prevent nutrient accumulation. Mowing should ideally be carried out every 1-3 years on a rotational basis, so that various stages of growth are maintained.
- Erect bird and bat boxes on suitable trees.

Native Planting and/or Landscaping

New feature landscaping should incorporate native woody plants as opposed to non-native species that are of significantly less benefit to biodiversity. Species such as Blackthorn (*Prunus spinosa*), Honeysuckle (*Lonicera periclymenum*), Rowan (*Sorbus aucuparia*), Guelder-rose (*Viburnum opulus*) and Hawthorn (*Crataegus monogyna*) are native and will provide a valuable resource for a myriad of wildlife as opposed to non-native, exotic species which are generally much less effective, particularly to pollinator groups including bees, butterflies and moths.

Trees	Woody Shrubs
English Oak (<i>Quercus robur</i>)	Hawthorn (<i>Crataegus monogyna</i>)
Rowan (<i>Sorbus aucuparia</i>)	Honeysuckle (<i>Lonicera periclymenum</i>)
Wild Service Tree (<i>Sorbus torminalis</i>)	Guelder Rose (<i>Viburnum opulus</i>)
Silver Birch (<i>Betula pendula</i>)	Elder (<i>Sambucus nigra</i>)
Ash (<i>Fraxinus excelsior</i>)	Wild Privet (<i>Ligustrum vulgare</i>)
Goat Willow (<i>Salix caprea</i>)	Blackthorn (<i>Prunus spinosa</i>)
Beech (<i>Fagus sylvatica</i>)	
Wild Cherry (<i>Prunus avium</i>)	

West European Hedgehog - Hedgehog Homes

As a means of enhancement and preserving local biodiversity, it is recommended that two 'Hedgehog homes' be integrated into the scheme, placed in two opposite areas of the site within either retained woodland/planted landscaping. This will provide a receptor area for any Hedgehogs incidentally discovered/affected during development works, and offer a permanent intrinsic landscape feature. Typical design suggestions can be found below, available online.



Bats

There are a number of options available for enhancing a building for crevice-dwelling bats; such forms of enhancement replicate crevice situations that are used by species including Pipistrelle bats; three are shown below. The roost(s) would be permanent and dedicated for bats.

1.



The integrated bat box can be installed to a gable elevation, it is a large, solid construction of insulating concrete with an internal roost space, which can be incorporated into the fabric of a building as it is built or renovated. A variety of facings can be fitted to suit any existing brick, and it is suitable for crevice dwelling species. The box is made to match the existing brickwork of the building

2.



Access in ridge tiles; the top of the ridge beam should not be covered with a breathable membrane to avoid the sharp claws of bats becoming entangled in the fine fibres; a traditional section of bitumastic underfelt could however be used over the ridge beam

Breeding Birds

Nesting Birds - Common/Woodland/Garden

This traditional design has proved to be highly effective in attracting robins, as well as other small species such as black redstart, spotted flycatcher and wren. It is designed to be installed on the walls of houses, barns, garden sheds or other buildings and should be hung so that the entrance is to one side (at an angle of 90° to the wall). The front panel can be easily removed for cleaning.

This type of box should not be made conspicuous on a tree or bush because small predators can enter through the unprotected opening. By hanging on a wall, predators won't be able to reach the box. Alternatively hide the box in ivy, honeysuckle or other climbing plants.

See - www.nhbs.com/2h-schwegler-robin-box



Starling

Starlings are a conservation concern due to their drastic decline in numbers. These birds provide important ecological benefits as a natural form of pest control. (For example, they limit the numbers of crane flies, green oak leaf rollers and gypsy moths).

This nest box can be fixed to a wall, fence, tree or building in a position which is not exposed to full sun or prevailing wind/rain. Site approximately 3 – 4 metres above ground level where there is easy flight access and where it cannot be reached by cats or other potential predators.

Woodpecker and Starling box -

For more information see - www.nhbs.com/woodpeckerstarling-nest-box



House Martin

House Martin are a North Merseyside Biodiversity Action Plan (NMBAP) listed (under 'Urban Birds') migratory species to the UK arriving around April and leaving around October; they are a species of 'least concern' on the IUCN Red List however, are Amber listed under Birds of Conservation Concern 4 (BoCC 4) (2015) owing to local declines, reduction in range and destruction of nests by homeowners seeking to renovate property. Changes to house design and roof construction has resulted in a decline in areas suitable for House Martins to build their nests which are constructed out of mud and are most frequently encountered at exposed eaves at heights over 2 metres, in small groups of around five.



Vivapro House Martin - Double Nest

Height: 120 mm
Width: 380 mm
Depth: 150 mm
Weight: 3.6 kg
Material: WoodStone®

Quantity - x4 - to be installed on each of the elevations, beneath the open eaves

Available from - www.nhbs.com/vivara-pro-woodstone-house-martin-nest

Invertebrates

Bug hotels

Bee and Bug Houses will provide valuable habitat on site for solitary bees and other insects. At a time when many of our native insects are struggling, this is a fantastic way to give them a helping hand. Top chambers can feature wooden nesting tubes in wooden blocks, together with bamboo tubes of various sizes. Alternatively holes can be drilled into existing timber to create novel designs - perfect for attracting ladybirds, earwigs and lacewings. Other chambers can be filled with miscellaneous items such as pine cones to provide nooks and crannies for insects, aiding to provide habitat for insects that predate natural garden pests such as aphids. Natural materials, such as straw or bark, will provide an excellent winter habitat for lacewings, ladybirds, woodlice, earwigs and many other bugs. A range of other novel ideas can be used.

For example, see link - www.nhbs.com/bee-and-bug-biome



Invertebrates

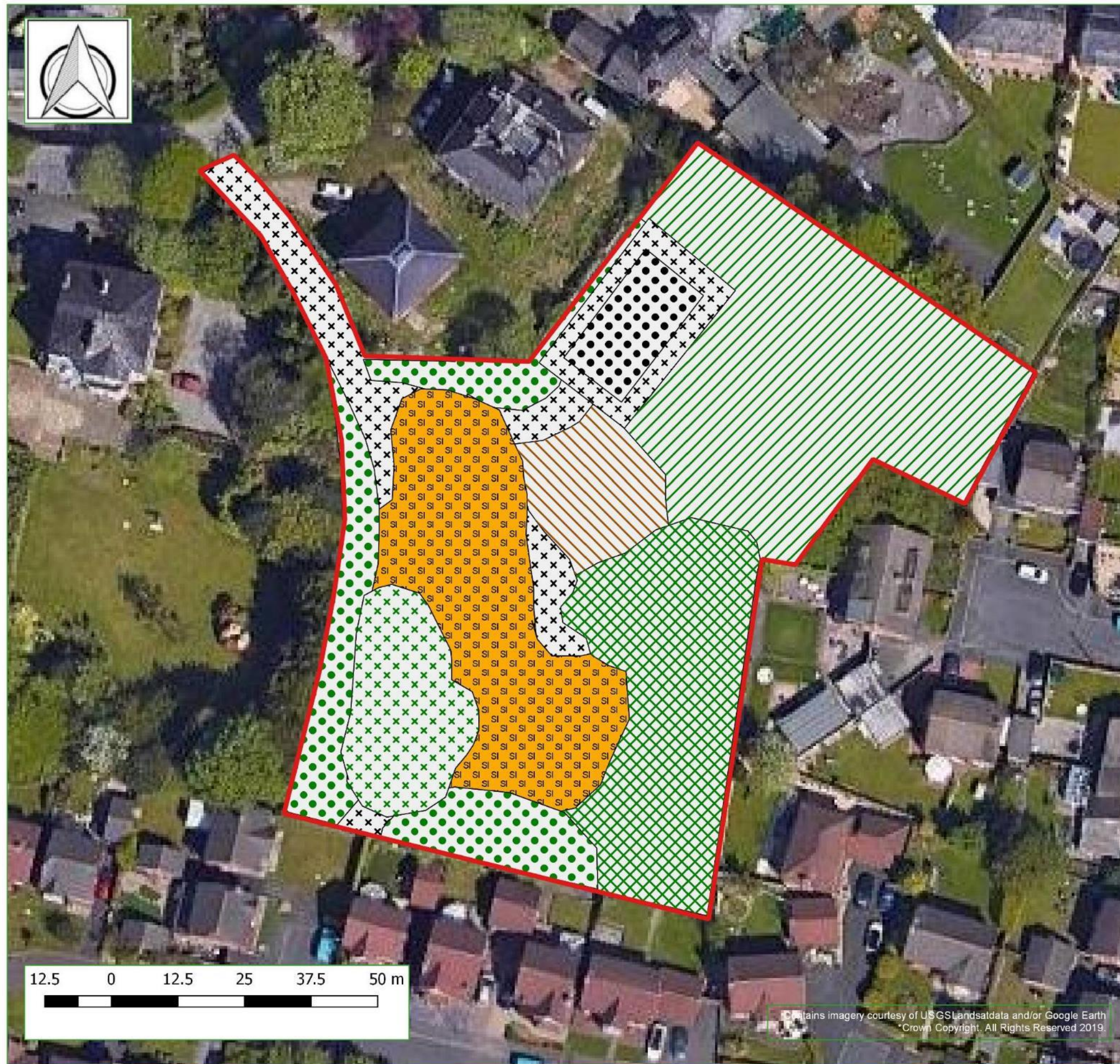
Invertebrates - Bee bricks



The Bee Brick can be used in place of a standard brick or block in construction to create habitat for solitary bees. Alternatively, it can be used as a standalone bee house in your garden or wild patch. It will provide much needed nesting space for solitary bee species such as red mason bees and leafcutter bees, both of which are non-aggressive.

Appendix V: Data Search Results

See separate PDF



Phase 1 Habitat Key

- Boundary layer
- A1.1.2 - Broadleaved woodland - plantation
- A2.1 - Scrub - dense/continuous
- A2.2 - Scrub - scattered
- A3.1 - Broadleaved Parkland/scattered trees
- B2.2 - Neutral grassland - semi-improved
- C3.1 - Other tall herb and fern - ruderal
- J1.3 - Cultivated/disturbed land - ephemeral/short perennial
- J4 - Bare ground

Proposed Roby Hall Lifestyle Living

Survey Date: 14/08/2019

Drawn: MJP

Date Drawn: 16/08/2019

Checked & Approved: KW

Size: A3

To Approximate Scale only

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