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Preliminary Ecological Appraisal

August 2024

Project Reference: PR-0246-24

Millennium Centre
Court Hey Park
Roby Road
Huyton
L16 3NA

National Grid Reference: SJ4183190026



Millennium Centre, Court Hey Park, Roby Road, Huyton, L16 3NA
Preliminary Ecological Appraisal

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Executive Summary

As part of a proposed planning application at Court Hey Park, Roby Road, Huyton (hereafter referred to as 'the site'), Tyrer Ecological Consultants carried out a Preliminary Ecological Appraisal (PEA) in May 2024. The PEA was commissioned by Knowsley Council; the full scope of proposals is not currently known but is understood to involve the clearance and redevelopment of the site in some capacity.

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

Key recommendations:

Biodiversity Net Gain

Based on the information gathered during the diurnal assessment, Millennium Centre at Court Hey Park is **not exempt** from the Biodiversity Gain Planning Condition.

No significant habitat degradation has taken place since the relevant date, despite some small areas of introduced shrubbery having been cleared this is considered regular maintenance rather than deliberate habitat degradation.

The site is host to the following biodiversity value:

- *Habitat: 5.67*
- *Hedgerow: 0.00*
- *Watercourse: 0.00*

Vegetation

Three INNS, listed under Schedule 9 (Part II) of the Wildlife & Countryside Act (1981) were located within the site; rhododendron (*rhododendron ponticum*), Wilsons honeysuckle (*Lonicera nitida*) and Japanese rose (*Rosa rugosa*).

*To prevent further spread of these species from within the site, it is recommended that all invasive species are eradicated from the site prior to development. See **Section 7.0** for details.*

Bats

Based upon the findings of the desktop and field survey, covered through sections 5.0 – 6.0 of the report and supported by **Appendix I**, the structure, B1 is determined to pertain to 'Negligible' bat roost suitability and B2 is determined to hold a suitability of 'None' in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023).

None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible*	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.

No further surveys in the form of dusk/dawn emergence / re-entry surveys are recommended on the structures with the site boundary at Court Hey Park. However, for B1, due to the aforementioned timber cladding on the western aspect it is recommended purely as a precautionary measure that these features are removed under supervision by a suitably licensed ecologist, or Ecological Clerk of Works (ECoW). This area will be subject to inspection using a torch and/ or endoscope prior to the commencement of work, to inspect for the unlikely presence of bats or bat droppings, if absent the works should proceed to completion. However, if bat(s) is/are located, work will cease, the area made good and subsequent dusk observations will need to be completed. A granted European Protected Species Mitigation License (EPSML) would further be required to legally proceed with the scheme.

All trees within the red line boundary have been categorised as pertaining to a bat roost suitability of 'FAR' in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023).

*If any of these trees are to be subject to disturbance, pruning or felling during the works, a further inspection will have to be conducted on the target tree. See **Section 6.6.3-6.6.4** for details.*

Birds

Regarding wider breeding bird species, a pair of great tits were observed breeding in the birdbox on the southwestern elevation of B1. All structures, shrubbery and trees could support breeding birds during the nesting bird season of March – August, inclusive.

Any works impacting upon these areas of potential suitability should therefore be carried out outside of the breeding bird season, typically March – September inclusive. For works within the breeding bird season, any areas that can support nesting birds should be checked by a professional Ecologist for nesting birds within 48 hours or less prior to works commencing.

Other terrestrial mammals

Badger and hedgehog have the potential to be impacted upon by the works.

*A programme of Reasonable Avoidance Measures (RAMs) is recommended to be enacted on the site to prevent impacting these species. See **Section 7.0** for details.*

Herpetofauna:

Regarding GCN, ponds are present within the site and surrounding landscape, with onsite habitat perceived to offer moderate to good terrestrial value for the species, with a record within 1.2km of the site.

It is therefore recommended that an eDNA survey should be undertaken at all accessible ponds in 250m.

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1.0 Introduction & Scope

- 1.1 As part of a proposed planning application with Knowsley Council concerning a development at Millennium Centre, Court Hey Park (hereafter referred to as 'the site'), Tyrer Ecological Consultants carried out a Preliminary Ecological Appraisal (PEA) in May 2024.
- 1.2 The PEA was commissioned by Knowsley Council; the full scope of proposals is not currently known. However, it is understood the proposals entail the clearance and redevelopment of the site in some capacity. See **Figure 1.1** below for a location plan.



Figure 1.1 – Location plan © Knowsley Council

- 1.3 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, and where these species have the potential to be impacted by the proposals for which the applicant seeks consent.
- 1.4 The PEA was carried out in accordance with the 'Guidelines for Preliminary Ecological Appraisal, 2nd Edition' (CIEEM, 2017) and all associated 'CIEEM Competencies for Species Survey (CSS)', whilst this report has been presented in accordance with the British Standard 42020:2013 Biodiversity – Code of Practice for Planning and Development.

Aims & Objectives

- 1.5 The appraisal aims to ascertain the baseline nature of the site and, where possible, obtain information on any priority wildlife habitats, or species, that may be present and if so determine if they will be affected by the proposals. The survey, therefore, includes the following objectives:
- Gather and present baseline ecological information on site/off site (as necessary) within a suitable report,
 - Identify, measure and map habitats using UK Habitat Classification – Habitat Definitions Version 2.0 (2023) habitats,
 - Identify any likely ecological constraints associated with the proposals for the site (i.e. the presence of protected / priority habitats or species that exist within the confines of the application boundary, or zone of influence (ZOI),
 - Identify measures likely to be required in line with the mitigation hierarchy (i.e. impact avoidance > minimisation > mitigation > compensation),
 - Identify any additional survey requirements,
 - Ascertain the baseline value of the habitats on site, to allow for the completion of a 'Biodiversity Statement',
 - Identify general enhancement opportunities for biodiversity in line with national and local planning policy,
 - Set out any requirements for post-development monitoring, management, or other commitments, and how they can be secured, where required.
- 1.6 As a functioning component of this specific ecological appraisal:
- Habitats on site were identified, measured and mapped using the UK Habitat Classification – Habitat Definitions Version 2.0 (2023),
 - Any buildings and trees, where present, were subject to preliminary roost assessment (PRA) for Bats and scored against the bat roost suitability parameters defined in the Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023),
 - Any accessible ponds located within a 250m radial buffer of the site were subject to the industry standard Habitat Suitability Index (HSI) assessment in relation to great crested newt (*Triturus cristatus*), in accordance with ARG UK Advice Note 5 (2010), where applicable,

- Habitats were assigned and condition assessed in accordance with Biodiversity Net Gain Principles and Rules (DEFRA, February 2024) covered in the most recent User Guide.¹

1.7 This report therefore provides important baseline information as derived from the diurnal appraisal process outlined above and recommends any necessary additional surveys, or work, where applicable, to provide a conclusive ecological impact assessment.

1.8 The Applicant should be aware then that if during the appraisal:

- The application site/area was found to be suitable for any European Protected Species (EPS), otherwise protected, or priority habitats / communities / species, or,
- Signs of use by particular protected species were found, or suspected, or,
- Seasonal constraints significantly limit the gathering of ecological information to arrive at an accurate conclusion upon which the planning application can proceed;

Then more detailed surveys may be recommended where necessary, to allow the ecologist to arrive at a conclusive impact assessment.

1.9 If protected species were subsequently found either during appraisal or during detailed further surveys and / or may be affected by the development proposals, then a European Protected Species Mitigation Licence (EPSML) may be required to proceed with the development.

1.10 Where more detailed surveys are recommended by the Ecologist, following ecological appraisal, then LPAs, on the advice of their ecological advisors, may not grant permission until such time that all relevant material information is gathered in accordance with their obligations to the legislature.

1.11 Protected / priority species omitted from this report have been discounted due to negating factors including obvious absence / isolation of suitable habitats, and / or distributional aspects negating the necessity to survey for them, and / or the proposed works were not considered to impact the species or encroach on areas where the species may be present.

¹ See:

https://assets.publishing.service.gov.uk/media/65c60e0514b83c000ca715f3/The_Statutory_Biodiversity_Metric_-_User_Guide_.pdf

2.0 Legislation & Policy

2.1 The legislature considered for the purposes of this report includes the following:

- Biodiversity Net Gain: Good practice principles for development (2019),
- BS 42020:2013 Biodiversity – Code of Practice for Planning and Development (2013),
- Conservation of Habitats and Species Regulations (2017) (as amended),
- Countryside Rights of Way (CRoW) Act (2000),
- Natural Environment and Rural Communities (NERC) Act (2006),
- National Planning Policy Framework (2023) (as last revised),
- Protection of Badgers Act (1992),
- The Environment Act (2021), including all six statutory instruments in relation to BNG,
- The Hedgerow Regulations (1997),
- The Invasive Alien Species (Enforcement and Permitting) Order 2019,
- Town and Country Planning Act (1990),
- Wild Mammals Protection Act (1996),
- Wildlife and Countryside Act (1981) (as amended).

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, 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 Legislation	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 (2017) (as amended) 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.

Species Group / Species	Relevant Legislation	Level of Protection
Birds	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.
Great Crested Newt (GCN)	CRoW Act (2000) Conservation of Habitats and Species Regulations (2017) (as amended) Wildlife and Countryside Act (1981) (as amended)	Great Crested Newts (GCN's) are fully protected from disturbance, killing, injuring or possession at any life stage. Confirmed breeding ponds and resting places are afforded the same protection.
Invasive Plant Species	Wildlife and Countryside Act (1981) (as amended) The Invasive Alien Species (Enforcement and Permitting) Order 2019	Species listed within Schedule 9/Schedule 2 as invasive, including Japanese knotweed (<i>Reynoutria japonica</i>) and Himalayan balsam (<i>Impatiens glandulifera</i>), for example, carry notoriety regarding development. The Acts make it an offence for any person to grow or cause to grow in the wild any plants listed as invasive.
Reptiles	Conservation of Habitats and Species Regulations (2017) (as amended) – SL/SS Wildlife and Countryside Act (1981) (as amended) CRoW Act (2000)	All native reptile species have some degree of protection in the UK, through section 8(1) and (5) (specified in Schedule 5) of the Wildlife and Countryside Act 1981 (as amended). Sand lizard and smooth snake are species of principal importance however with greater protection..

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 186 of the National Policy Planning Framework (as revised in December 2023) states:

“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 reasons 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.

and in section 5.91:

“In some circumstances, adequate mitigation and/or compensation for biodiversity loss may be acceptable but incapable of being provided within the application site. In such cases where appropriate, priority will be given to equivalent off site opportunities for such mitigation or, as a last resort, compensation. Such opportunities shall be prioritised in the following order:

- Firstly sites in the immediate locality of and/or within any Core Biodiversity Area near to the application site,*
- Secondly, sites in a Nature Improvement Area identified within the borough,*
- Lastly, sites in a Nature Improvement Area identified outside the borough.*

Priority Habitats & Species

2.7 In the United Kingdom, legal protection and otherwise legislative recognition is afforded to particular habitats and species based on a variety of ecological factors. These are typically referred to as priority habitats and species, and can be identified under a variety of legislation and local policy, notably the UK Biodiversity Action Plan (UKBAP), Section 41 (s.41) of the NERC Act as well as under Local Biodiversity Action Plans (LBAPS).

Biodiversity Net Gain

2.8 The National Planning Policy Framework (NPPF), revised in December 2023, legislates net gain in biodiversity through paragraphs 180(d), 185(b) and 186(d). An effort should be made, therefore, through the development design to provide ecological enhancement in order to deliver an overall increase in biodiversity, and opportunities to incorporate biodiversity in and around developments should be encouraged.

2.9 The Environment Act 2021 ('The Act') came into force in November 2021. Aspects of the Act relating to BNG came into force on the 12th February 2024, whereby BNG is mandatory under Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the Environment Act 2021).

2.10 The Act is supported by secondary legislation, consisting of six statutory instruments laid within law, of which the relevant legislation includes:

- The Environment Act 2021 (Commencement No. 8 and Transitional Provisions) Regulations 2024²
- The Biodiversity Gain Site Register Regulations 2024³
- The Biodiversity Gain Site Register (Financial Penalties and Fees) Regulations 2024⁴
- The Biodiversity Gain Requirements (Exemptions) Regulations 2024⁵
- The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024⁶
- The Biodiversity Gain (Town and Country Planning) (Modifications and Amendments) (England) Regulations 2024⁷

² <https://www.legislation.gov.uk/uksi/2024/44/contents/made>

³ <https://www.legislation.gov.uk/uksi/2024/45/contents/made>

⁴ <https://www.legislation.gov.uk/uksi/2024/45/contents/made>

⁵ <https://www.legislation.gov.uk/uksi/2024/47/contents/made>

⁶ <https://www.legislation.gov.uk/uksi/2024/48/contents/made>

⁷ <https://www.legislation.gov.uk/uksi/2024/50/contents/made>

3.0 Methodology

- 3.1 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

- 3.2 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 for nature conservation within 2.0 kilometres of the site boundary. To do so, the Multi Agency Geographic Information for the Countryside (MAGiC – provided by DEFRA) was accessed to gather such information; this particular interactive mapping service was also used to locate any locally granted European Protected Species Mitigation Licenses (EPSML) and species records to further inform conclusions concerning such species in the context of the study site and its proposed development.
- 3.3 Historic satellite imagery was reviewed using sources such as Google Earth (© 2023/24) 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.
- 3.4 In addition, the Knowsley Council ‘Search planning applications’ online 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.
- 3.5 A commercial data request to the Local Environment Records Centre serving the area, in this case is Merseyside Biobank, has not been sourced at this time, with the combination of online EPSML data, extensive company records and the daytime survey data available to the ecologist considered to contain enough information in relation to the protected species likely to be present on site. **If, however, a data search is considered to be necessary by the Local Authority or advisory body to better inform the appraisal, a proportionate data search should be commissioned with results interpreted into the conclusions and recommendations of a re-issued / updated report.**

1) The Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK (CIEEM, 2020) states data searches in:

“Situations where the data search would be extremely unlikely to provide information needed to inform the assessment, due to the scale and location of the proposed development. The appropriateness of excluding a data search will need to be judged on a case-by-case basis as, in most situations, it will be essential to carry out such a search even if the development is very small or is likely to have a low impact.”

Field survey

- 3.6 A daytime preliminary ecological appraisal (PEA) was conducted on the 15th of May 2024 and on the 28th of May 2024 – weather conditions are presented within **Table 3.1**. Surveyors in attendance and their respective dates of attendance are presented in **Table 3.2**.

Table 3.1 – Weather Conditions

Date	Weather Conditions
15/05/2024	14°C, overcast (80% cloud cover), light rain, light breeze (2/12 Beaufort scale)
28/05/2024	15°C, overcast (95% cloud cover), moderate rain, light breeze (2/12 Beaufort scale)

Table 3.2 – Site surveyor credentials and dates of site attendance

Name and Dates	Description of most relevant credentials
Miss. K. Judson Qualifying CIEEM May 15 th & May 28 th	- Consultant Ecologist with 4 years training and experience, - BSc (Hons) Biology; MSc Conservation Management, - Accredited agent on the Natural England Class 2 bat license of Mrs K Wilding CEnv MIEMA ACIEEM (CLS-14227), - Accredited agent on the Natural England Barn Owl License of Mrs K Wilding CEnv MIEMA ACIEEM (CL294-00276), - Holder of a FISC Level 5 (2022) (Botanical competency)
Miss. C. Rimmer May 15 th	- Junior Ecologist with two years' experience, currently undergoing further extensive survey training. - BSc Wildlife and Conservation - Accredited agent on the (Class 2) Natural England bat license of Mrs. K. Wilding CEnv MIEMA ACIEEM (CLS-14227).
Miss. J. Collins May 28 th	- Junior Ecologist with under 1 year of professional training and experience, - MSc in Drone applications and Wildlife conservation.

Floristic assessment

Habitats

- 3.7 The survey followed the UK Habitat Classification Version 2.0 (UKHabs, 2023) methodology, which was introduced as the successor to the Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Methodology standards (JNCC, 2010) in conjunction with the nationwide roll out of Biodiversity Net Gain. Survey techniques were also carried out with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Technical Guidance Series "Guidelines for Preliminary Ecological Appraisal, 2nd Edition" (CIEEM, 2017).

Vegetation

- 3.8 During the survey walkover, botanical assemblages were assessed, and the land was inspected for the presence of red-listed (Stroh et al., 2014; Hodgetts, 2011), 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 The Conservation of Habitats and Species Regulations (2017) (as amended). Species nomenclature follows Stace, C. (2019) – definitive English names.
- 3.9 In addition 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 and habitats may be recognised for their ecological value on a geographical scale which is adopted on a site-to-site basis (*International – National – Regional – County/Vice-County – Local*). For botanical species list compiled in full, see **Appendix II**.

- 3.10 In combination with assessing the area in relation to flora and habitats of conservation importance, the land was also assessed in relation to the presence of invasive non-native species (INNS) as listed under Schedule 9 (Part II) of the Wildlife and Countryside Act (1981) (as amended) and Schedule 2 of The Invasive Alien Species (Enforcement and Permitting) Order 2019 (IASO).

Biodiversity Net Gain

- 3.11 Assessment of baseline Area Habitat / Hedgerow / Watercourse units have been carried out and assessed separately in accordance with the guidance, principles, and rules – where present on site.
- 3.12 Measurement of habitats was carried out using a combination of desktop software – QGIS, Google Earth and MAGiC Maps 2023/24, whilst physical habitat measurements were also taken in the field during ground truthing, where necessary.

Faunal assessment

- 3.13 During site walkover, direct presence and / or evidence of priority fauna encountered was documented, whilst in tandem the area was assessed for the potential to support the priority species discussed in **Section 6.0**. The walkover also aimed to identify any ephemeral pools or unmapped waterbodies.

Bats

- 3.14 Criteria for preliminary bat roost assessment are based upon the determinants given in the Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023) (see **Figures 3.1 – 3.3**).
- 3.15 The site was assessed for bats; a daytime bat walkover (DBW) was undertaken to observe, assess and record any habitats or features suitable for usage by bats, either as commuting, foraging or roosting provision. Wider connectivity to other habitats was also considered during the DBW.
- 3.16 Buildings and other permanent / semi-permanent structures were subject to a preliminary roost assessment (PRA), to identify potential areas which may be of value to bats and to determine evidence of use. This typically involves a systematic search of the external aspects of any structure(s), comprising an investigation of features known to be used by bats (for example roofing material, soffits, fascia, lead flashing hanging tiles) using a high-powered torch and close-focus binoculars, where necessary. Where possible, an internal assessment of the structure was also carried out, with the aid of a high-powered torch and endoscope, where necessary, to identify any evidence of bat use of a structure. Field signs of bats typically comprise bat droppings, urine splashing, fur-oil staining, incidental animal presence, dead specimens and / or the presence of prey items, such as moth wings.
- 3.17 Trees (where present) would be subject to a ground level tree assessment (GLTA) using equipment such as close-focus binoculars and a high powered-torch. Potential roost features (PRFs) can include woodpecker holes, rot holes, hazard beams, other vertical or horizontal cracks or splits in stems and branches, partially decayed lifted bark, knot holes, man-made holes, tear-outs, cankers in which cavities have developed, other hollows or cavities, including butt-rots, double-leaders forming compression forks with included bark, gaps between overlapping stems or branches, partially detached climbing species with stem diameters in excess of 50mm or pre-existing bat / bird boxes. These PRFs can then be determined as PRF-I or PRF-M, dependent on their suitability for individual / low numbers of bats or their capability to host multiple bats.

3.18 Factors considered during the preliminary roost assessment include:

- Practical experience of the surveyor,
- Knowledge of bat species relevant to the site location and geographical range,
- Nature of the immediate / surrounding habitat in relation to foraging opportunities,
- Presence / absence of roost potential,
- Value and types of roost potential, if present (i.e. – maternity, hibernation, transitional).

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.

Potential suitability	Description	
	Roosting habitats in structures	Potential flight-paths and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible ^a	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^b 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 and not a classic cool/stable hibernation site, but could be used by individual hibernating bats ^c).	Habitat that could be used by small numbers of bats as flight-paths 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 with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ^b and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is 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 flight-paths 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 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 ^b and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths 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 Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute).

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

^c 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.*, 2016 and Jansen *et al.*, 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). 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 prominent buildings in the landscape, urban or otherwise.

Figure 3.1 – BCT guidelines extract

Table 4.2. Guidelines for assessing the suitability of trees on proposed development sites for bats, to be applied using professional judgement.	
Suitability	Description
NONE	Either no PRFs in the tree or highly unlikely to be any
FAR	Further assessment required to establish if PRFs are present in the tree
PRF	A tree with at least one PRF present

Figure 3.2 – BCT extract on tree roost suitability criteria

Table 6.2. Guidelines for categorising the potential suitability of PRFs on a proposed development site for bats, to be applied using professional judgement.	
Suitability	Description
PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony.

Figure 3.3 – BCT extract on tree roost categorisation criteria

Birds

3.19 The site was inspected for evidence of nesting and suitability for relevant species. Bird species observed and heard were recorded on site, and a search was made for nest material, or areas suitable for nesting – this can take the form of searching structures, woody vegetation, semi-aquatic vegetation such as reeds and / or ground flora. Elevations of any buildings or structures on site were inspected for evidence of birds that show a high dependency upon built structures, many of which are in a state of decline. These might include the following species for example (list non-extensive):

- **House martin** (*Delichon urbica*): Birds of Conservation Concern (BoCC) red status,
- **House sparrow** (*Passer domesticus*): BoCC red status,
- **Starling** (*Sturnus vulgaris*): BoCC red status,
- **Swift** (*Apus apus*): BoCC red status.

3.20 Additional to the site's capacity to support generally common species for breeding, the area was also subject to an assessment for wider capacity to support species with extra protection under Schedule 1 (Sch.1) of the Wildlife & Countryside Act (1981) (as amended) and other priority species.

Other terrestrial mammals

3.21 The walkover included an assessment for the presence / suitability of badger (*Meles meles*), which includes signs of activity such as prints, hairs, digging, setts, 'runs' leading to and from a sett and the existence of latrines or 'snuffle' holes where badgers have foraged in the ground.

3.22 The site was also assessed for the presence / suitability of European hedgehog (*Erinaceus europaeus*) and other priority mammals.

Herpetofauna

- 3.23 During desktop assessment, a 250 metres radial search was undertaken from a site central grid reference in relation to the presence of ponds, ditches or other water bodies that may support great crested newt (GCN) (*Triturus cristatus*). The information gathered would then be used to aid in establishing if more detailed surveys are required.

NB: *English Nature's (now Natural England) Great Crested Newt Mitigation Guidelines (2001) states ponds within 500m of a proposed development site should be considered for their potential to support GCN, however, in some instances this distance may be reduced to 250m due to the presence of physical barriers and obstructions or based on the likely magnitude of impacts arising from the proposed development.*

- 3.24 Following current best practice considering the partial roll out of District Level Licencing (DLL) across England and based on likely effects, a proportionate assessment of the water bodies range within 250m from site has been applied. Where a development is anticipated to affect GCN the search can be extended up to 500m or more.
- 3.25 The GCN Habitat Suitability Index (HSI) is a quantitative measure of habitat quality evaluating the suitability of habitat for GCN. The HSI outputs a result of between 0 and 1, derived from an assessment of ten habitat variables known to influence the presence of newts, with a result of 1 being optimal habitat (high probability of occurrence), while an HSI of 0 is very poor habitat (minimal probability of occurrence). The HSI is calculated on a single pond basis but takes into account surrounding terrestrial habitat and local pond density. The tool is particularly useful in survey and mitigation; one benefit is that it can be undertaken in a single field visit (with supporting desk work) and at any time of the year (though some variables are more easily measured in spring and summer).

Its main uses are:

- *In surveys, to assess habitat quality in a repeatable, objective manner. In particular, the HSI allows individual factors that influence newt presence to be easily identified. These factors could help explain a very high or very low count. A high HSI can justify employing additional survey effort or methods if no newts are found initially.*
- *In impact assessments, to allow a measure of how damaging a development could be. HSI might also be used as a screening tool to select no impact or minimal impact options.*
- *In risk assessments, helping to decide whether an offence might be committed, and therefore whether a licence should be applied for. If a pond has a very low HSI score (say <0.5) then there would typically be a minimal chance of GCN presence. Hence, with due care and in limited circumstances the HSI might be used in the absence of newt surveys to help conclude that an offence is highly unlikely and therefore work could proceed in that area without a licence. This application of the HSI should only be used where the predicted impacts - were newts to be present - would be low (e.g. development at least 100m from pond, permanent habitat loss <0.5ha or temporary habitat loss <5ha). The developer should be aware that there would still be a risk of committing an offence, but it would typically be so low as to be negligible. Obviously, note that if HSI >0.5, this is not confirmation of newt presence; a newt presence/absence survey would be required to confirm this.*
- *In habitat enhancement, HSI could be used to identify the low-scoring factors in an existing pond that need addressing to improve its quality for newts.*
- *In post-development monitoring, to allow an assessment of habitat condition.*

3.26 GCN HSI Limitations:

The GCN HSI is not a substitute for undertaking newt surveys; it indicates but cannot confirm presence or absence of GCN. A licence application that infers GCN presence solely from HSI data (i.e. no newt survey data presented) will be rejected. Very low HSI scores may be used along with scheme details to infer a minimal chance of committing an offence in low impact situations. This is on a risk assessment basis and developers should be aware of the potential hazards of this approach. Care should be taken when interpreting low HSI scores; for example, a low scoring pond close to an occupied newt pond may still support newts.

3.27 The site and surrounding habitats were also assessed relative to their potential to offer suitability for wider, generalist amphibians, in addition to GCN, for example common toad (*Bufo bufo*) and common frog (*Rana temporaria*).

3.28 The site and its surroundings were assessed for suitability for use by reptiles, with particular attention paid to features that could be used as basking areas (e.g. south-facing slopes), hibernation sites (e.g. banks, walls, leaf litter, piles of hardcore) and opportunities for foraging (e.g. rough grassland and scrub). Beebee & Griffiths (2000) state specific habitat preferences of common UK reptiles:

- **Common lizard** (*Zootoca vivipara*) use a variety of habitats from woodland glades to heaths, walls and pastures, as well as brownfield sites.

3.29 In assessment of a site for reptiles several important habitat characteristics are considered, outlined in **Table 3.2** below, as derived from the Reptile Habitat Management Handbook (Edgar, 2010).

Table 3.2 – Important habitat characteristics for reptiles

1. Location (in respect of species range)	7. Connectivity to good quality habitat
2. Vegetation structure	8. Prey abundance
3. Insolation	9. Refuge opportunity
4. Aspect	10. Hibernation habitat potential
5. Topography	11. Disturbance regime
6. Surface geology	12. Egg-laying site potential

Invertebrates

3.30 The site was assessed for the presence of features that should be considered of high value to invertebrates. Several important features were considered, based on the assemblage descriptions provided within the Research Report “Surveying terrestrial and freshwater invertebrates for conservation evaluation” (NERR005, 2007), including but not limited to:

- Wood decay,
- Early successional mosaic habitat,
- Shaded ground layer,
- Still and flowing water.

Quality Assurance (QA)

3.31 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.

3.32 The results, conclusions and recommendations of this report have been assessed by Mrs. K. Wilding, Director of Tyrer Ecological Consultants Ltd.

4.0 Limitations

- 4.1 This report does not contain a comprehensive list entailing the totality of botanical taxa on site. Species listed within **Appendix II** are recorded from a combination of the seasonal timing that the survey took place and botanical identification skills of the surveyor. Many plant species are only evident at certain times of the year; consequently, it is possible that some plant species may have gone undetected.
- 4.2 The optimal time of the year to carry out a preliminary ecological appraisal / UK Habitats survey is April to October; the survey was therefore carried out within an optimal period.
- 4.3 The survey took place within the active bat season and the breeding bird season; evidence of these species groups is therefore most apparent in this time period.
- 4.4 No access was achieved to the lowland mixed deciduous woodland at the northeast of the site (woodland 1) which is encompassed by tall permanent fencing – the woodland could however be observed through the fencing. Hence, the woodland condition assessment presented within this report is based on information obtained from what was observable from outside of the woodland. It is possible therefore that some features which may affect the condition assessment of this woodland may have gone unnoticed.
- 4.5 Owing to dense vegetation, not all of the areas of broadleaved woodland and mixed scrub located to the southern centre of the site could be accessed. Therefore, condition assessment is based on areas of these habitats that were observable. It is again therefore considered possible that characteristics of the aforementioned habitats may have gone unnoticed which may impact the condition assessment results presented within this report.
- 4.6 In addition to constraints to condition assessments, owing to access constraints and therefore vantage constraints, potential roost features (PRFs) within the many trees that are located within the site boundary may have gone un-recorded. This is taken into consideration in the conclusions and recommendations of this report.
- 4.7 With access constraints taken into account it is considered that results of this report are true only of the areas of the site that were observable and accessible to the surveyors and therefore should be taken with caution. The majority of the site could however be accessed and the surveyors are satisfied that the data obtained is reflective of the conditions of the site at the time of the site visits.

5.0 Desk Study Results

- 5.1 The site at Court Hey Park is a 0.068ha site situated approximately 7.5km east of Liverpool City Centre and is comprised of a linear building surrounded by areas of hardstanding, an outbuilding, woodland, scrub and waterbodies. The site is that of the former National Wildflower Centre which closed in 2017; since its closure, the site has experienced significant levels of scrub encroachment, and the building has fallen into disuse and disrepair. See **Figure 5.1** below for location of the site within the surrounding landscape.

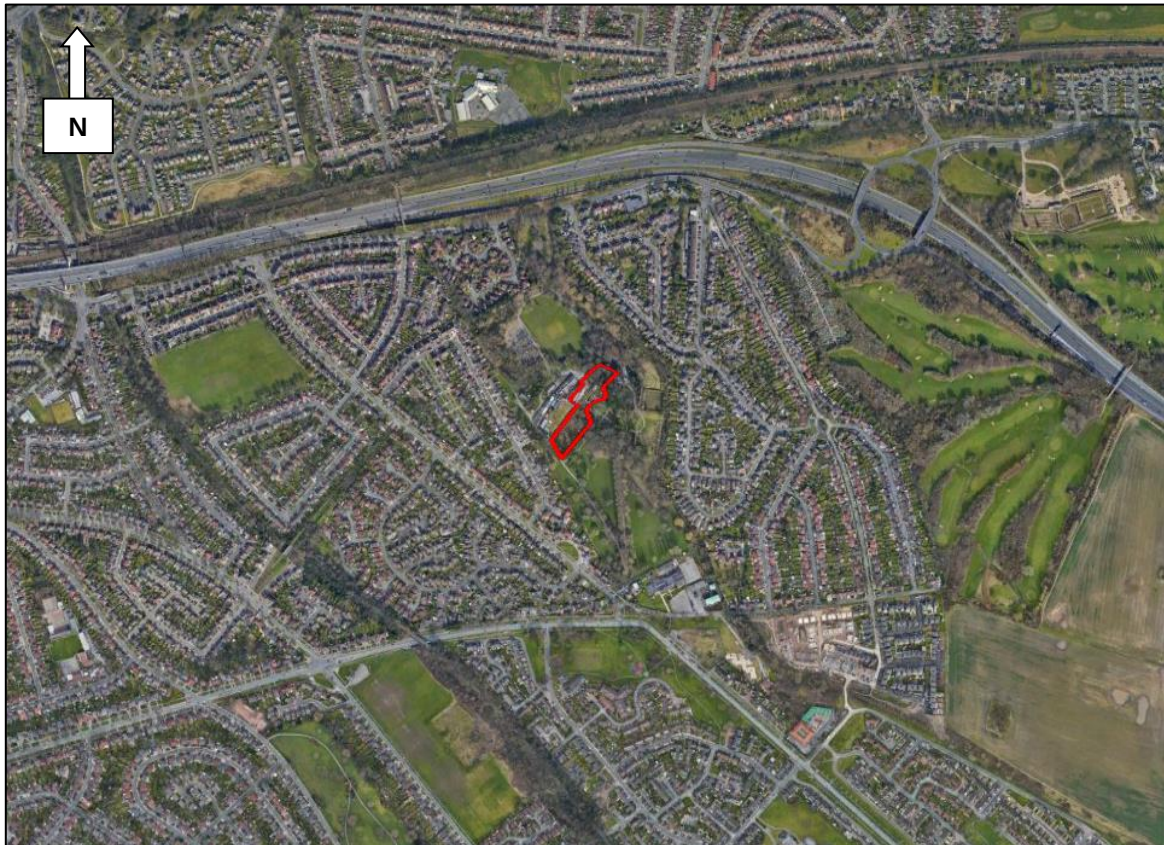


Figure 5.1 – Location of red line boundary within surrounding landscape © Google Earth Pro 2024

- 5.2 The immediate environment is characterised by areas of lowland mixed deciduous woodland, amenity use public greenspaces and residential infrastructure with occasional ponds, lines of trees and hedgerows also present. Extending out, residential infrastructure becomes more dominant though areas of semi-natural habitat in the form of further amenity green space and Bowring Park and Golf Course provide habitat of ecological value whilst lines of trees and scrub vegetation which flank the M62, roads, public footpaths, railway lines and cycle routes provide connectivity to the site from the wider surrounds.

Relevant Planning History

- 5.3 A search of Knowsley Council Planning Portal using the search term ‘Court Hey Park’ revealed an absence of planning applications pertaining to the site in the past 10 years. One planning application from 2010 was however identified. This application pertained to the “erection of two storey mixed use building comprising offices, meeting rooms, exhibition space, seed cleaning, seed sowing and plant nursery areas” at the site (Planning Ref: 09/00616/FUL). No ecological documentation in association with this planning application is available online.

Designated Sites

- 5.4 There is one statutory designated site for nature conservation within 2.0km of the site (see **Table 5.1** for details and **Figure 5.2** below for a visual aid).

Table 5.1 – Statutory designation types and reasons for designation within 2.0km buffer

Site name	Designation type	Interest features
Childwall Woods & Fields (1.1km south)	Local Nature Reserve (LNR)	A 27.44 hectare site designated for the variety of habitats present including neutral grassland and broadleaved woodland, with species including native Bluebell (<i>Hyacinthoides non-scripta</i>), Linnet (<i>Carduelis cannabina</i>), Siskin (<i>Carduelis spinus</i>) as well as a wide range of butterflies.



Figure 5.2 – Designated site and EPSML data for the area within 2.0km of application site © MAGiC Maps 2024

- 5.5 The site is positioned within the Impact Risk Zone (IRZ) for a number of designated sites in the wider landscape, with the nearest being The Dee Estuary SSSI at a distance of 6.5km. The exact scope of proposals is unknown, and as such further consultation with Natural England (NE) may be necessary in relation to residential disturbance.

Biodiversity Net Gain

- 5.6 A review of the Liverpool City Regions Ecological Network– Viewer⁸, which displays spatial data for policies and land use priorities in accordance with the Local Plan was undertaken, all habitats located within the site boundary are categorised as being ‘Formally identified within local strategy’ within the Statutory Biodiversity Metric as the site falls into the following categories:

⁸ Available here: [Ecological Network Viewer \(lcreconet.uk\)](https://ecological-network-viewer.lcreconet.uk)

- **Core Biodiversity Area – Designated sites**
- **Core Biodiversity Area - Woodland**

Habitats

- 5.7 An online search of MAGiC Maps identified a single priority habitat within a 2.0km search radius in the form of deciduous woodland, there are areas present within the site boundary itself as well as scattered across the wider landscape.

Vegetation

- 5.8 The site is positioned within a **high** zone of the 'summarised botanical value map 2022⁹', within the **high** category for woodland, fen, marsh and swamp habitats, though no indicators for Rare, Scarce and Threatened (RST) botanical species were found.

Bats

- 5.9 An online search of MAGiC maps revealed a lack of European Protected Species Mitigation Licences (EPSMLs) in relation to bats have been granted within a 2.0km radius of the site.
- 5.10 Tyrer Ecological Consultants Ltd have previous and ongoing projects involving of bats within the 2.0km search buffer surrounding the site – as such, the following biological data (See **Table 5.2**) is readily available to the Ecologist from the company database – all data has been previously submitted to the LERC serving the area, which, in this case, is Merseyside BioBank.

Table 5.2 – LERC submitted biological data records collected by Tyrer Ecological Consultants Ltd

Year	Distance from site	Context (Where relevant)
2021	1.7km southwest	Absence of bat activity during a dawn survey
2015	1.6km east	Ten common pipistrelle (<i>Pipistrellus pipistrellus</i>) foraging/commuting

- 5.11 Whilst the surrounding residential area of Roby and the M62 (280m north) is highly illuminated and subject to heavy disturbance, the woodland and treelines within Court Hey Park and Bowring Park golf course (390m east) provide favourable areas of foraging habitat; the species considered most likely to exist within proximity are the common pipistrelle (*Pipistrellus pipistrellus*), typically linked with roosting in occupied dwellings, as well as the brown long-eared bat (*Plecotus auritus*), which is more commonly associated with deciduous woodland and semi-natural habitat.

Birds

- 5.12 Bird species likely present on the site and within proximity are likely to be common garden and woodland bird species, with the mature tree lines likely to provide suitable habitat for a moderately diverse assemblage of bird species.
- 5.13 The aforementioned linear and area features suitable for bats would also afford connective habitat for bird species in the wider landscape.

⁹ Further information available [Summarised Botanical Value Map - data.gov.uk](https://data.gov.uk)

Other Terrestrial Mammals

- 5.14 Semi-natural habitats inclusive of priority deciduous woodland is present on and around the site; protected mammal species such as badger and European hedgehog would therefore find favourable habitat within feasible connectivity to the site.

Herpetofauna

- 5.15 No EPSMLs in relation to GCN have been granted within a 2.0km search radius of the site.
- 5.16 No 'GCN Pond Surveys 2017 – 2019' records are present within 2.0km.
- 5.17 A single positive 'GCN Class Survey Licence Returns' point is present (1.2 km southeast) within the 2.0km search buffer dating to 2016.
- 5.18 Based on the desktop assessment, four standing waterbodies (**Ponds 1-4**) were identified within a 250m radius of the site (see **Figure 5.3** below), two of which lie within the site. Additionally, a linear waterbody (ditch) is located to the east of the site.

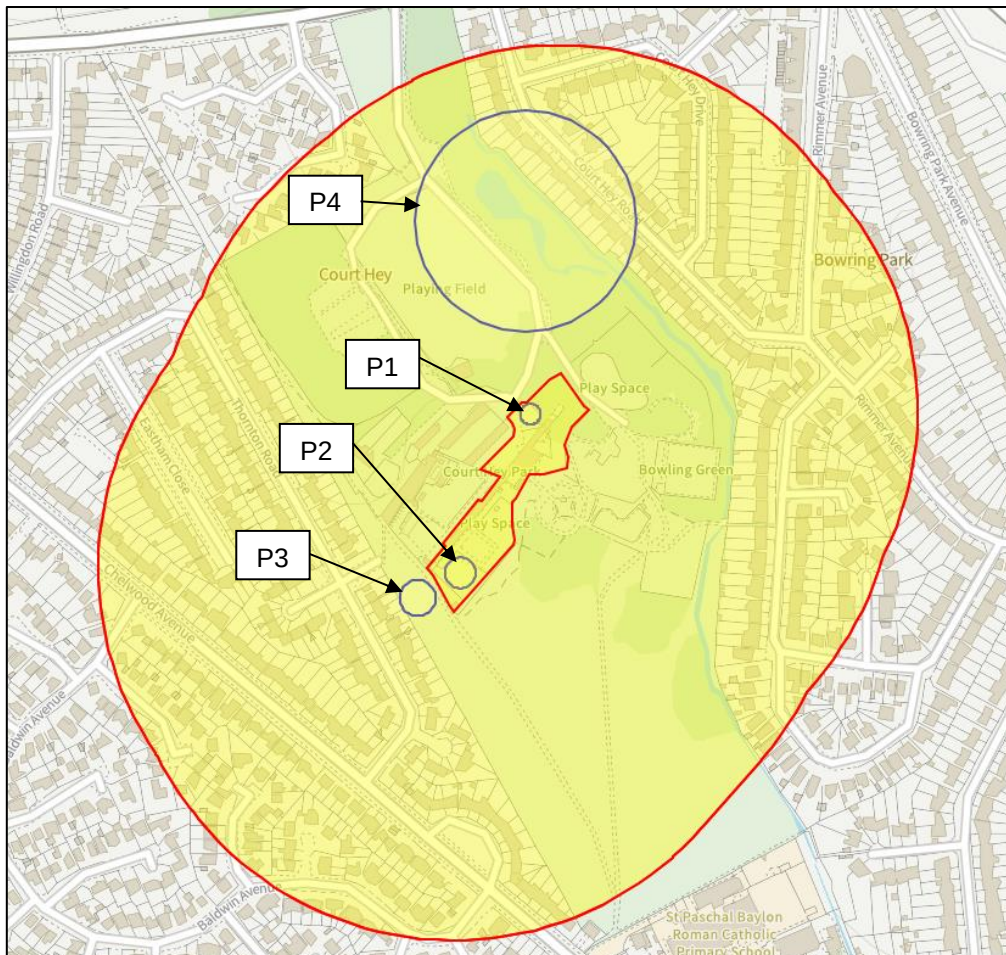


Figure 5.3 – Location of standing waterbodies within a 250m buffer © MAGiC Maps 2024

- 5.19 HSI assessments were undertaken on Ponds 1-3 (See **Table 6.6.1**). Previous ecological surveys undertaken by Tyrer Ecological Consultants in 2022 at the site undertook HSI surveys at ponds 1 and 2; later an eDNA survey was undertaken at Pond 1 with an eDNA survey attempted at Pond 2 which at the time was unviable owing to a lack of water within the pond. eDNA results were that Pond 1 was found to be absent of any DNA pertaining to GCN ('Negative' result).

- 5.20 The site hosts regularly mown amenity grassland presence of waterbodies both within site and the wider area of Court Hey Park, as well as the nature of the surrounding habitat consisting of shrubbery and woodland, it is considered likely that the site could host generalist amphibians such as common frog and common toad.
- 5.21 The site was found to be of moderate value to reptiles, the woodland was found to be heavily shaded with no opportunities for basking. The shrubbery likely offers some degree of suitability through a heterogeneous vegetation structure for refuge and garden waste within the community garden could also provide suitable egg-laying and hibernation areas for reptiles; however, no suitable basking opportunities were identified. The remaining habitats onsite serves a predominantly amenity function, subject to high levels of disturbance, highly fragmented and as lack any notable ecotones or basking areas.

Invertebrates

- 5.22 No specially protected invertebrate assemblages are likely to be present at the application site. Habitats and species on site are commonplace throughout the local and wider environment.

6.0 Field Survey Results

6.1 Habitat Survey & BNG Baseline Summary

6.1.1 See **Table 6.1.1** (below) for baseline information and habitat descriptions; refer to **Appendix I** for any supporting imagery; additional scientific names are given in **Appendix III**. Refer to **Appendix V – UK Habitats Map** for the location of described habitats & Target Notes (TN). **Appendix II** features full Condition Assessment Sheets.

Table 6.1.1 – UK Habitat types within the survey area

Area habitat	Sec. Codes	Description
w1f Lowland mixed deciduous woodland (1)	-	At the northeast of the site is an area of enclosed woodland that is mapped on MAGiC Maps (2024) as the priority habitat 'lowland deciduous woodland' – the surveyor's assessment is in agreement with this categorisation. As stated within Section 4.0, this area of woodland was not accessible to the surveyors at time of survey hence an assessment of the habitat was undertaken from outside of the woodland. Species observed within the woodland include yew (<i>Taxus baccata</i>), ash (<i>Fraxinus excelsior</i>), Scot's pine (<i>Pinus sylvestris</i>), rowan (<i>Sorbus aucuparia</i>), English oak (<i>Quercus robur</i>), sycamore (<i>Acer pseudoplatanus</i>) and Turkey oak (<i>Quercus cerris</i>) amongst occasional others. Understory species observed include holly (<i>Ilex aquifolium</i>), rhododendron (<i>Rhododendron ponticum</i>). Piles of deadwood were observed within the woodland however trees could not be fully inspected for potential roost features and natural ecological niches hence the condition assessment result precautionarily assumes their presence. Condition: Moderate Habitat Area: 0.119ha Strategic Significance: Formally identified in local strategy
w1h Other woodland; mainly broadleaved	11 Secondary woodland	Within the site at areas of secondary woodland with occasional mature trees are present. Owing to the historic use of the site as a former National Wildflower Centre set within an area of amenity use greenspace, there are some mature planted trees however the prevailing vegetation present appears to be secondary woodland that has recently succeeded from mixed scrub interspersed with areas of bramble scrub. Species include Norway maple (<i>Acer platanoides</i>), osier (<i>Salix viminalis</i>), whitebeam (<i>Sorbus</i> sp.), sycamore, goat willow (<i>Salix caprea</i>), horse chestnut (<i>Aesculus hippocastanum</i>), cherry laurel (<i>Prunus laurocerasus</i>) and sycamore (<i>Acer pseudoplatanus</i>) amongst occasional others.

		Condition: Moderate Habitat Area: 0.21ha Strategic Significance: Formally identified in local strategy
f2d Aquatic marginal vegetation	-	Surrounding the pond located at the southeast of the site is an extensive area of aquatic marginal vegetation that is encroaching significantly into the pond itself likely owing to absence of recent management. Species abundantly observed include bramble (<i>Rubus fruticosus</i> agg), valerian (<i>Valeriana officinalis</i>), great willowherb (<i>Epilobium hirsutum</i>), meadowsweet (<i>Filipendula ulmaria</i>), marsh marigold (<i>Caltha palustris</i>), male fern (<i>Dryopteris felix-mas</i>), yellow iris (<i>Iris pseudacorus</i>) and pendulous sedge (<i>Carex pendula</i>). This habitat grades into bramble and mixed scrub at its perimeter.
		Condition: Moderate Habitat Area: 0.02ha Strategic Significance: Location ecologically desirable but not in local strategy
Mixed scrub		Surrounding the marginal vegetation at the site and to the southeast of the centre of B1 are areas of mixed scrub. These habitats could not be thoroughly accessed and assessed owing to their density however, from a distance these areas were observed to host hawthorn (<i>Crataegus monogyna</i>), sycamore (<i>Acer pseudoplatanus</i>), willows, whitebeam (<i>Sorbus aria</i>), cherry laurel (<i>Prunus laurocerasus</i>) and bramble. Scattered trees are also present in the form of silver birch (<i>Betula pendula</i>), sycamore, and willows.
		Condition: Poor Habitat Area: 0.06ha Strategic Significance: Location ecologically desirable but not in local strategy
u1f Sparsely vegetated urban land	-	Areas of sparsely vegetated urban land are located at the north of the site adjacent to the site entrance and the northern section of the building (B1) and to the west of it. Numerous species are observed growing on areas of developed land throughout the site hence an exhaustive list is presented in Appendix II, however species frequently encountered are as follows: barren brome (<i>Bromus sterilis</i>), annual meadow-grass (<i>Poa annua</i>), black medick (<i>Medicago lupulina</i>), broad-leaved willowherb (<i>Epilobium montanum</i>), cock's-foot (<i>Dactylis glomerata</i>), common nettle (<i>Urtica dioica</i>), creeping buttercup (<i>Ranunculus repens</i>), creeping thistle (<i>Cirsium arvense</i>), false oat-grass (<i>Arrhenatherum elatius</i>), garlic mustard (<i>Alliaria petiolata</i>), spear thistle (<i>Cirsium vulgare</i>), bramble (<i>Rubus fruticosus</i> agg) and various other species.

		Condition: Good Habitat Area: 0.078ha Strategic Significance: Area / compensation not in local strategy / no local strategy
u1b5 Buildings	-	One building is present within the site boundary and one small shed located just outside of the site boundary that was surveyed as a matter of precaution. These buildings are described with respect to their potential to host roosting bats and breeding birds in Section 6.3 of this report. Condition: N/A Habitat Area: 0.0763ha Strategic Significance: Area / compensation not in local strategy / no local strategy
u1b6 Other developed land	-	Developed land / hardstanding features at various points throughout the site and in various characters. Condition: N/A Habitat Area: 0.147ha Strategic Significance: Area / compensation not in local strategy / no local strategy
r1 40 Ponds		Two ponds are present within the site boundary. Owing to the high likelihood that they support common toad (<i>Bufo bufo</i>), a UKBAP species, the ponds on site are considered to be 'Priority Ponds' based on the UKHabs v2.0 definition of the habitat. Pond 1, located at the north of the site, features species including yellow flag iris (<i>Iris pseudacorus</i>), great willowherb (<i>Epilobium hirsutum</i>), meadowsweet (<i>Filipendula ulmaria</i>), bramble, cleavers (<i>Gallium aparine</i>), creeping buttercup (<i>Ranunculus repens</i>) and occasional other species including some encroaching tree saplings such as Norway maple and willows (<i>Salix</i> sp.). Pond 2 is located at the south of the site and, like Pond 1, features species such as yellow flag iris, great willowherb and meadowsweet but additionally features common valerian (<i>Valeriana officinalis</i>), marsh marigold (<i>Caltha palustris</i>). Condition: Moderate Habitat Area: 0.015ha

		Strategic Significance: Location ecologically desirable but not in local strategy
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Target Notes	
1	Location of Japanese Rose INNS
2	Bund colonised by ruderals
3	Storage building with green roof
4	Location of rhododendron INNS
5	Deadwood pile

6.2 Vegetation

Notable species

- 6.2.1 No species of conservation importance were located anywhere within the site during the appraisal.

Invasive non-native species (INNS)

- 6.2.2 Three INNS, listed under Schedule 9 (Part II) of the Wildlife & Countryside Act (1981) were located within the site, notably rhododendron (*rhododendron ponticum*), Wilsons honeysuckle (*Lonicera nitida*) and Japanese rose (*Rosa rugosa*). See **Appendix V** Target Notes for specific locations.

6.3 Bats

- 6.3.1 Two structures are located within the red line boundary of the site. See **Figure 6.3.1** for the locations of each building in reference to the site boundary; **Table 6.3.1** describes each building in relation to its suitability to offer roosting potential for bats (both externally and internally, where access allowed) and further information regarding evidence or lack of evidence of bats, where applicable.

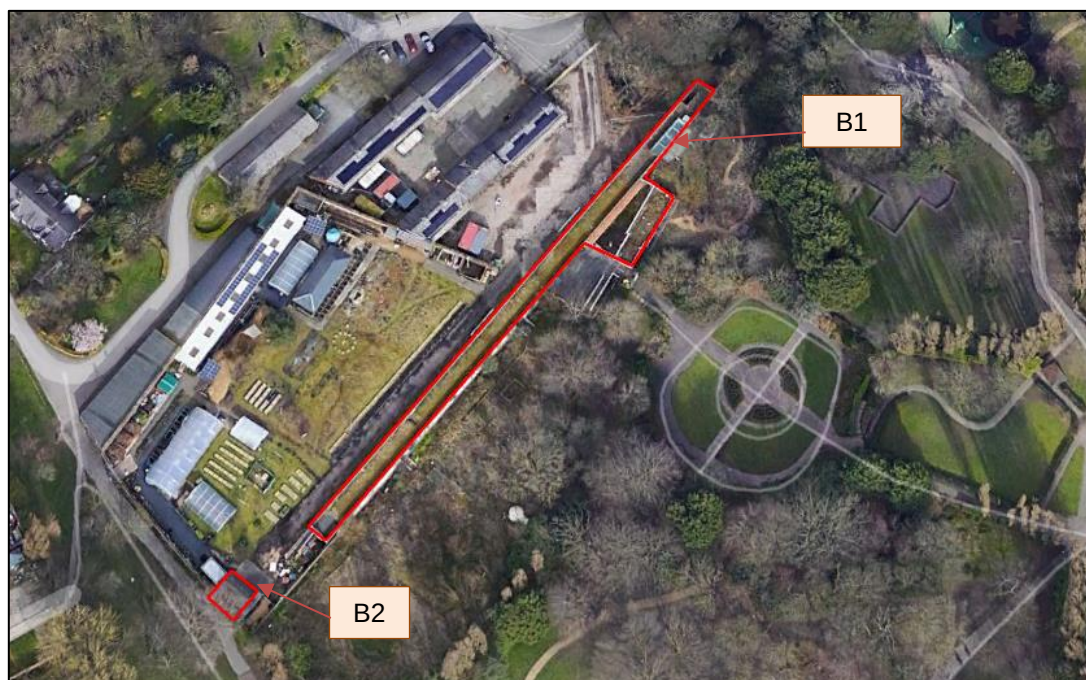


Figure 6.3.1 – Location of the structures within the site boundary © Google Earth Pro 2023/24

Table 6.3.1 – Structure descriptions at the application site

B1
Building 1 (B1) is a concrete building with a flat green roof, it was formerly utilised as a visitor centre although in more recent years, is utilised for storage. The structure features components such as timber slatted and metal panelling with timber doors and associated lighting. The building is to the approximated maximum dimensions of 125.0 m x 14.5 m x 6.0 m (length x width x height); in respect of its condition, the surveyor is not qualified to assess structural state; however, the aesthetic condition of the building was adjudged to be fair. There is no loft space present in the building, as a result, the building is not suitable for the breeding purposes of loft-dwelling bat species such as the brown long-eared bat; these species require open loft spaces with room for free flight in order to raise their young, with consistent thermal characteristics; no signs of use were observed by the surveyors. However, this does not necessarily discount the buildings use for other roosting purposes. It is unknown whether any roof lining is present beneath the flat roof; where present, bitumastic underfelt or other such roof linings typically improve a building's value to bats, notably for crevice-dwelling bats of the <i>Pipistrellus</i> genus, whereby the bats roost between the lining and the roof cover material provided external opportunities exist. NB: <i>The breeding roosts of Pipistrelle bats are proportionally higher in occupied residential dwellings where the warm, dry conditions favour the requirements of a maternity colony but other structures are also used, especially for hibernation or by male bats which do not need the same conditions as a maternity colony.</i> Externally, a PRF in the form of the timber cladding on the western elevation was observed although upon further inspection this was discounted due to the continuous open void behind offering a lack of crevices in addition to the smooth sawn nature of the timber. Due to the single discounted PRF, the structure, B1 is duly categorised as pertaining to 'Negligible' bat roost suitability, in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023).

B2

Building 2 (B2) is a timber-built pavilion utilised as a classroom with timber panelled walls at three elevations and the northeastern elevation fully exposed. The structure features components such as timber beams, stone foundations, security lighting and a pitched roof with tight slate and ridge tiles above. The structure is to the approximate dimensions of 6.0m x 5.0m x 3.0m; the structure is judged to be in fair aesthetic condition.

Internally, the building is open fully from the northeastern elevation making it highly illuminated, cool and draughty. There is no loft space present within the building.

Based on the above, the structure is considered unsuitable for maternity usage by both loft and crevice-dwelling bat species. This does not however rule the structure out for alternative roost usage by either species group, though no signs of use were observed.

No underfelt is present beneath the roofing material, the roof is internally lined with tight fitting timber boards. Internally or externally, no PRFs were noted by the surveyors.

Based on the above, the structure **B2** is duly categorised as pertaining to a bat roost suitability of '**None**', in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023).

- 6.3.2 There are likely numerous trees on site that host bat potential, it was unfeasible to conduct a GLTA on every tree due to ground level visual constraints in addition to their abundance and the proposals being unknown. As a result, all trees have been categorised as pertaining to a bat roost suitability of '**FAR**' in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023).
- 6.3.3 If any of these trees are to be subject to disturbance or felling during the works, a further survey in the form of an endoscopic investigation via either climbing equipment or a Mobile Elevated Work Platform (MEWP) will have to be completed by a suitably licensed (holder or accredited agent on a Class 2 bat license from Natural England) Ecologist to determine the nature of any PRFs and whether any evidence of bats exists.
- 6.3.4 From a habitat suitability assessment in relation to bat activity, the woodland and taller vegetation are likely of moderate value for commuting bats in that they provide recognisable and long-standing corridors of connectivity. The unlit nature of the majority of the site may also provide suitable foraging areas.

6.4 Birds

- 6.4.1 In relation to WCA Schedule 1 specially protected bird species such as barn owl, no evidence of roosting, such as pellets or faecal splashing were identified within the site boundary and the partially lit and shaped nature of the site makes it unlikely to be utilised for foraging purposes although some of the veteran trees could offer roosting potential. Despite this, the closest area of viable hunting habitat for such species is the arable land 1km to the south, the high disturbance and illumination of the residential areas encapsulating Court Hey Park is likely to decrease the likelihood of barn owls commuting to this area.
- 6.4.2 Regarding other bird species, a pair of great tits were observed breeding in the bird box on the western elevation of B1 (See **Plate 12**) Both of the structures on site provide suitable nesting platforms for a variety of bird species and could support nesting birds during the nesting bird season of March – August inclusive. The following species were encountered on site (see **table 6.4.1**).

Table 6.4.1 – Birds encountered whilst on site

Common Name	Binomial Name	Status
Wren	<i>Troglodytes troglodytes</i>	Amber
Wood pigeon	<i>Columba palumbus</i>	Amber
Blackbird	<i>Turdus merula</i>	Green
Blue tit	<i>Parus caeruleus</i>	Green
Chiffchaff	<i>Phylloscopus collybita</i>	Green
Collared dove	<i>Streptopelia decaocto</i>	Green
Great tit	<i>Parus major</i>	Green
Goldfinch	<i>Carduelis carduelis</i>	Green
Magpie	<i>Pica pica</i>	Green
Robin	<i>Erithacus rubecula</i>	Green
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 Q - Qualifying species of nearby SSSI site(s) SPEC - a species of conservation concern, Amber or Red, Red being the highest conservation priority		

6.5 Other Terrestrial Mammals

Badger & hedgehog

- 6.5.1 Some signs of mammal activity were observed on site in the form of mammal runs throughout the vegetation within the woodland to the north of the site; it cannot conclusively be determined to which species these belonged to.
- 6.5.2 No other field signs of badger, such as latrines, hairs, footprints, or feeding signs, for example snuffle holes and scratched trees / logs, were located within the site boundary. It is considered that this species could feasibly be present on the site due to the presence of the woodland although connectivity to the wider semi-natural environment for the species is suboptimal but feasible.
- 6.5.3 Whilst no direct evidence of hedgehog was identified, the site habitats provide highly suitable refuge with scrub and deciduous woodland providing suitably protected areas for rest, whilst the open grassland could provide a suitable foraging habitat. There are also numerous brash piles and occurring on site which could also provide suitable refuge shelter, see **Appendix V** Target Notes for specific locations. Their presence within the site is therefore considered highly likely.

6.6 Herpetofauna

Great crested newt (GCN)

- 6.6.1 Important elements to consider when assessing likely impacts against GCN includes:
- The scale, nature and magnitude of proposals,
 - Site proximity to a potential breeding pond and to any additional ponds,
 - Habitat linkage / barriers between potential breeding ponds and the site,
 - Nature and extent of available terrestrial habitat around the pond,
 - Area of site habitat loss,

- Nature of habitat to be lost and potential value to GCN,
- Most up to date Government guidance considering EPS.

- 6.6.2 As derived from the desktop assessment, historic GCN presence within a 2.0km buffer is displayed by a single GCN class survey license return dating back to 2016 where presence was confirmed (1.2 kilometres east) although no EPSMLs occur within the radius.
- 6.6.3 Based on the desktop study, four ponds are present within 250m of the site boundary (See **Figure 5.3** above for location).
- 6.6.4 In a terrestrial contextual assessment, the site provides suitable habitat for GCN in the form of ponds, woodland and shrubbery which provide suitable foraging and refuge habitat. The linear waterbody to the east is likely to provide connectivity to habitats further east of the site.
- 6.6.5 The GCN HSI was applied for the three accessible water bodies within 250m of the application site, P1, P2 and P3. See **Table 6.6.1** for pond description and **Tables 6.6.2 – 6.6.3** for detailed HSI results in line with current guidance. **Figure 6.6.1** showcases relative pond occupancy proportions.

Table 6.6.1 – Pond descriptions within 250m radial buffer, with included HSI scores

Pond 1 (P1)	
Pond 1 is located to the northeast of B1, bordered by ruderal vegetation and scrub, the pond is directly adjacent to a mature treeline to the north; the pond itself is primarily vegetated by yellow iris (<i>Iris pseudacorus</i>). P1 has an estimated area of 200m², likely sometimes dries, is 25% shaded, has no waterfowl impacts, or potential to support fish. The pond is surrounded by moderate terrestrial habitat with an estimated macrophyte cover of 80%. No assessment was made on water quality due to heras fencing preventing this. Based on the above, the HSI value of the pond has been calculated as pertaining to a suitability score of 'Average'. See Table 6.6.2 below for further information on the individual category scorings.	
Pond 2 (P2)	
Pond 2 is located within the fenced off lowland deciduous woodland to the southeast of the site, bordered by young trees and scrub, the pond is heavily vegetated by yellow iris and marsh marigold (<i>Caltha palustris</i>). P1 has an estimated area of 80m², likely dries sometimes, is 50% shaded, has no waterfowl impacts, or potential to support fish. It is surrounded by moderate terrestrial habitat with an estimated macrophyte cover of 90%, the water quality within was deemed moderate. Based on the above, the HSI value of the pond has been calculated as pertaining to a suitability score of 'Excellent'.	

Pond 3 (P3)

Pond 3 is located within a heavily mown grassland to the south of the site, the pond is heavily vegetated by a diverse range of species such as lesser pond sedge (*Carex riparia*) and greater reedmace (*Typha latifolia*). P1 has an estimated area of 280m², likely dries sometimes, is 10% shaded, has no waterfowl impacts and no potential to support fish. The pond is surrounded by moderate terrestrial habitat with an estimated macrophyte cover of 90%, the water quality was deemed moderate.

Based on the above, the HSI value of the pond has been calculated as pertaining to a suitability score of 'Average'.



Table 6.6.2 – HSI quantitative assessment of the pond

Pond Reference	P1	P2	P3
SI1 – Location	1	1	1
SI2 – Pond area	0.5	0.4	0.4
SI3 – Pond drying	0.1	0.5	0.1
SI4 – Water quality	N/A	0.67	0.67
SI4 – Shade	0.4	1	1
SI6 – Fowl	1	1	1
SI7 – Fish	1	1	1
SI8 – Ponds	1	1	1
SI9 – Terr'l habitat	0.67	1	0.67
SI10 – Macrophytes	1	0.9	0.9
HSI	0.65	0.81	0.66

Table 6.6.3 – HSI scoring chart (a suitability scoring method for GCN developed by Mr. L. Brady)

Great Crested Newt (GCN) HSI Scoring					
HSI Score	<0.50	0.50 - 0.59	0.60 - 0.69	0.70 - 0.79	>0.80
Pond Suitability	Poor	Below Average	Average	Good	Excellent

NB: The HSI for great crested newts is a measure of habitat suitability. It is not a substitute for newt surveys. In general, ponds with high HSI scores are more likely to support great crested newts than those with low scores. However, the system is not sufficiently precise to allow the conclusion that any particular pond with a high score will support newts, or that any pond with a low score will not do so. There is a positive correlation between HSI scores and the numbers of great crested newts observed in ponds. So, in general, high HSI scores are likely to be associated with greater numbers of great crested newts. However, the relationship

is not sufficiently strong to allow predictions to be made about the numbers of newts in any particular pond.

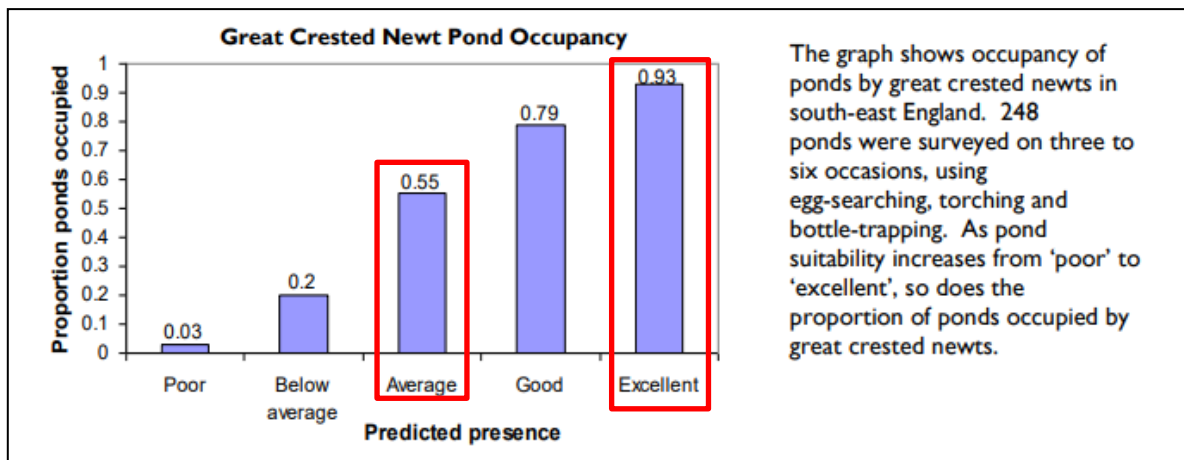


Figure 6.6.1 – GCN pond occupancy © ARC UK

Wider amphibians

- 6.6.6 The terrestrial and aquatic features described previously for GCN, as well as the vegetation brush pile on site, could also support more common, robust amphibians such as common frog and common toad.

Reptiles

- 6.6.7 The site was found to be of moderate value to reptiles. The woodland was found to be heavily shaded with no opportunities for basking although the shrubbery likely offers some degree of suitability through a heterogeneous vegetation structure for refuge and piles of garden waste within the community garden could also provide suitable egg-laying and hibernation areas for reptiles.; however, no suitable basking opportunities were identified. The remaining habitats onsite serve predominantly amenity function, are subject to heavy disturbance and highly fragmented in addition to lacking any notable ecotones or basking areas.

6.7 Invertebrates

- 6.7.1 No specially protected invertebrate assemblages are likely to be present at the application site. Habitats and species on site are commonplace throughout the local and wider environment.

7.0 Conclusions & Recommendations

Designated Sites

- 7.1 The site is positioned within the Impact Risk Zone (IRZ) for a number of designated sites in the wider landscape, with the nearest being The Dee Estuary SSSI at a distance of 6.5km. The exact scope of proposals is unknown, and as such further consultation with Natural England (NE) may be necessary in relation to residential disturbance.

Habitats

- 7.2 A priority habitats is present on site, namely, lowland deciduous woodland, it is therefore recommended that this habitat is retained, where possible.
- 7.3 Where retention is not feasible, then it is recommended that any loss is suitably offset. This will be secured via the implementation of a Biodiversity Net Gain plan. See **Section 8.0** for further details in the form of a Biodiversity Statement.

Vegetation

- 7.4 No priority vegetative species were identified on the site by the surveyor during the diurnal appraisal to warrant any specific intervention measures.
- 7.5 Three INNS, listed under Schedule 9 (Part II) of the Wildlife & Countryside Act (1981) were located within the site, rhododendron, Japanese rose and Wilson's honeysuckle. Given the distribution across the site and the unknown proposals, it is considered that construction works are highly likely to spread these species further.
- 7.6 Whilst it is not illegal to host any species designated as such within a site, it is an offence, under current legislature, to knowingly permit the spread of INNS beyond the confines of your site, either via allowing it to grow unchecked or through the irresponsible removal and dumping of waste / plant matter.
- 7.7 To prevent further spread of these species from within the site, it is recommended that all invasive species are eradicated from the site prior to development. A Method Statement should be collated by a suitably qualified ecologist or invasive species specialist outlining how these species will be removed pre-works, including details regarding site biosecurity protocols.
- 7.8 Whilst an attempt has been made to determine the extent of any invasive species on site, the extent of the INNS should be mapped through a dedicated Invasive Species check, undertaken by a suitably qualified ecologist, botanist or invasive species contractor, at an appropriate time of year.
- 7.9 Any landscaping or planting carried out during the works should consider local soil types and habitats, and as such should prioritise native species which will better tolerate the soil type present on site and provision for faunal species present in the immediacy.

Bats

- 7.10 Based upon the findings of the desktop and field survey, covered through sections 5.0 – 6.0 of the report and supported by **Appendix I**, the structure B1 is determined to pertain to '**Negligible**' bat roost suitability and B2 is determined to hold a suitability of '**None**' in accordance with Bat Conservation Trust (See **Figure 7.1**) – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023).

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.		
Potential suitability	Description	
	Roosting habitats in structures	Potential flight-paths and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible*	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.

Figure 7.1 – BCT extract on 'None' suitability criteria

- 7.11 No further surveys in the form of dusk/dawn emergence / re-entry surveys are recommended on the structures with the site boundary at Court Hey Park. However, for B1, due to the aforementioned timber cladding on the western aspect it is recommended purely as a precautionary measure that these features are removed under supervision by a suitably licensed ecologist, or Ecological Clerk of Works (ECoW). This area will be subject to inspection using a torch and/ or endoscope prior to the commencement of work, to inspect for the unlikely presence of bats or bat droppings, if absent the works should proceed to completion. However, if bat(s) is/are located, work will cease, the area made good and subsequent dusk observations will need to be completed. A granted European Protected Species Mitigation License (EPSML) would further be required to legally proceed with the scheme.
- 7.12 All trees within the red line boundary have been categorised as pertaining to a bat roost suitability of 'FAR' (See **Figure 7.2**) in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023).
- 7.13 If any of these trees are to be subject to disturbance, pruning or felling during the proposed works, a further inspection will have to be conducted on the target tree by a suitably licensed (holder or accredited agent on a Class 2 bat license from Natural England) Ecologist to determine the nature of any PRFs and whether any evidence of bats exists.

FAR	Further assessment required to establish if PRFs are present in the tree
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Figure 7.2 – BCT extract on 'FAR' suitability criteria

- 7.14 Installation of overly harsh artificial lighting as part of any development that exceeds current levels may have a negative impact upon foraging / commuting bats in the landscape, subject to their presence, particularly if increased light spillage occurs in areas of that are currently free from illumination, particularly including woodland and hedgerows. A bat-sensitive lighting plan is therefore recommended in order to avoid potential impacts to bats that may use the surrounding woodland. This could be contained as a part of the lighting plan recommended previous. Several options to consider have been listed below, though the reader is referred to the Bat Conservation Trust's 'Bats and Artificial Lighting at Night' guidelines (August 2023) for further information.

Appropriate luminaire specifications: Light sources, lamps, LEDs and their fittings come in a myriad of different specifications which a lighting professional can help to select. However, the following should be considered when choosing luminaires and their potential impact on Key Habitats and features:

- All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component.
- Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed (as opposed to using a pendant fitting) where installed in proximity to windows to reduce glare and light spill.
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges.
- Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards.
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01.
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt.
- Where appropriate, external security lighting should be set on motion-sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate.
- Use of a Central Management System (CMS) with additional web-enabled devices to light on demand.
- Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS.
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely.

Birds

- 7.15 No impacts are applicable in relation to any Sch.1 (WCA) specially protected raptor species such barn owl, and no further surveys or recommendations are necessary in relation to specially protected birds.
- 7.16 Regarding wider breeding bird species, a pair of great tits were observed breeding in the birdbox on the southwestern elevation of B1. All the structures on site, the shrubbery, trees and hedgerows are considered to offer suitable nesting platforms for birds during the breeding bird season of March – August, inclusive.

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

- 7.17 Any works impacting upon these areas of potential suitability (i.e. the buildings as well as any taller vegetation) should therefore be carried out outside of the breeding bird season, typically March – September inclusive. For works within the breeding bird season, any areas that can support nesting birds should be checked by a professional Ecologist for nesting birds within 48 hours or less prior to works commencing.

Point 3.24 of the British Standards Publication 42020:2013 defines a professional ecologist as: *“a person who has, through relevant education, training or experience, gained recognised qualifications and expertise in the field of ecology and environmental management.”*

- 7.18 Where / if active nests are / have been located by the Ecologist, then any works which may affect them would have to be delayed until the young have fledged and the nest has been abandoned naturally, this can be aided, for example, via implementation of appropriate buffer zone(s) around the nest site (typically 5 – 10 metres) in which no disturbance is permitted until the nest is no longer in use. This would have to be coordinated through the expert judgement of the professional ecologist and species pending.

Other terrestrial mammals

Badger & hedgehog

- 7.19 Whilst no direct evidence of badger or hedgehog was identified on site, their presence on site is considered possible.
- 7.20 It is therefore recommended that Reasonable Avoidance Measures (RAMs) are enacted at the site to avoid any impacts to either of these species. RAMs to minimise construction impacts and prevent harm or injury to badgers and hedgehog should include, as a minimum:
- All working hours should be limited to daylight (dawn – sunset, or dawn – 6pm in winter) to avoid disturbing any badger or hedgehog in vicinity of the development area.
 - A pre-commencement check of the site, any stored materials and the immediate vicinity of development footprint will be carried out prior to any works each morning in order to check for the presence of badger or hedgehog.
 - Materials that may cause entrapment such as plastic / metal fencing, as well as those which could be potentially harmful to terrestrial mammals such as chemicals, should not be left around the site following the cessation of daytime work.
 - No bulky equipment / general construction aggregates should be left around the development area, instead leave them on bare ground away from the risk zone.
 - Stock piling of spoil material MUST be left un-compacted and not allowed to grass over, as if grassed over and compacted, terrestrial mammals may be encouraged to excavate new areas for refuge.
 - Fires must not be used as a means of the disposing of waste materials.
 - Any trenches or excavations must either be covered at the end of each working day, or a low angle (no more than 45°) sloping board of approximately 300mm width should be provisioned within any uncovered excavations to provide a means of escape for any terrestrial mammals.
 - Any temporarily exposed open pipe system MUST be capped in such a way as to prevent badgers gaining access, as may happen when contractors are off site.
 - In the event an underground void / potential sett entrance is exposed during the works, work must cease immediately; and an Ecologist must be contacted to determine if the opening forms part of a previously undiscovered tunnel network of a badger sett. If this cannot be ruled out, works will cease, and Natural England consulted for further advice.

Herpetofauna

Great crested newt (GCN)

- 7.21 Regarding great crested newts (GCN), due to the lack of significant GCN records within the landscape (restricted to a single class licence return), despite the perceived onsite habitat suitability restricted by fragmentation from surrounding settlements, risk to GCN within the context of the proposed development is considered to be low.
- 7.22 This stance is formed partly based on prior evidence provided in External Appendix '*Millennium Centre - Environmental DNA (eDNA) Survey Results for Great Crested Newt (GCN), July 2022 – Tyrer Ecological Consultants*', which identified a number of ponds within the landscape and undertook GCN eDNA surveys on Pond 1 (P1) in 2022. The results returned a 'Negative' result implying that GCN are unlikely to occupy this pond at the time of the survey, this in turn increases the likelihood of the species' absence in P2 and P3 due to full connectivity between the three ponds. Furthermore, the only identified record of GCN within the area is the single GCN Class Survey Licence Return located 1.2 km to the southeast from 2016, this is beyond significant barriers to dispersal associated with built residential housing and road networks, indicating restricted connectivity between the proposed work site and this established GCN population. However, a pond subject to HSI within the site boundary scored 'Excellent', additionally, onsite habitat is considered to offer moderate to good terrestrial habitat which expands beyond the red line boundary and likely provides opportunities for foraging, commuting and refugia.
- 7.23 Therefore, despite the fragmentation within the landscape, the suitability of terrestrial and aquatic habitat on site dictates a potential risk to GCN within the context of the site, especially given the site is proposed to be cleared which in turn may result in the loss of ponds and suitable habitat within the core zone. Additionally, the time between the eDNA survey in 2022 and the proposed clearance of the site may have resulted in functional changes to the habitual layout and suitability of the site that may impact the sites capacity in supporting newts. Therefore, as a precautionary measure and to inform an appropriate impact assessment of the species it is recommended that an Environmental DNA (eDNA) survey should be undertaken at all ponds within functional connectivity to the site, where access allows. The application should show reasonable due diligence to gain access to the ponds.
- 7.24 Any eDNA approach would need to be carried out from **mid-April to June 30th** when local planning authorities will accept data as part of a planning application. The information gathered will help provide an initial impact assessment. Following the eDNA survey, depending on the results, a development licence may or may not be required; further surveys to reinforce the licence may also be required.
- 7.25 Where GCN would be impacted, a development licence (options include Traditional development mitigation licence, low impact class licence and district level licencing) informed by survey data and a mitigation strategy may be required to legally proceed with the works. In some cases, a licence may not be necessary where risks can be avoided, minimised, or mitigated for through reasonable avoidance measures (RAMs), if the consultant Ecologist, on the basis of survey information and specialist knowledge of the species concerned, considers that on balance the proposed activity is reasonably unlikely to result in an offence being committed.

Wider amphibians

- 7.26 With the presence of waterbodies adjacent to the site, the wider functional pond network in the surrounding environment and the suitable terrestrial habitat on site, the presence of common amphibians is considered highly likely; to prevent impacting upon local populations

of common frog and common toad it is recommended that such species are included within the RAMs above.

- 7.27 Should any frogs or toads be encountered within the works area, they should be handled with wet gloves to prevent impact / injury and moved to an area of like for like habitat outside of the works area away from potential harm. The applicant and all contractors should be aware that if at any stage newts are encountered during works, or at any other stage of the programme of works, such works would be required to immediately cease and the Ecologist / ECoW would be made aware as to provide further guidance, if an Ecologist is not already present.

Reptiles

- 7.28 As discussed previous, the site does provide some suitable features for reptiles, with shrubbery and woodland, in addition to ponds within the site boundary. Their presence is considered possible, though highly unlikely, and as such, as a precautionary measure, it is recommended that reptiles are included in the RAMs mentioned above.

Invertebrates

- 7.29 The site is unlikely to host to be of even local significance for this species group and no specific mitigation measures apply. Enhancement options which could improve favourability of the site for this taxon have been presented in **Appendix IV**.

8.0 Biodiversity Statement

- 8.1 Based on the information gathered during the diurnal assessment, Court Hey Park is **not exempt** from the Biodiversity Gain Planning Condition.
- 8.2 **No significant habitat degradation has taken place** since the relevant date, despite some small areas of introduced shrubbery having been cleared this is considered regular maintenance rather than deliberate habitat degradation.
- 8.3 The site is host to the following biodiversity value:
- Habitat: **5.67**
 - Hedgerow: **0.00**
 - Watercourse: **0.00**
- 8.4 This Section should be read in conjunction with the hard copy of the Statutory Biodiversity Metric tool – see external Appendix.

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Appendix I: Site Photographs



Plate 1 – B1, northwestern elevation



Plate 2 – B1, northeastern aspect



Plate 3 – B2, northern aspect



Plate 4 – Logpile at south of B1; location on Appendix V



Plate 5 – Green roofed container and surrounding nature of the northwest of B1



Plate 6 – *Nature of woodland at Court Hey Park*



Plate 7 – Nature of treeline adjacent to P1



Plate 8 – Nature of land adjacent to P1 and B1



Plate 9 – *Mown grassland adjacent to P3*



Plate 10 – *Community garden to northwest*



Plate 11 – *Additional photo of the community garden*



Plate 12 – *Bird box on B1 which was in use at time of survey by two great tits*

Appendix II: Condition Assessment Sheets

Condition Assessment Score – Woodland

Condition Assessment Criteria						
Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	w1f	w1g
A	Age distribution of trees	Three age classes present	Two age classes present	One age class present	2	1
B	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland	Evidence of significant browsing pressure is present in 40% or less of whole woodland	Evidence of significant browsing pressure is present in 40% or more of whole woodland	3	3
C	Invasive plant species	No invasive species present in woodland	Rhododendron or laurel not present, other invasive species < 10% cover	Rhododendron or laurel present, or other invasive species > 10% cover	2	3
D	Number of native tree species	Five or more native tree or shrub species found across woodland parcel	Three to four native tree or shrub species found across woodland parcel	None to two native tree or shrub species across woodland parcel	3	2
E	Cover of native tree and shrub species	> 80% of canopy trees and >80% of understory shrubs are native	50-80% of canopy trees and 50-80% of understory shrubs are native	< 50% of canopy trees and <50% of understory shrubs are native	3	2
F	Open space within woodland	10 – 20% of woodland has areas of temporary open space, unless woodland is <10ha in which case lower threshold of 10% does not apply	21- 40% of woodland has areas of temporary open space	More than 40% of woodland has areas of temporary open space	3	2
G	Woodland regeneration	All three classes present in woodland; trees 4-7cm dbh, saplings and seedlings or advanced coppice regrowth	One or two classes only present in woodland	No classes or coppice regrowth present in woodland	2	1
H	Tree health	Tree mortality less than 10%, no pests or diseases and no crown dieback	11% to 25% mortality and/or crown dieback or low risk pest or disease present	Greater than 25% tree mortality and or any high-risk pest or disease present	2	2
I	Vegetation and ground flora	Ancient woodland flora indicators present	Recognisable NVC plant community present	No recognisable NVC community	1	1
J	Woodland vertical structure	Three or more storeys across all survey plots or a complex woodland	Two storeys across all survey plots	One or less storey across all survey plots	2	1
K	Veteran trees	Two or more veteran trees per hectare	One veteran tree per hectare	No veteran trees present in woodland	3*	3*

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L	Amount of deadwood	50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Between 25% and 50% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	Less than 25% of all survey plots within the woodland parcel have standing deadwood, large dead branches/ stems and stumps	3	3*
M	Woodland disturbance	No nutrient enrichment or damaged ground evident	Less than 1 hectare in total of nutrient enrichment across woodland area and/or less than 20% of woodland area has damaged ground	More than 1 hectare of nutrient enrichment and/or more than 20% of woodland area has damaged ground	1	3
Total Score					30	27
Condition Assessment Result			Condition Assessment Score			
Total score >32 (33 to 39)			Good			
Total score 26 to 32			Moderate			Y Y
Total score <26 (13 to 25)			Poor			

**Owing to lack of thorough access to woodland compartments, criteria marked with an asterisk [“*”] has precautionarily been assigned the highest value to not undersell the value of the woodlands.*

Sparsely Vegetated Land – Condition Assessment Results

Condition Assessment Criteria		Criterion passed (Yes or No)
A	The parcel represents a good example of its specific sparsely vegetated habitat type - the appearance and composition of the vegetation closely matches its UKHab description, with characteristic indicator species consistently present. ¹	N
B	The cover of bracken <i>Pteridium aquilinum</i> , scrub and trees is less than 25%.	Y
C	There is an absence of invasive non-native plant species ² (as listed on Schedule 9 of WCA ³) and species indicative of suboptimal condition ⁴ make up less than 5% of vegetated ground cover.	Y
D	Vegetation cover of vascular and non-vascular plants is between 5 and 50%.	Y
Number of criteria passed		
Condition Assessment Result (out of 4 criteria)	Condition Assessment Score	Score Achieved x/√
Passes 4 criteria	Good (3)	
Passes 3 criteria	Moderate (2)	Y
Passes 2 or fewer criteria	Poor (1)	

Mixed scrub – Condition Assessment Results

Condition Assessment Criteria		
A	The parcel represents a good example of its habitat type - the appearance and composition of the vegetation closely matches its UKHab description (where in its natural range). - At least 80% of scrub is native, - There are at least three native woody species, - No single species comprises more than 75% of the cover (except hazel <i>Corylus avellana</i> , common juniper <i>Juniperus communis</i> , sea buckthorn <i>Hippophae rhamnoides</i> or box <i>Buxus sempervirens</i> , which can be up to 100% cover).	Y
B	Seedlings, saplings, young shrubs and mature (or ancient or veteran) shrubs are all present.	N
C	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA) and species indicative of suboptimal condition make up less than 5% of ground cover.	Y
D	The scrub has a well-developed edge with scattered scrub and tall grassland and or forbs present between the scrub and adjacent habitat.	N
E	There are clearings, glades or rides present within the scrub, providing sheltered edges.	N
Total Score		5
Condition Assessment Result		Condition Assessment Score
Passes 5 criteria		Good
Passes 3 or 4 criteria		Moderate
Passes 2 or fewer criteria		Poor

Reedbeds – Condition Assessment Results

Condition Assessment Criteria		Criterion passed (Yes or No)
Core Criteria - must be assessed for all wetland habitat types :		
A	The water table is at, or near the surface throughout the year - this could be open water or saturation of soil at the surface. There is no artificial drainage, unless specifically to maintain water levels as specified above. Note - this criterion is essential for achieving Good condition.	Y
B	The parcel represents a good example of its specific habitat type - the appearance and composition of the vegetation closely matches its UKHab description, with vascular and non-vascular characteristic indicator species consistently present. ¹	N
C	The water supplies (groundwater, surface water and or rainwater) to the wetland are of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Y
D	Cover of scrub and scattered trees are less than 10%.	N
E	Cover of bare ground is less than 5%.	Y
F	There is an absence of invasive non-native plant species ² (as listed on Schedule 9 of WCA ³) and species indicative of suboptimal condition ⁴ make up less than 5% of ground cover.	Y
Essential criterion achieved (required for Good condition) Yes or No:		
Number of criteria passed		
Condition Assessment Result	Condition Assessment Score	Score Achieved x/√
Results for habitats requiring assessment of 6 criteria (Depression on peat substrates (H7150) and Oceanic valley mire [1] (D2.1)):		
• Passes 5 or 6 core criteria, including criterion A.	Good (3)	
• Passes 3 or 4 core criteria; OR • Passes 5 core criteria but fails criterion A.	Moderate (2)	Y
• Passes 2 or fewer core criteria.	Poor (1)	

Ponds – Condition Assessment Results

Condition Assessment Criteria		Criterion passed (Yes or No)	
Core Criteria - applicable to all ponds (woodland ¹ and non-woodland):		P1	P2
A	The pond is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution. Turbidity is acceptable if the pond is grazed by livestock.	N	N
B	There is semi-natural habitat (moderate distinctiveness or above) completely surrounding the pond, for at least 10 m from the pond edge for its entire perimeter.	N	N
C	Less than 10% of the water surface is covered with duckweed <i>Lemna</i> spp. or filamentous algae.	Y	Y
D	The pond is not artificially connected to other waterbodies, such as agricultural ditches or artificial pipework.	Y	Y
E	Pond water levels can fluctuate naturally throughout the year. No obvious artificial dams ² , pumps or pipework.	Y	Y
F	There is an absence of listed non-native plant and animal species ³ .	Y	Y
G	The pond is not artificially stocked with fish. If the pond naturally contains fish, it is a native fish assemblage at low densities.	Y	Y
Additional Criteria - must be assessed for all non-woodland ponds:			
H	Emergent, submerged or floating plants (excluding duckweed) ⁴ cover at least 50% of the pond area which is less than 3 m deep.	Y	Y
I	The pond surface is no more than 50% shaded by adjacent trees and scrub.	N	Y
Number of criteria passed		6	7
Condition Assessment Result	Condition Assessment Score	Score Achieved x/√	
Results for woodland ponds which require assessment of 7 core criteria			
Passes 7 criteria	Good (3)		
Passes 5 or 6 criteria	Moderate (2)		
Passes 4 or fewer criteria	Poor (1)		
Results for non-woodland ponds which require assessment of 9 criteria			
Passes 9 criteria	Good (3)		
Passes 6 to 8 criteria	Moderate (2)	Y	Y
Passes 5 or less	Poor (1)		

Appendix III: Botanical Species List

Species nomenclature follows Stace, C (2019) – definitive English names; scientific names for given flora are presented below.

Any invasive non-native species are denoted by the acronym (INNS).

Taxon	Common Name	Scientific Name
Anthophyta	Alder	<i>Alnus glutinosa</i>
	Alexanders	<i>Smyrniolus olusatrum</i>
	Annual meadow grass	<i>Poa annua</i>
	Ash	<i>Fraxinus excelsior</i>
	Barren brome	<i>Bromus sterilis</i>
	Beech	<i>Fagus sylvatica</i>
	Bittercress sp.	<i>Cardamine sp.</i>
	Black medic	<i>Medicago lupulina</i>
	Bramble	<i>Rubus fruticosus</i> agg.
	Broad-leaved dock	<i>Rumex obtusifolius</i>
	Broad-leaved willowherb	<i>Epilobium montanum</i>
	Buddleia	<i>Buddleja davidii</i>
	Cat's-ear	<i>Hypochaeris radicata</i>
	Cherry laurel	<i>Prunus laurocerasus</i>
	Cleavers	<i>Galium aparine</i>
	Cock's-foot	<i>Dactylis glomerata</i>
	Common chickweed	<i>Stellaria media</i>
	Common ivy	<i>Hedera helix</i>
	Common knapweed	<i>Centaurea nigra</i>
	Common nettle	<i>Urtica dioica</i>
	Common sorrel	<i>Rumex acetosa</i>
	Common vetch	<i>Vicia sativa</i>
	Cowslip	<i>Primula veris</i>
	Creeping buttercup	<i>Ranunculus repens</i>
	Creeping cinquefoil	<i>Potentilla reptans</i>
	Creeping thistle	<i>Cirsium arvense</i>
	Cuckooflower	<i>Cardamine pratensis</i>
	Curled dock	<i>Rumex crispus</i>
	Cut leaved cranesbill	<i>Geranium dissectum</i>
	Daisy	<i>Bellis perennis</i>
	Dandelion	<i>Taraxacum</i>
	Downy birch	<i>Betula pubescens</i>
	Elder	<i>Sambucus nigra</i>
	False Oat-grass	<i>Arrhenatherum elatius</i>
	Fox and cubs	<i>Pilosella aurantiaca</i>
	Foxglove	<i>Digitalis purpurea</i>
	Garden heliotrope	<i>Heliotropium arborescens</i>
	Garden privet	<i>Ligustrum ovalifolium</i>

Garlic mustard	<i>Alliaria petiolata</i>
Geranium sp.	<i>Pelargonium sp.</i>
Greater birds-foot trefoil	<i>Lotus corniculatus</i>
Greater celandine	<i>Chelidonium majus</i>
Greater plantain	<i>Plantago major</i>
Greater pond sedge	<i>Carex riparia</i>
Green alkanet	<i>Pentaglottis sempervirens</i>
Ground elder	<i>Aegopodium podagraria</i>
Gypsywort	<i>Lycopus europaeus</i>
Hard rush	<i>Juncus inflexus</i>
Hawthorn	<i>Crataegus monogyna</i>
Hedge bedstraw	<i>Galium mollugo</i>
Hedge bindweed	<i>Calystegia sepium</i>
Hedge mustard	<i>Sisymbrium officinale</i>
Hemlock water dropwort	<i>Oenanthe crocata</i>
Herb-Robert	<i>Geranium robertianum</i>
Hogweed	<i>Heracleum sphondylium</i>
Holly	<i>Ilex aquifolium</i>
Horse chestnut	<i>Aesculus hippocastanum</i>
Ivy-leaved speedwell	<i>Veronica hederifolia</i>
Ivy-leaved toadflax	<i>Cymbalaria muralis</i>
Japanese laurel INNS	<i>Aucuba japonica</i>
Lady's mantle	<i>Alchemilla vulgaris</i>
Lady's-mantle	<i>Alchemilla mollis</i>
Marsh marigold	<i>Caltha palustris</i>
Meadow buttercup	<i>Ranunculus acris</i>
Meadow cranesbill	<i>Geranium pratense</i>
Meadow foxtail	<i>Alopecurus pratensis</i>
Meadow sweet	<i>Filipendula ulmaria</i>
Meadow vetchling	<i>Lathyrus pratensis</i>
Melilot	<i>Melilotus altissimus</i>
Musk mallow	<i>Malva moschata</i>
Norway maple	<i>Acer platanooides</i>
Oak sp.	<i>Quercus sp.</i>
Oat	<i>Avena sativa</i>
Oregano	<i>Origanum vulgare</i>
Ox-eye daisy	<i>Leucanthemum vulgare</i>
Pendulous sedge	<i>Carex pendula</i>
Perforate St. John's-wort	<i>Hypericum perforatum</i>
Persian ivy	<i>Hedera colchica</i>
Poplar	<i>Populus agg.</i>
Procumbent pearlwort	<i>Sagina procumbens</i>
Quaking grass	<i>Briza media</i>
Ragwort	<i>Senecio jacobaea</i>
Red campion	<i>Silene dioica</i>
Red clover	<i>Trifolium pratense</i>

	Red fescue	<i>Festuca rubra</i> agg.
	Rhododendron INNS	<i>Rhododendron ponticum</i>
	Ribwort plantain	<i>Plantago lanceolata</i>
	Rose sp.	<i>Rosa</i> sp.
	Rosebay willowherb	<i>Chamaenerion angustifolium</i>
	Rugosa rose	<i>Rosa rugosa</i>
	Salad burnet	<i>Rosa rugosa</i>
	Silver birch	<i>Betula pendula</i>
	Smooth meadow-grass	<i>Poa pratensis</i>
	Snowberry	<i>Symphoricarpos albus</i>
	Soft brome	<i>Bromus hordeaceus</i>
	Spear thistle	<i>Cirsium vulgare</i>
	Stinging nettle	<i>Urtica dioica</i>
	Sweet vernal	<i>Anthoxanthum odoratum</i>
	Sycamore	<i>Acer pseudoplatanus</i>
	Teasel	<i>Dipsacus fullonum</i>
	Thale cress	<i>Arabidopsis thaliana</i>
	Tutsan	<i>Hypericum androsaemum</i>
	Wall speedwell	<i>Veronica arvensis</i>
	Water avens	<i>Geum rivale</i>
	Water dock	<i>Rumex hydrolapathum</i>
	Water figwort	<i>Scrophularia auriculata</i>
	White clover	<i>Trifolium repens</i>
	Wild cherry	<i>Prunus avium</i>
	Willow sp	<i>Salix</i> sp.
	Willowherb sp.	<i>Epilobium</i> sp.
	Wilsons honeysuckle	<i>Lonicera nitida</i>
	Wood avens	<i>Geum urbanum</i>
	Yarrow	<i>Achillea millefolium</i>
	Yellow iris	<i>Iris pseudacorus</i>
	Yellow rattle	<i>Rhinanthus minor</i>
	Yorkshire-fog	<i>Holcus lanatus</i>
Pinophyta	Cypress sp.	<i>Cupressus</i>
	Pine sp.	<i>Pinus</i>
	Yew	<i>Taxus baccata</i>
Polypodiopsida	Bracken	<i>Pteridium aquilinum</i>
	Dryopteris sp.	<i>Dryopteris</i> sp.
	Field Horsetail	<i>Equisetum arvense</i>
	Polypody	<i>Polypodium vulgare</i>

Appendix IV: Biodiversity Enhancement: General Recommendations

Breeding Birds – Other

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.



Hedgehog Home

Exterior quality 12mm resin bonded ply. The box remains untreated on the inside. Best situated in a quiet corner of the garden, and covered with leaves and other garden debris. Removable lid for cleaning purposes and reinforced corners, manufactured with surface sunk nails to resist rusting.

Nest box size: Height 22cm x Width 38cms x Length 47cm



Environmentally positive: Direct action to help hedgehog survival rates, encouraging biodiversity; FSC timber; Zero carbon footprint in use.

Amphibians – Hibernacula

Hibernacula are underground chambers that amphibians and reptiles use throughout the winter to protect themselves from the cold. Creating a hibernaculum will provide a safe space for amphibians and reptiles to hibernate over winter, as well as a spot for solitary bees to soak up the sun and for birds to relax. These habitats can be integrated into a wide variety newly created or enhanced habitats and attract herps to new areas.

You will need:

- A spade
- Logs and branches
- Rocks and bricks
- 2-3 drainpipe cut-offs or cement pipes (if using plastic drainpipes, roughen the insides with sandpaper, so that they are not too slippery for animals to climb)
- Turf or meadow flower seeds (optional)

How to make your hibernaculum yourself:

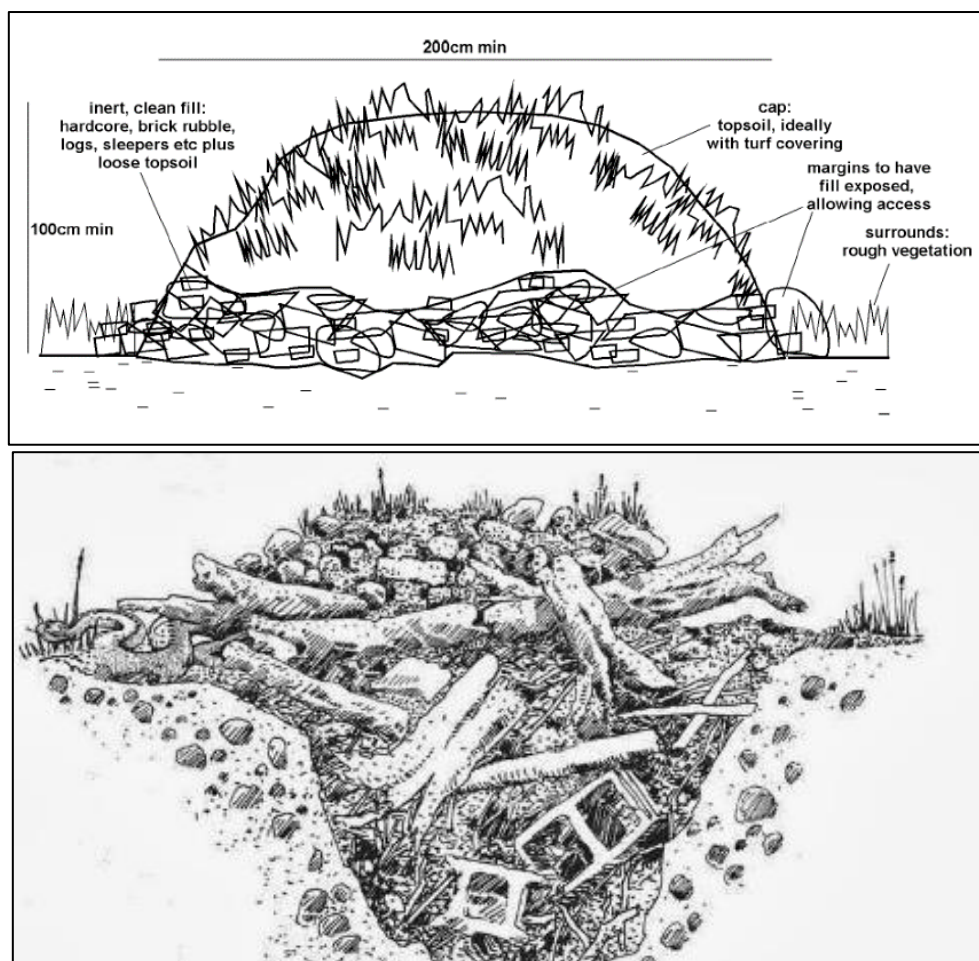
- In a sunny spot, dig a hole about 50cm deep and 1.5 metres across.
- Fill with logs, branches, bricks and rocks, leaving plenty of gaps in between.
- Insert entrance tubes (drainpipes) at ground level into the hole.
- Cover the pile with soil (to about 50cm high).
- Plant meadow seeds or long grasses over the mound to create a feast for summer pollinators.

To construct a hibernaculum to Natural England standard:

- In desired areas, remove the turf from the footprint of the hibernaculum and set aside.

- On well-drained soil excavate to a depth of approximately 500 mm and set aside spoil (this is unnecessary on poorly drained soils).
- Fill the footprint or pit with core material. Materials likely to retain moisture are preferable, such as cut timber, brash and grubbed up tree roots. Other material such as inert hardcore, bricks, rocks, and building rubble may also be used. Materials that will decompose should not be placed beneath heavy components such as bricks or rocks, to reduce the risk of collapse.
- Pack the larger spaces within the core materials with wood chippings, loose topsoil or spoil.
- Cover the hibernaculum with the turves removed from the footprint.
- Take care not to create structures that might attract rodents, such as piles of rubble with many entrance holes. There has been no rigorous investigation of the optimum size of hibernacula, but larger hibernacula are probably more useful than small constructions because they contain a variety of different microhabitats and are more likely to maintain stable conditions.
- A suggested minimum size is 4.0 m long by 2.0 m wide by 1.0 m deep. 2.0 x 2.0 x 1.0 metres (length x width x height) as a minimum.

Illustrative aid for hibernaculum:



Invertebrates – Insect Hotels

Insect hotels provide a habitat for a variety of insects. Designs can be small or large enough to create a focal point in a wildlife garden and sturdy enough to last for years. Ensure hotels are made from untreated wood, which is important as insects need natural materials to thrive, and split into sections that each contain a different nesting material. There should be pine cones for ladybirds, wood slits for butterflies and moths, bamboo canes for solitary bees, and loose pieces of wood for beetles. Placement: Size against walls or fences and fix to prevent toppling. The feet keep the main body off the damp ground. You could push bricks



against them to keep the bug hotel upright, which would also encourage woodlice and even frogs that enjoy cool stone conditions.

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.



Each Bee Brick contains cavities in which solitary bees can lay their eggs before sealing the entrance with mud and chewed-up vegetation. The offspring will emerge the following spring and the cycle will begin again. Each cavity goes part way into the brick, which is solid at the back. Bee Bricks should be placed in a warm sunny spot on a south-facing wall at a minimum height of 1m, with no vegetation obstructing the holes. It is highly recommended that bee-friendly plants should be located nearby so that the bees using the bricks have food, otherwise it is unlikely that the brick will be used. Available in a choice of four colours: white grey, dark grey, yellow and red.

Specification

- * Material: Concrete
- * Dimensions: W 215mm x D 105mm x H 65mm
- * Weight: 2.9kg
- * Colours: White grey, yellow, dark grey and red

Native Planting and/or Landscaping

The below species have been assessed against the local soil and habitat types and are deemed suitable for the site. All plant material should comply with the minimum requirements in BS 3936-1: 1992 Specification for trees and shrubs and BS 3936-4: 2007 Specification for forest trees and BS 8545: 2014 Trees from Nursery to Independence in the Landscape. Any plant material, which in the opinion of the appointed Landscape Architect, does not meet the requirements of the Specification, or is unsuitable, or defective in any other way, will be rejected. The minimum specified sizes in the plant schedule will be strictly enforced. The contractor should replace all plants rejected at own cost. New hedgerows should be primarily comprised of blackthorn, hawthorn, hazel, and holly, whilst climbers/creepers such as hops and honeysuckle can be planted at the base of boundary features such as fences and walls, and new tree planting should include species such as pedunculate oak, wild cherry, and alder buckthorn.

	Common Name	Scientific Name	Planting Preference
Ferns	Male Fern	<i>Dryopteris filix-mas</i>	Semi-shade or shaded
	Soft Shield-fern	<i>Polystichum setiferum</i>	Semi-shade or shaded
	Maidenhair Fern	<i>Adiantum capillus-veneris</i>	Suitable for rockeries / walled gardens
	Royal Fern	<i>Osmunda regalis</i>	Full sun in moist-damp areas
Herbaceous plants	Bloody Crane's-bill	<i>Geranium sanguineum</i>	Dry soils - suitable for rockeries
	Columbine	<i>Aquilegia vulgaris</i>	Semi-shade or open areas
	English Bluebell	<i>Hyacinthoides non-scripta</i>	Moist soils in semi-shade or open areas
	Giant Bellflower	<i>Campanula latifolia</i>	Semi-shade or open areas
	Greater Knapweed	<i>Centaurea scabiosa</i>	Dry-moist soils. Suitable for borders
	Greater Woodrush	<i>Luzula sylvatica</i>	Moist soils in semi-shade or open areas
	Meadow Crane's-bill	<i>Geranium pratense</i>	Humid-moist soils. Suitable for borders
	Musk Mallow	<i>Malva moschata</i>	Dry-moist soils. Suitable for borders and rockeries
	Sea Campion	<i>Silene uniflora</i>	Dry soils - suitable for rockeries
	Stinking Hellebore	<i>Helleborus foetidus</i>	Semi-shade or open areas
Climbers	Honeysuckle	<i>Lonicera periclymenum</i>	Dry-moist soils
	Hops	<i>Humulus lupulus</i>	Dry-moist soils
	Ivy	<i>Hedera helix</i>	Dry-moist soils
	Sweet-briar	<i>Rosa rubiginosa</i>	Dry-moist soils
Woody Shrubs	Dogwood	<i>Cornus sanguinea</i>	-
	Guelder Rose	<i>Viburnum opulus</i>	-
	Hawthorn	<i>Crataegus monogyna</i>	-
	Hazel	<i>Corylus avellana</i>	-
	Holly	<i>Ilex aquifolium</i>	-
Trees	Alder Buckthorn	<i>Frangula alnus</i>	-
	Osier	<i>Salix viminalis</i>	-
	Pedunculate Oak	<i>Quercus robur</i>	-
	Purple Willow	<i>Salix purpurea</i>	-
	Rowan	<i>Sorbus aucuparia</i>	-
	Silver Birch	<i>Betula pendula</i>	-
	Wild Cherry	<i>Prunus avium</i>	-
	Wych Elm	<i>Ulmus glabra</i>	-



UKHabs Map Legend

- f2d - Aquatic marginal vegetation
- h3h 33 - Mixed scrub
- r1g 40 - Other standing water; Pond
- u1b - Developed land. sealed surface
- u1b5 - Buildings
- u1f 16 81 - Sparsely vegetated urban land
- w1f 32 - Lowland mixed deciduous woodland
- w1h 31 - Other woodland mixed

Boundary

Target Notes

Target Notes:

- 1 - Japanese Rose
- 2 - Bund colonised by ruderals
- 3 - Storage building with green roof
- 4 - Rhododendron
- 5 - Deadwood pile

Secondary Habitat Codes:

- 16 - Tall forbs
- 31 - Secondary woodland
- 32 - Semi-natural woodland
- 33 - Scattered trees
- 40 - Ponds (priority habitat)
- 81 - Ruderal or ephemeral

**Millennium Centre
Court Hey Park**

Survey Date: 15/05/2024 & 28/05/2024
Drawn: Miss. K. Judson
Date Drawn: 01/07/2023
Checked & Approved: Mrs. K. Wilding
Size: A3
Scale: 1:1000

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