



Bringing Together Over 30 Years of
Ecological Excellence

Tyrer Ecological Consultants Ltd, Roselands, Suite 1, 3, Cross Green, Formby, L37 4BH

Preliminary Ecological Appraisal

January 2025

Project Reference: PR-0391-24

Land off Leigh Lane

Bury

BL8 1RL

National Grid Reference: SD78161119



Land off Leigh Lane, Bury, BL8 1RL
Preliminary Ecological Appraisal

Document Title	Preliminary Ecological Appraisal
Project Reference	PR-0391-24
Issue Number	1.0
Prepared for	3D Eco
Prepared by	Tyrer Ecological Consultants Ltd

Surveyors	Mr. H. Mulligan Qualifying CIEEM
Author	Mr. H. Mulligan Qualifying CIEEM
Survey Date	18/11/2024
Reviewed by	Mr. J. Pescod Qualifying CIEEM
Review Date	08/01/2025
Approved by	Mrs. K. Wilding CEnv MIEMA ACIEEM
Date of Issue	08/01/2025

Terms of use:

This report has been prepared by Tyrer Ecological Consultants Ltd with all reasonable skill, care and diligence within the terms of the instruction and permissions granted by the client. The results, conclusions and recommendations of this report are proportionate and in line with the British Standard 42020:2013.

Tyrer Ecological Consultants Ltd have produced this report with all due integrity and adhere to the CIEEM Professional Code of Conduct, with the aim of upholding these objectives and the reputation of the profession.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

This report is confidential to the client.

This report and contents therein are to be used only in conjunction with the Planning Application for which the report has been produced. It must not be used for any other purpose, copied, re-produced or sent to any other party other than the Local Planning Authority Department without the express permission of Tyrer Ecological Consultants Ltd. Furthermore, the data contained herein must not be copied, re-produced or sent to any other party/organisation whatsoever without the express permission of Tyrer Ecological Consultants Ltd.

Tyrer Ecological Consultants Ltd will however consider forwarding data that is collected as part of its reports to the relevant wildlife records centre.

Executive Summary

As part of a proposed planning application with Bury Metropolitan Borough Council concerning an area of land off Leigh Lane, Tyrer Ecological Consultants carried out a Preliminary Ecological Appraisal (PEA) in November 2024.

The PEA was commissioned by 3D Eco; proposals are understood to involve the erection of a stilted dwelling within an existing woodland glade.

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 provided to the author, the Land off Leigh Lane is likely **exempt** from the Biodiversity Gain Planning Condition under the exemption “Self-build and custom housing”. The planned development is to the specifications of the proposed new occupants who will live there upon its completion.

Habitats & Sites of Biological Importance (SBI)

The site is host to lowland mixed deciduous woodland priority habitat, with the west of the site also falling within Cyrus Ainsworth’s Nurseries & Parkers Lodges SBI.

As such, a strict and robust Construction Environmental Management Plan (CEMP) will likely be required to prevent impacts to the woodland and other qualifying habitats of the SBI.

Invasive Non-Native Species

Three INNS, listed under either Schedule 9 (Part II) of the Wildlife and Countryside Act (1981) or Schedule 2 of the IASO (2019) were observed within or in close proximity to the site boundary; Japanese knotweed, rhododendron and Himalayan balsam.

To prevent further spread of these species from within the site, it is recommended that they 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.

Bats

Three trees (**T1 – T3**) within the red line boundary of the site offer potential roost features that could not be fully observed due to their height. As such, **T1 – T3** are assessed 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).

Therefore, a further survey of T1 – T3 should be carried out to determine potential usage by bats, in the form of an aerial inspection by a suitably qualified Ecologist, via either climbing equipment or a Mobile Elevated Work Platform (MEWP) and aided by an endoscope. Following these additional surveys, the trees can be formally categorised, and further recommendations may be necessary.

The site also offers high suitability habitat in relation to commuting and foraging for bats, and as such the erection of the new structure and increased levels of lighting post-development

could have a negative impact on habitats used by bats. As such, a combination of Night-time Bat Walkover (NBW) surveys and static bat detector surveys are recommended in line with BCT guidelines, in order to determine the extent to which the woodland is utilised by bats.

During the first NBW, a static bat detector should be placed within the woodland, within the curtilage area of the proposed building. These surveys must be undertaken between April and October, though three separate visits may not be necessary dependent on the results of the initial visits and static results. This data can then be used to produce an impact assessment and inform mitigation strategies or lighting plans if necessary.

Birds

There is an abundance of viable nesting platforms within the woodland and individual trees, which could provide suitable nesting locations within the nesting bird season of March – August, inclusive, while opportunities also exist within the dense overgrown areas of invasive species that have colonised the cleared areas of the site.

Any works likely to impact upon any vegetation, including the erection of the structure, 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.

Terrestrial fauna

Badger, hedgehogs, common amphibians and reptiles 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.*

The results of the desk and field study suggest that the works at the site are unlikely to result in an offence to GCN being committed.

Notwithstanding this, to ensure that impacts to individual GCN potentially utilising the site are minimised, it is recommended that a robust, detailed and bespoke working Method Statement should be applied outlining key RAMs and working protocols to be in effect during the proposed work schedule once confirmed.

Table of Contents

- 1.0** Introduction & Scope
- 2.0** Legislation & Policy
- 3.0** Methodology
- 4.0** Limitations
- 5.0** Desk Study Results
- 6.0** Field Study Results
 - 6.1** Habitat Survey
 - 6.2** Vegetation
 - 6.3** Bats
 - 6.4** Birds
 - 6.5** Other Terrestrial Mammals
 - 6.6** Herpetofauna
 - 6.7** Invertebrates
- 7.0** Conclusions & Recommendations
- 8.0** Biodiversity Statement
- 9.0** Bibliography

Appendix I: Site Photographs

Appendix II: Botanical Species List

Appendix III: Biodiversity Enhancement: General Recommendations

Appendix IV: UK Habitats Map

1.0 Introduction & Scope

- 1.1 As part of a proposed planning application with Bury Metropolitan Borough Council concerning an area of land off Leigh Lane, Tyrer Ecological Consultants carried out a Preliminary Ecological Appraisal (PEA) in November 2024.
- 1.2 The PEA was commissioned by 3D Eco; proposals are understood to involve the erection of a stilted dwelling within an existing woodland glade. See **Figure 1.1** for a proposed site plan, with curtilage of building highlighted in yellow.

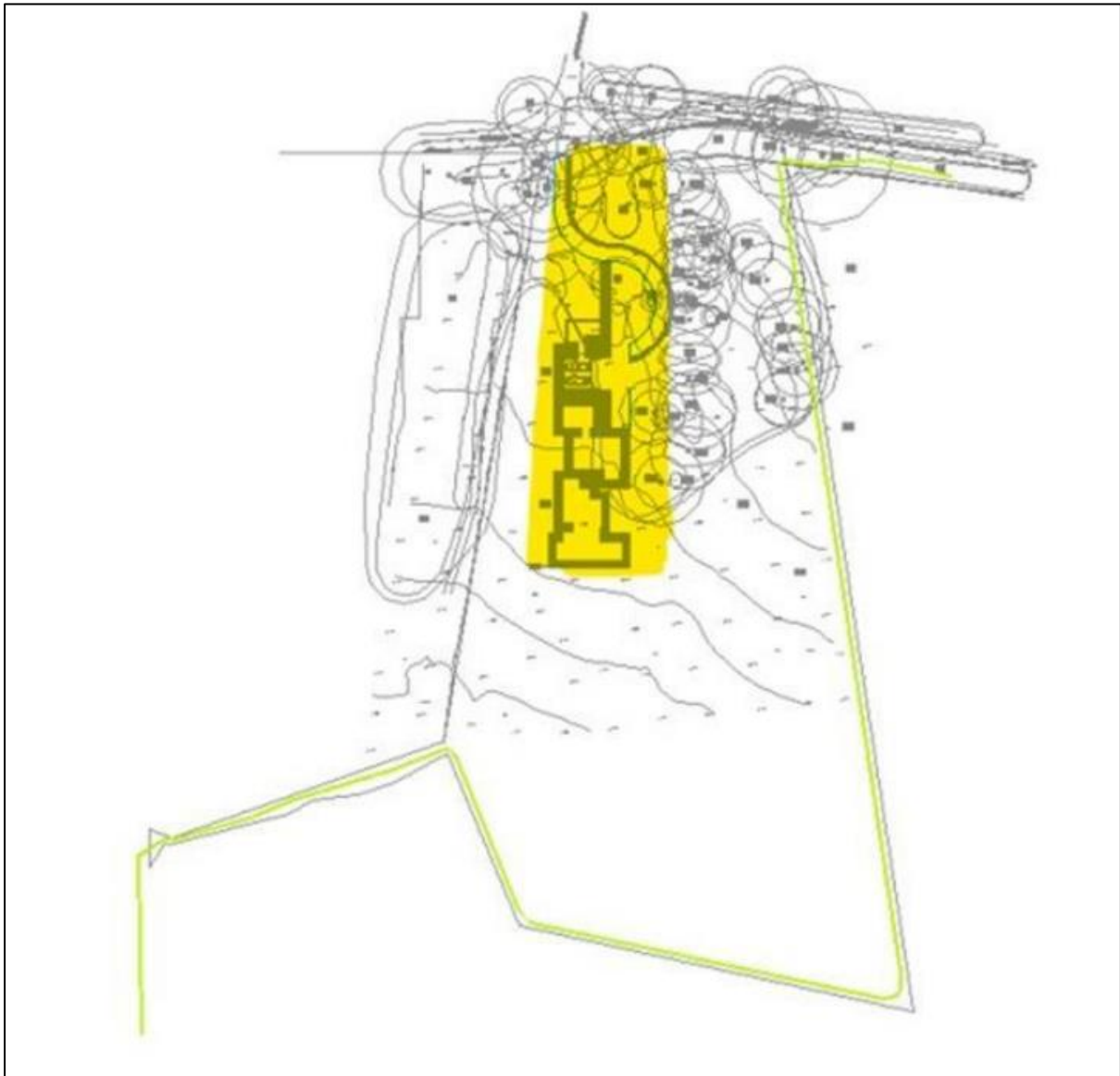


Figure 1.1 – Proposed site plan © 3D Eco

- 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),
 - Trees 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),
 - A water course in proximity to the site was assessed relative to its potential to host water vole (*Arvicola amphibius*) and otter (*Lutra lutra*),
 - Three waterbodies in proximity to 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),
 - Habitats were assigned and condition assessed in accordance with Biodiversity Net Gain Principles and Rules (DEFRA, February 2024) covered in the most recent User Guide¹.

¹ See:

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

- 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.

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 193 of the National Policy Planning Framework (as revised in December 2024) 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 reasons² 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 This national focus on the conservation of the natural environment is echoed in Policy EN6 of the Adopted Bury Unitary Development Plan (2022), which states:

“The Council will retain, protect and enhance the natural environment of the Borough, particularly in relation to areas of ecological, wildlife and geological importance.”

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 2024, legislates net gain in biodiversity through paragraphs 8(c), 187(d), 192(b) and 193(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 2024³
 - The Biodiversity Gain Site Register Regulations 2024⁴
 - The Biodiversity Gain Site Register (Financial Penalties and Fees) Regulations 2024⁵
 - The Biodiversity Gain Requirements (Exemptions) Regulations 2024⁶

² For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat

³ See: <https://www.legislation.gov.uk/uksi/2024/44/contents/made>

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

⁵ See: <https://www.legislation.gov.uk/uksi/2024/45/contents/made>

⁶ See: <https://www.legislation.gov.uk/uksi/2024/47/contents/made>

- The Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024⁷
- The Biodiversity Gain (Town and Country Planning) (Modifications and Amendments) (England) Regulations 2024⁸

2.11 Government guidance⁹ states the following in relation to exemptions from BNG:

“An exemption applies to this type of development when it meets all the following conditions:

- Consists of no more than 9 dwellings*
- On a site that has an area of no larger than 0.5 hectares*
- Consists exclusively of dwellings that are self-build or custom housebuilding as defined in section 1(A1) of the Self-build and Custom Housebuilding Act 2015¹⁰.”*

2.12 Based upon the above, it is understood that the application is exempt from mandatory national BNG requirements under the exemption “Self-build and custom housing”. The planned development is to the specifications of the proposed new occupants who will live there upon its completion. As such, further BNG information has largely been omitted from this report, with the exception of the biodiversity statement in Section 9.

⁷ See: <https://www.legislation.gov.uk/uksi/2024/48/contents/made>

⁸ See: <https://www.legislation.gov.uk/uksi/2024/50/contents/made>

⁹ See: <https://www.gov.uk/guidance/biodiversity-net-gain-exempt-developments>

¹⁰ See: <https://www.legislation.gov.uk/ukpga/2015/17/section/1>

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 Bury Metropolitan Borough 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 (LERC) serving the area, in this case Greater Manchester Local Record Centre (GMLRC), was sourced for the area within a 2.0km radius of a site-central grid reference.

Field survey

- 3.6 A daytime preliminary ecological appraisal (PEA) was conducted on the 18th November 2024 in cool conditions (1°C), average wind 1/12 (Beaufort scale), average 5% cloud cover, by the following surveyor (see **Table 3.1** below).

Table 3.1 – Site surveyor credentials

Name	Description of most relevant credentials
Mr. H. Mulligan Qualifying CIEEM	• Consultant Ecologist with 2 years training and experience, • MBiolSci in Biological Sciences (Zoology), • Accredited agent on the Natural England Great Crested Newt: CL08 Class 1 licence (2022-10604-CL08-GCN) of Mr. D. Burrows Qualifying CIEEM, • Accredited agent on the Natural England Class 2 bat license of Mrs K Wilding CEnv MIEMA ACIEEM (CLS-14227), • Holder of a FISC Level 3 (2023) (Botanical competency), • Meets the requirements of CIEEM's Competency Framework Section S (Surveying) to Capable level.

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).

Faunal assessment

- 3.11 During the 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

- 3.12 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**).
- 3.13 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.
- 3.14 Buildings and other permanent / semi-permanent structures (where present) would be 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.

- 3.15 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.
- 3.16 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 <i>et al.</i>, 2016 and Jansen <i>et al.</i>, 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

3.17 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.

3.18 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 of the Wildlife & Countryside Act (1981) (as amended) and other priority species.

Other terrestrial mammals

3.19 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.

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

- 3.21 Any accessible ditches, brooks, or waterways were assessed for their potential to offer habitat suitability for water vole, which included a preliminary search for:
- Sightings – confirmed sighting of a water vole during the survey.
 - Latrines – collections of droppings.
 - Burrows – holes along the water's edge and in the bank above.
 - Footprints – forefoot and hind foot.
 - Pathways in vegetation – low runs or tunnels pushed through vegetation.
 - Feeding remains – piles of chewed lengths of vegetation with 45-degree cuts to the ends.
 - Cropped grass around tunnel entrances – grazed vegetation to form a 'lawn' around burrow.
- 3.22 The methodology and impact assessment for Water voles followed guidance within the Water Vole Conservation Handbook, 3rd Edition (Strachan & Moorhouse, 2011) and the Water Vole Mitigation Handbook - The Mammal Society Mitigation Guidance Series (2016).
- 3.23 The water vole habitat suitability assessment has been designed by Harris et al. (2009). The method grades sites by a simple scoring index with each character scoring 1 if present and 0 if absent. These scores are then applied to habitat categories of: <3: Unsuitable, 3-5: Sub-optimal, >5: Optimal. The criteria are as follows:
- Well-developed (>60%) bank-side and emergent vegetation to provide cover;
 - Year-round availability of food sources;
 - Suitable refuge areas above extremes in water levels;
 - Steep banks suitable for burrowing;
 - Permanent open water;
 - Presence of berm (ledge at water level);
 - Lack of disturbance through poaching, grazing and/or recent management; and
 - Nest building opportunities in vegetation above water level.
- 3.24 During the water vole suitability assessment, the potential for the brook to be utilised by otters would also be assessed, and a search for evidence including scat, jelly, and individuals of the species would be undertaken.

Herpetofauna

- 3.25 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.*

- 3.26 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.

- 3.27 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.*

- 3.28 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.

- 3.29 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*).
- 3.30 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,
- Slow worm (*Anguis fragilis*) use a variety of habitats, similar to the common lizard, however are more associated with gardens and brownfield sites.

- 3.31 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

- 3.32 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)

- 3.33 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.
- 3.34 The results, conclusions and recommendations of this report have been assessed by Mrs. K. Wilding, Director of Tyrer Ecological Consultants Ltd, and her assessment concurs with the findings and recommendations of the surveyor Mr. H. Mulligan.

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 surveyors. 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 a sub-optimal period. It is considered, however, that enough information was gathered during the diurnal appraisal on which to base ecological conclusions and recommendations, and this is not considered to be a significant constraint.
- 4.3 The survey took place at a time when bats are outside of their active season and birds are outside of their breeding season; as such, there is less chance of encountering direct evidence of these groups. However, suitability for these groups can be readily identified at any time of the year, and thus survey timing is not considered to be a significant constraint in this instance.
- 4.4 One of the waterbodies within 250m of the site was not accessible on the day of the survey (**P4**). While this is accepted as a limitation, it is considered that enough data was gathered from surveying the other accessible bodies to produce an accurate impact assessment. As such, this is not considered to be a significant constraint.
- 4.5 In considering all potential survey constraints, no significant limitations were experienced that might adversely influence the results, conclusions, and recommendations of this report.

5.0 Desk Study Results

- 5.1 The site is located to the south of Leigh Lane in western Bury, approximately 2.0km west of the town centre. The site is comprised predominantly of an area of broadleaved woodland alongside a small patch of grassland, previously acting as part of a garden centre. The site has a total area of approximately 1.26ha (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 comprised of a mixture of semi-natural and suburbanised habitats; the woodland onsite extends offsite to the east and west, only divided by scattered detached dwellings and abandoned premises, while the narrow Elton Brook lies immediately to the south of the site, with a large lake located beyond this, surrounded by wider areas of woodland and open grassland with connectivity to the habitats onsite. In contrast to this, a sizeable residential development of semi-detached housing, accompanying gardens and school grounds is present 0.1km to the north.

Relevant Planning History

- 5.3 A search of the Bury Council planning portal revealed that a number of previous planning applications have been undertaken in the nearby area in the past 10 years, with the most relevant relating to an unsuccessful 2023 application for the erection of two detached dwellings (Ref: 69510); the red line boundary for this former application lies directly adjacent to and partially covers the red line boundary of this report's application. Several ecological reports were produced as part of this application by Rachel Hacking Ecology (Extended Phase 1 Habitat Survey, Biodiversity Impact Assessment, Botanical Survey, SBI Impact Assessment), which are readily available online. Where relevant, the findings of these reports have been referenced within this section.

Designated Sites

- 5.4 A search of MAGiC Maps revealed that there is a single site for nature conservation present within a 2.0km search radius of the site (see **Table 5.1** below for further information and **Figure 5.2** overleaf for a visual aid).

Table 5.1 – Statutory Designated Sites within 2.0 kilometres of application site and reasons for designation

Site name	Designation type	Interest features
Kirklees Valley (1.2 kilometres north)	Local Nature Reserve (LNR)	Natural England Citation states: “The habitats to be found with Kirklees Valley are varied including woodland, grassland, heathland, ponds, lodges and streams. Wildlife includes a variety of birds, amphibians and bats. Roe deer have been seen on occasion.”

- 5.5 The site is also positioned within the Impact Risk Zone (IRZ) of several Sites of Special Scientific Interest (SSSI), including West Pennine Moors at a distance of 4.8km to the north. Based on the IRZ – Threshold Checker¹¹ available on MAGiC Maps 2024, the proposals do not present a likely risk of having a harmful effect on the surrounding terrestrial SSSIs and the Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites that they underpin.
- 5.6 Where no impact to SSSI's is predicted, NE issue the following advice within their standing guidance on SSSI impact zones (NE, 2019):
- “It is important to note that the SSSI IRZs only indicate Natural England's assessment of likely risk to the notified features of SSSIs. Where they indicate such a risk is unlikely, this does not mean that there are no potential impacts on biodiversity or the wider natural environment.”*
- 5.7 The site is located within ‘Cyrus Ainsworth’s Nurseries & Parkers Lodges’ Site of Biological Importance (SBI); this SBI is cited for a variety of habitats, including semi-natural broadleaved woodland, large areas of standing open water, ponds & small lodges, and reedbed, swamp & fen.

¹¹ See:
[https://irz.geodata.org.uk/IRZ/step2.html?irzcode=3111221502000¬es=&location=351359,399223%20\(IRZ%20polygon%20centre\)](https://irz.geodata.org.uk/IRZ/step2.html?irzcode=3111221502000¬es=&location=351359,399223%20(IRZ%20polygon%20centre))

Land off Leigh Lane, Bury, BL8 1RL Preliminary Ecological Appraisal

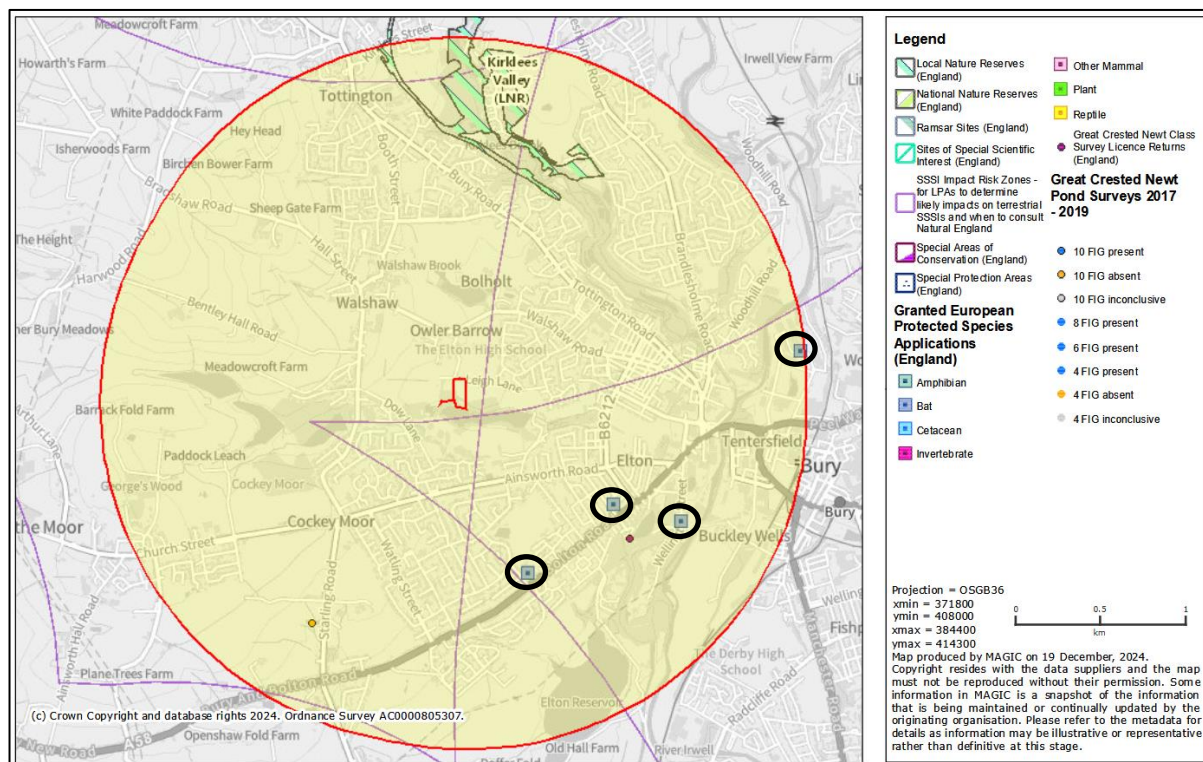


Figure 5.2 – Designated site and EPSML data for the area within 2.0km of application site, with granted EPSMLs circled in black © MAGIC Maps 2024

5.8 In addition to the above, nine further SBI are also present within a 2.0km buffer of the site, though citations for these sites are not publicly available. See **Table 5.2** for more information.

Table 5.2 – SBI within 2.0 kilometres of application site

Site name	Distance from site	Selection Criteria
Barracks Lodge	0.7km south	Ponds & Small Lodges (Fw2); Aquatic Invertebrates (AI1); Amphibians (Am1)
Cockey Moor Wood Pasture and Marsh	0.6km west	Wood Pasture (Wd4); Grassland (Gr2)
Daisyfield	1.3km south-east	Swamp (Fw1); Ponds (Fw2); Grassland (Gr2); Woodland (Wd1); Aquatic Invertebrates (AI1)
Elton Reservoir	1.3km south-east	Birds (Br6 & WB4); Grassland (Gr2)
Kirklees Brook	1.0km north-east	Small Lodges (Fw2); Bats (Mm1); Aquatic Invertebrates (AI1)
Lower Hinds	1.8km south-east	Calcareous grassland (Gr3)
Manchester, Bolton & Bury Canal (East)	1.7km south-east	Ponds (Fw2); Canal (Fw3)

Site name	Distance from site	Selection Criteria
Ponds off Cockey Moor Road	1.5km west	Fen (Fw1); Aquatic Invertebrates (AI1); Amphibians (Am1)
Starling Road Reservoir	1.4km south-west	Grassland (Gr2)

Habitats

- 5.9 An online search of MAGiC Maps identified the following priority habitats within a 2.0km search radius (see **Table 5.3** below).

Table 5.3 – Priority habitats located within 2.0km buffer

Habitat Type	Designation	Distance to site
Deciduous woodland	Priority Habitat Inventory	Onsite
Good quality semi-improved grassland	Priority Habitat Inventory	1.2km west
Lowland dry acid grassland	Priority Habitat Inventory	0.6km west
Lowland fens	Priority Habitat Inventory	0.1km south
Lowland meadows	Priority Habitat Inventory	1.4km south
Open mosaic habitat	National Land Use Database	1.2km east
Traditional orchards	Priority Habitat Inventory	1.5km south-east
Woodpasture and parkland	BAP Priority Habitat	0.9km west

Vegetation

- 5.10 The site is positioned within a ‘low’ zone of the summarised botanical value map 2022¹² on MAGiC Maps 2024, indicating that the wider area is of low botanical value due to the low coverage of rare, scarce and threatened species, and of species indicative of priority habitats, though the area has had poor survey coverage.
- 5.11 No records of any specially protected botanical species, species considered to be invasive non-native species (INNS) in Greater Manchester, or listed as such under Schedule 9 of the WCA/Schedule 2 of the IASO were returned in the GMLRC commercial data search.
- 5.12 Rachel Hacking Ecology’s Extended Phase 1 Habitat Survey for the nearby development recorded Japanese knotweed (*Reynoutria japonica*), Himalayan balsam (*Impatiens glandulifera*), and rhododendron (*Rhododendron ponticum*) within the surrounding habitat in August 2022, with each species listed as invasive under either Schedule 9 of the WCA or Schedule 2 of the IASO.

Bats

- 5.13 An online search of MAGiC Maps revealed that four European Protected Species Mitigation Licences (EPSML) for bats has been granted within a 2.0km radius of the site boundary, see **Table 5.4** for further details.

¹² Further information available <https://www.data.gov.uk/dataset/86b755f2-b28f-48c9-b5b6-648d6bab6c40/summarised-botanical-value-map>

Table 5.4 – EPSML data records from MAGiC Maps

Licence Number	Distance from site	Context (where relevant)
EPSM2012-4607	2.0km east	Common pipistrelle; destruction of resting place
EPSM2012-5060	1.1km south-east	Common pipistrelle; destruction of breeding site
2015-8936-EPS-MIT	1.4km south-east	Common pipistrelle; destruction of resting place
2018-33380-EPS-BDX	1.1km south	Common pipistrelle; damage & destruction of resting place and breeding site

- 5.14 The commercial data search returned a large number of records pertaining to bats; these records were filtered to include only those occurring within the past ten years. Records include maternity, hibernation and day roosts of common pipistrelle (*Pipistrellus pipistrellus*), a brown long-eared (*Plecotus auritus*) roost, and large numbers of unidentified *Pipistrellus sp.* roosts, in addition to numerous activity and casualty records of the aforementioned species, alongside Daubenton's (*Myotis daubentonii*), unidentified *Myotis* species, noctule (*Nyctalus noctule*), soprano pipistrelle (*Pipistrellus pygmaeus*), whiskered (*Myotis mystacinus*) and whiskered/Brandt's (*Myotis mystacinus/brandtii*). Of these records, the most relevant are located 0.1 – 0.2km to the east within the woodland that extends offsite, with common pipistrelle, *Myotis sp.*, and brown long-eared activity all recorded in 2015.
- 5.15 The habitats in the immediate surroundings of the site provide high value habitat for bats, with an abundance of dense deciduous woodland extending in all directions and lining Elton Brook, offering roosting opportunities alongside habitats highly suitable for foraging and commuting. Species likely to be present in the immediacy include the brown long-eared, associated with foraging in broadleaved woodland, Daubenton's, a species that forages over waterbodies, and common pipistrelle, often associated with roosting in occupied dwellings.

Birds

- 5.16 A large number of bird records were returned in the GMLRC data search within the past ten years, though the vast majority of these records are located over Elton Reservoir a minimum of 1.1km away. However, records of potential significance revealed by the search include bullfinch (*Pyrrhula pyrrhula*) and song thrush (*Turdus philomelos*) recorded within 0.1km of the site in 2015, while barn owl (*Tyto alba*) and curlew (*Numenius arquata*) were each recorded approximately 1.0km to the west in 2019. Records of kingfisher (*Alcedo atthis*) are also present in the wider search radius, though none lie along Elton Brook.
- 5.17 Given the woodland in all directions, the extending environment is likely to support a moderately diverse assemblage of bird species, while opportunities are also present for species that utilise riverine habitats such as kingfisher. Species adapted to urbanisation and common garden species are also considered likely to be present such as house sparrow (*Passer domesticus*), house martin (*Delichon urbicum*) and swallow (*Hirundo rustica*), though opportunities for Schedule 9 listed raptors such as barn owl are relatively limited given the scarcity of rank arable grasslands in the immediacy.
- 5.18 The aforementioned linear and area features suitable for bats would also afford connective habitat for bird species in the wider landscape.

Other Terrestrial Mammals

- 5.19 10 records of badger were returned in the GMLRC data search within the past 10 years, dating from 2020 – 2023, with each located between 0.7 – 2.0km to the east and south-east. However, each of these records is largely disconnected from the site beyond significant development, and thus these records are not considered to hold particular significance. Numerous records of hedgehog are present in the surrounding environment, with strong connectivity to the site, with the nearest being 0.4 – 0.5km to the east dating from 2020.
- 5.20 Despite the absence of connectivity to nearby records, the woodland onsite and extending in all directions could feasibly support badger in some capacity, with broad connectivity for long distances in all directions, and no major barriers to dispersal for this species. In addition, the habitats in proximity to the site are highly likely to support hedgehog, a species highly adapted to urbanisation, with grasslands and garden habitats with strong connectivity to the site and opportunities for refuge also present within the woodlands.
- 5.21 Numerous records of otter were returned within the data search, though these are largely located along the River Irwell with no connectivity to the site, with the closest record being over 1.3km to the east. No records of water vole were returned.

Herpetofauna

- 5.22 There is an absence of EPSML pertaining to GCN within a 2.0km radius of the site; see **Figure 5.2** previous for visual aid. However, a single 'present' GCN class survey license return is located 1.3km to the south-east located 1.9km to the north, dating from 2016.
- 5.23 Based on the desktop assessment and ground truthing during the survey, there are four standing waterbodies within 250m of the application site, three small ponds (**P1**, **P2** & **P4**) and a large reservoir comprised of three interconnected sections (**P3**) (see **Figure 5.3** overleaf).
- 5.24 While the data search revealed a large number of 'present' GCN records within the past 10 years, the nearest of these is located 1.2km to the south-east, with each located beyond dense urbanisation and having no connectivity to the site. Six 'absent' GCN records are present within 0.3km of the site, each dated from 2014; of these records, four relate directly to the four waterbodies within 250m of the site, indicating that each of the bodies was absent of GCN in 2014. However, it is acknowledged that these records are historic and thus cannot necessarily be used to conclusively rule out GCN from the waterbodies.
- 5.25 The immediate surroundings are considered to offer strong suitability for GCN; numerous waterbodies are present in all directions, while the woodland, open grassland and wetlands in the immediacy offer a range of habitat types suitable for both the terrestrial and aquatic phase of this species, while refugia within the woodland could offer hibernation potential.
- 5.26 Numerous common toad records were revealed by the data search within the past 10 years, most notably being recorded in both **P3** and **P4** in 2014.
- 5.27 Given the habitats onsite and in proximity, alongside the above records, the presence of common amphibians onsite is considered highly likely.
- 5.28 The data search revealed an absence of reptile records within 2.0km of the site in the past 10 years. Despite this, this taxon is frequently under-recorded; given the known presence of amphibians in proximity to the site, a common prey item for reptiles such as the grass snake (*Natrix helvetica*), alongside ecotones between woodland, wetlands and grasslands in the surrounding habitat, it is considered that opportunities for reptiles may exist.

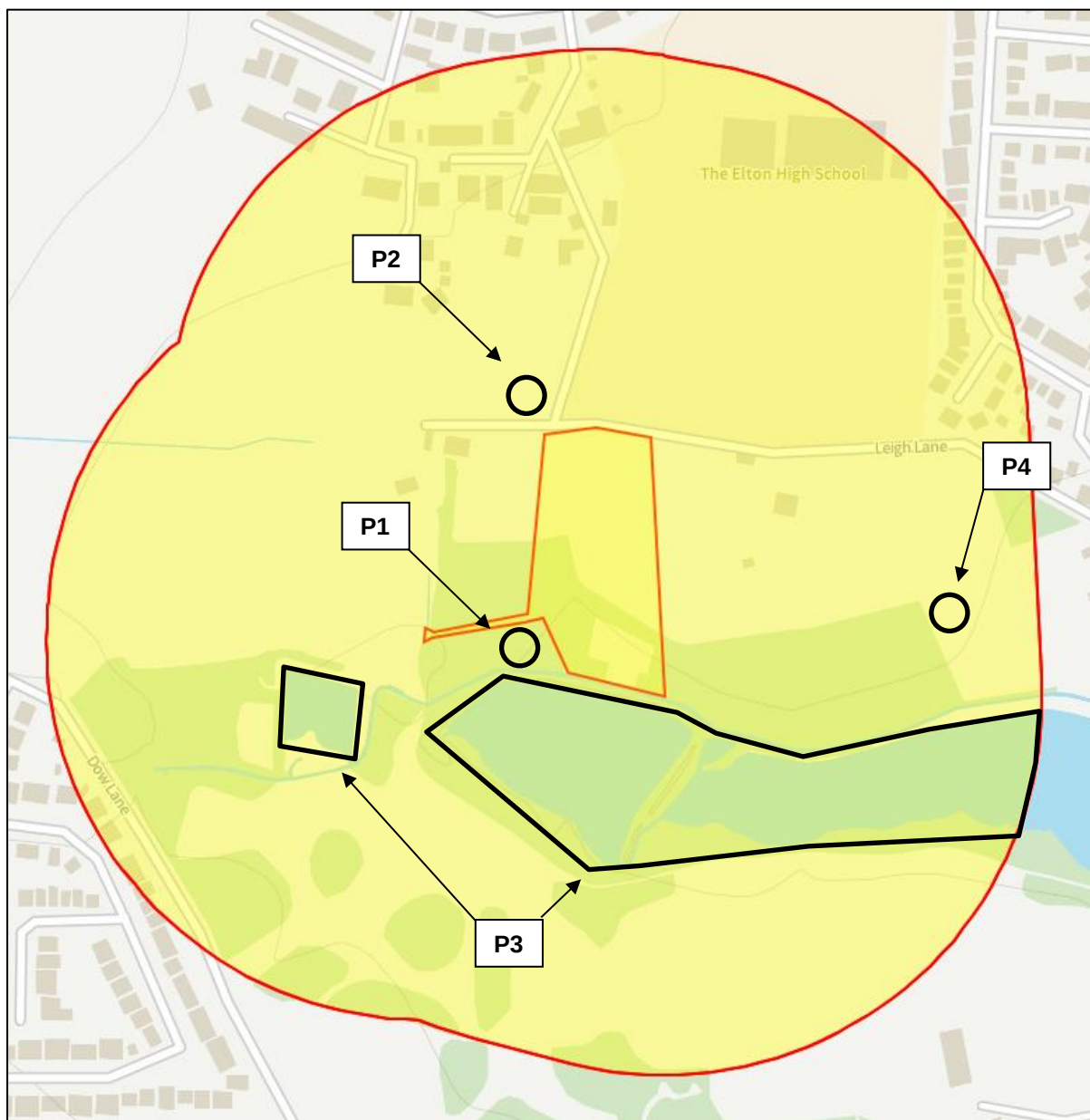


Figure 5.3 – Standing waterbodies within 250m of the application site © MAGiC Maps 2024

Invertebrates

- 5.29 The mosaic of woodland, grassland, wetland and waterbodies surrounding the site is likely to support a moderately diverse assemblage of invertebrates, though is considered unlikely to host a nationally significant population.
- 5.30 Recent records of cinnabar (*Tyria jacobaeae*), latticed heath (*Chiasmia clathrata*) and white-letter hairstreak (*Satyrus w-album*) are present within 2.0km of the site, though these are each a minimum of 0.9km away with limited connectivity to the site.

6.0 Field Survey Results

6.1 Habitat Survey

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 II**. Refer to **Appendix IV – UK Habitats Map** for the location of described habitats & Target Notes (TN).

Table 6.1.1 – UK Habitat types within the survey area

Area habitat	Sec. Codes	Description
g4 Modified grassland	14 Scattered rushes	The south-east of the site features an area of wet modified grassland, previously forming part of a garden centre; species composition is dominated by dead stands of the invasive species Himalayan balsam (<i>Impatiens glandulifera</i>), but also includes graminoids such as false oat-grass (<i>Arrhenatherum elatius</i>), creeping bent (<i>Agrostis stolonifera</i>) and Yorkshire-fog (<i>Holcus lanatus</i>), alongside forbs typical of enriched grasslands such as common nettle (<i>Urtica dioica</i>), broad-leaved dock (<i>Rumex obtusifolius</i>), curled dock (<i>Rumex crispus</i>) and creeping buttercup (<i>Ranunculus repens</i>), and scattered stands of soft-rush (<i>Juncus effusus</i>). The remains of several timber and corrugated metal sheds are present within this area, with their collapsed shells now offering potential refugia. Several scattered pedunculate oak (<i>Quercus robur</i>) trees are also present within this parcel.
	32 Scattered trees	
	503 Wet	
	524 Invasive non-native species	
w1f7 Other lowland mixed deciduous woodland	30 Semi-natural woodland	The majority of the site is comprised of aged stands of semi-natural deciduous woodland; the canopy level is dominated by beech (<i>Fagus sylvatica</i>) and sycamore (<i>Acer pseudoplatanus</i>), though other woody species are present including numerous veteran pedunculate oaks, silver birch (<i>Betula pendula</i>), sweet chestnut (<i>Castanea sativa</i>), wych elm (<i>Ulmus glabra</i>) and hazel (<i>Corylus avellana</i>). The understorey is comprised largely of cherry laurel (<i>Prunus laurocerasus</i>) and holly (<i>Ilex aquifolium</i>), though several areas throughout feature dense stands of the invasive Japanese knotweed (<i>Reynoutria japonica</i>) and scattered invasive rhododendron (<i>Rhododendron ponticum</i>). The ground level in much of the woodland features a monoculture of Himalayan balsam, though the stands were largely dead during the survey, but other areas have a scarcity of ground flora typical of beech-dominated woodlands, limited to species such as wood avens (<i>Geum urbanum</i>), herb-Robert (<i>Geranium robertianum</i>), broad buckler-fern (<i>Dryopteris dilatata</i>), male-fern (<i>Dryopteris filix-mas</i>), common ivy (<i>Hedera helix</i>) and creeping soft-grass (<i>Holcus mollis</i>). To the south-west of the woodland is a very inundated, marshy area, likely caused by overflow from Elton Brook, which the ephemeral P1 extends into.
	213 Complex woody structure	
	214 Fallen dead wood abundant	
	505 Inundation vegetation	
	524 Invasive non-native species	
Target Notes:	1	Location of Japanese knotweed INNS
	2	Location of rhododendron INNS
	3	Location of Himalayan balsam INNS
	4	Location of inundated area
	5	Location of trees with PRFs

- 6.1.2 The lowland mixed deciduous woodland onsite is listed as a priority habitat under both the UKBAP and the GMBAP.

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 either Schedule 9 (Part II) of the Wildlife and Countryside Act (1981) or Schedule 2 of the Invasive Alien Species (Enforcement and Permitting) Order (IASO) (2019) were observed within the red line boundary: Japanese knotweed, rhododendron and Himalayan balsam, each in dense abundances and extending offsite (see **Appendix IV** for approximate locations of the INNS). Given the time of year of the survey however, the full extent of the INNS spread could not be accurately mapped.

6.3 Bats

- 6.3.1 No built structures are present within the site boundary; as such, no buildings were assessed relative to their potential to offer roosting suitability for bats.
- 6.3.2 While it is understood that no trees will be felled as part of the proposals, the erection of the structure may impact upon bats roosting within trees, with emergence points potentially blocked. As such, a GLTA of the trees, with a particular focus on those within or in close proximity to the proposed works area to the north-west, was undertaken. Three trees were considered to offer potential suitability; see **Table 6.3.1** for further information.

Table 6.3.1 – Tree descriptions at the application site

T1 (SD 78164 11204)	
T1 is a large multi-stemmed sycamore densely covered in common ivy, which can both act as a PRF for bats, creating a crevice between the trunk and the ivy, and can also conceal other PRFs such as splits and cracks. Given T1's position directly within the proposed curtilage area, it is possible that any PRFs will be blocked by the new structure, and if in use could directly disturb a bat roost. However, given the height of the tree canopy, it was not possible to assess the PRFs accurately. As such, further survey effort will be required to ascertain whether the tree offers suitability for bats. T1 is therefore categorised as pertaining to a bat roost suitability of 'FAR'.	

T2 (SD 78198 11191)	
T2 is a mature pedunculate oak with a large, south-facing split on a branch high in the canopy, which could potentially extend deeper within the tree and offer roosting opportunities. Given T2's position adjacent to the proposed curtilage area, it is possible that impacts will occur should this PRF be in use. However, the height of the PRF within the canopy means that it could not be conclusively assessed. As such, further survey effort will be required to ascertain whether the PRF is suitable for use by bats. T2 is therefore categorised as pertaining to a bat roost suitability of 'FAR'.	
T3 (SD 78150 11121)	
T3 is a veteran pedunculate oak with numerous split branches and decay in the canopy, potentially offering numerous PRFs. While this tree is outside of the building's curtilage, should bats be using it, they may be directly impacted upon by lighting etc. As such further survey effort will be required to ascertain whether the canopy is suitable for use by bats. T3 is therefore categorised as pertaining to a bat roost suitability of 'FAR'.	

6.3.3 No obvious PRFs were identified by the surveyor on any of the other trees onsite, with each lacking any features that would offer any crevice or roosting potential. As such, all of the other individual trees onsite are categorised as pertaining to a bat roost suitability of **'None'**.

6.3.4 From a habitat suitability assessment in relation to bat activity, the habitats within the site are likely of high value for bats, with the woodland offering foraging, commuting and roosting potential and acting as part of a commuting corridor to wider woodland blocks. The presence of bats within the site boundary is considered highly likely and impacts to commuting and foraging routes by the development may need to be considered.

6.4 **Birds**

6.4.1 In relation to WCA Schedule 1 specially protected bird species such as barn owl (*Tyto alba*), the site provides no suitable nesting platforms, direct evidence, or evidence of historic nesting. Impacts to specially protected bird species can likely be ruled out given the scale of the development and the character of the site.

6.4.2 In relation to more common bird species, the woodland onsite offers a plethora of suitable nesting platforms, which are highly likely to support a variety of breeding passerine and woodland birds during the nesting bird season of March – August inclusive.

6.5 Other Terrestrial Mammals

Badger & hedgehog

- 6.5.1 No field signs of badger, such as latrines, pathways, hairs, footprints, or feeding signs, for example snuffle holes and scratched trees / logs, were located within the application site boundary. However, given the well-established nature of the woodland, its connectivity to wider woodland parcels, and the presence of records of the species within 2.0km, the presence of badger onsite is considered possible. As such, impacts to this species cannot be conclusively ruled out.
- 6.5.2 Whilst no direct evidence of hedgehog was identified, the site habitats provide potentially suitable refuge with the shrubbery providing suitable foraging habitat and piles of brash offering potential hibernacula. Their occasional presence within the site is therefore considered possible.

Water vole & otter

- 6.5.3 The stretch of Elton Brook in proximity to the site was assessed relative to its potential to offer suitability for water vole, using the industry-wide standard Habitat Suitability Index (HSI) for this species; results are provided below in **Table 6.5.1**.

Table 6.5.1 – HSI scoring for water vole

Water Vole Habitat Suitability Assessment (1 if feature is present)	
< 3 = Unsuitable Habitat / 3 – 5 = Sub-optimal Habitat / > 5 = Optimal Habitat	Elton Brook
Well developed (>60%) bankside and aquatic vegetation providing cover	0
Year-round availability of food sources	0
Suitable refuge areas above extremes in water levels	1
Steep banks suitable for burrowing	0
Permanent open water	1
Ledge or berm present at water level	1
Lack of disturbance through poaching, grazing and/or recent management	0
Nest building opportunities in vegetation above water level	1
Habitat Suitability Index Score Total	4

- 6.5.4 Elton Brook scores a '4' on the HSI assessment, indicating that it provides sub-optimal value habitat for water vole; however, the reader should be aware that the HSI does not include factors such as the abundance of INNS such as Himalayan balsam which is abundant in many areas within the site close to the brook, which would further decrease the favourability for water vole. Given the sub-optimal score, the absence of any field signs, and the absence of any records within 2.0km of the site, alongside the location of the proposed structure being located beyond 50m of the brook, it is considered highly unlikely that water vole would be impacted by the proposals.
- 6.5.5 In relation to otter, Elton Brook is not considered to be significantly favourable, given its narrow and shallow nature, with no suitability for lay ups or holts. Furthermore, no field signs were observed within the site or bordering the brook to suggest its usage, while the records for otter within 2.0km are found beyond residential development in separate river valleys. Given that the works will not impact any habitat within 50m of the brook, it is considered unlikely that any impacts to holts or individual otters will take place.

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, there is an absence of granted EPSML within a 2.0km radius of the site, and the single 'present' GCN class survey license return and other 'present' GCN records revealed within the past 10 years by the GMLRC data search are located beyond dense urbanisation and have no connectivity to the site. However, four waterbodies are located within 250m of the site, denoted as P1 – P4, though P4 was inaccessible on the day of the survey, given its location within private ownership.

6.6.3 The GCN HSI was therefore applied for P1 – P3. See **Table 6.6.1** for waterbody 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 – Waterbody description within 250m radial buffer, with included HSI score

P1	
P1 is an ephemeral pool located directly to the south-west of the site. It has an estimated area of 100m², likely dries annually, is approximately 95% shaded 1m from shore, is highly unlikely to support waterfowl and fish, and is surrounded by highly suitable terrestrial habitat, with an estimated macrophyte cover of 5%. No assessment was made on water quality. Based on the above, the HSI value of the pond has been calculated as pertaining to 0.50 – Below Average. See Table 6.6.2 overleaf for further information on the individual category scorings.	
P2	
P2 is approximately 10m north-west of the site; it has an estimated area of 300m², likely sometimes dries, is approximately 60% shaded 1m from shore, is unlikely to support fish or waterfowl, and is surrounded by moderate quality terrestrial habitat, with an estimated macrophyte cover of 50%. No assessment was made on water quality. Based on the above, the HSI value of the pond has been calculated as pertaining to 0.79 – Good. See Table 6.6.2 overleaf for further information on the individual category scorings.	

P3

P3 is approximately 35m south of the site and is comprised of three interconnected artificial reservoirs. P3 has a combined total area of ~35,000m², never dries, is approximately 5% shaded 1m from shore, is likely to support waterfowl and fish, and is surrounded by moderate suitability terrestrial habitat, with an estimated macrophyte cover of <5%. No assessment was made on water quality.

Based on the above, the HSI value of the pond has been calculated as pertaining to **0.67 – Average**. See **Table 6.6.2** for further information on the individual category scorings.



Table 6.6.2 – HSI quantitative assessment of the ponds

Pond Reference	P1	P2	P3
SI1 – Location	1.0	1	1
SI2 – Pond area	0.2	0.5	-
SI3 – Pond drying	0.1	0.5	0.9
SI4 – Water quality	-	-	-
SI4 – Shade	0.3	1	1
SI6 – Fowl	1.0	1	0.33
SI7 – Fish	1.0	1	0.67
SI8 – Ponds	0.9	0.9	0.9
SI9 – Terr'l habitat	1.0	0.67	0.67
SI10 – Macrophytes	0.35	0.8	0.35
HSI	0.50	0.79	0.67

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.

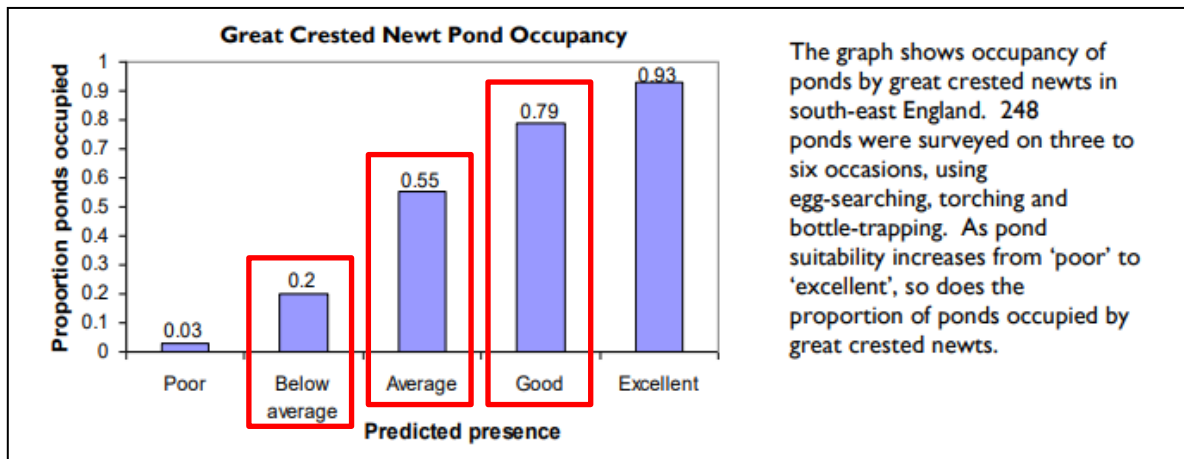


Figure 6.6.1 – GCN pond occupancy © ARC UK

- 6.6.4 Considering the above which indicates that P2, which is approximately 10m from the site and has strong connectivity, is likely to support breeding populations of GCN, the presence of GCN in proximity to the site is considered to be possible. Although the data search revealed that each of the surveyed ponds were absent of GCN in 2014, this historic data cannot be fully relied upon given the time that has elapsed since these records.
- 6.6.5 In a terrestrial contextual assessment, the site provides moderate value habitat for GCN, with the woodland and scrub understorey potentially offering suitable terrestrial habitat and hibernacula, alongside areas of inundation and piled refugia. Considering this, the 'Good' HSI score of P2, and the connectivity to a wider pond network which the site lies within, the presence of GCN within the site boundary cannot be ruled out. However, it is acknowledged that impacts to terrestrial habitat will be minimal onsite, given the small curtilage of the works and the stilted nature of the building.

Wider amphibians

- 6.6.6 Given the presence of a pond network, the habitats onsite offering refugia and inundated areas, and the presence of records in close proximity to the site, the presence of common amphibians onsite is considered to be likely.

Reptiles

- 6.6.7 The habitats onsite offer some suitability for reptiles, with ecotones between woodland, bare earth and grassland, while piles of refugia and brash could offer suitable hibernacula, and amphibians, a common prey item, are highly likely to be present onsite. While recent records of this group were not revealed within the data search, their presence onsite is considered to be possible.

6.7 Invertebrates

- 6.7.1 The habitats onsite are considered unlikely to support a locally notable assemblage given their location and likely to much of the surrounding habitat.

7.0 Conclusions & Recommendations

Designated sites

- 7.1 The site is positioned within the Impact Risk Zone (IRZ) of several Sites of Special Scientific Interest (SSSI), including West Pennine Moors at a distance of 8.4km to the north.
- 7.2 Based on the IRZ – Threshold Checker available on MAGiC Maps 2024, the proposals do not present a likely risk of having a harmful effect on the surrounding terrestrial SSSIs and the Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites that they underpin.
- 7.3 The west of the application site falls within Cyrus Ainsworth's Nurseries & Parkers Lodges SBI, a site designated for its semi-natural broadleaved woodland, large areas of standing open water, ponds & small lodges, and reedbed, swamp & fen.
- 7.4 As such, a strict and robust Construction Environmental Management Plan (CEMP) will likely be required to prevent impacts to the woodland onsite, to ensure that no impacts to the designated habitats occur. Key measures to address within this CEMP include, but are not limited to:
- Clear demarcation of works areas,
 - Pollution prevention measures (particularly considering nearby waterbodies),
 - Responsible storage of waste and materials,
 - Timings of works in relation to site-specific flora and fauna.

Habitats

- 7.5 The lowland mixed deciduous woodland onsite is listed as a priority habitat under both the UKBAP and the GMBAP.
- 7.6 While it is understood that no woodland felling will occur as part of the proposals, the CEMP outlined previously will ensure that no impacts to this priority habitat will occur.
- 7.7 Any landscaping should look to incorporate native species as discussed in **Appendix II**.

Vegetation

- 7.8 Three INNS, listed under either Schedule 9 (Part II) of the Wildlife and Countryside Act (1981) or Schedule 2 of the IASO (2019) were observed within or in close proximity to the site boundary; Japanese knotweed, rhododendron and Himalayan balsam.
- 7.9 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 an 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. Based upon the site plans, the proposals are highly likely to spread Himalayan balsam and giant hogweed, given their dense cover in areas that are proposed as grassland.
- 7.10 To prevent further spread of these species from within the site, it is recommended that they 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.

Bats

- 7.11 There are no built structures present within the red line boundary. No further surveys are therefore recommended at the site in relation to buildings.
- 7.12 As outlined in **Section 6.3**, three trees (**T1 – T3**) within the red line boundary of the site offer potential roost features that could not be fully observed due to their height. As such, **T1 – T3** are assessed 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) (see **Figure 7.1**).

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 7.1 – BCT extract on tree roost suitability criteria

- 7.13 Therefore, a further survey of T1 – T3 should be carried out to determine potential usage by bats, in the form of an aerial inspection by a suitably qualified Ecologist, via either climbing equipment or a Mobile Elevated Work Platform (MEWP) and aided by an endoscope. Following these additional surveys, the trees can be formally categorised and further recommendations may be necessary.
- 7.14 All of the other trees within the site were assessed as pertaining to a bat roost suitability of '**None**', and thus no further surveys are necessary.
- 7.15 The site also offers high suitability habitat in relation to commuting and foraging for bats, and as such the erection of the new structure and increased levels of lighting post-development could have a negative impact on habitats used by bats. As such, a combination of Night-time Bat Walkover (NBW) surveys and static bat detector surveys are recommended in line with BCT guidelines (see **Figure 7.2**), in order to determine the extent to which the woodland is utilised by bats.

Table 8.3. Minimum recommended number of repeats for activity surveys.			
Survey type	Low suitability habitat for bats ^a	Moderate suitability habitat for bats	High suitability habitat for bats
NBW	One survey visit ^b per season (spring – April/May, summer – June/July/August, autumn – September/October) ^c . Further surveys may be required if these visits, or the results of static detector surveys, reveal activity of interest that requires more observation on site.		
Automated/static bat detector surveys ^d The same locations should be used for each survey for comparison.	Data to be collected for a minimum of five consecutive nights per season (spring – April/May, summer – June/July/August, autumn – September/October) ^c in appropriate (or the best available) weather conditions for bats.	Data to be collected for a minimum of five consecutive nights per month (April to October) ^c in appropriate (or the best available) weather conditions for bats.	

Figure 7.2 – BCT extract on NBW and Automated/static bat detector surveys

- 7.16 During the first NBW, a static bat detector should be placed within the woodland, within the curtilage area of the proposed building.
- 7.17 These surveys must be undertaken between April and October, though three separate visits may not be necessary dependent on the results of the initial visits and static results. This data can then be used to produce an impact assessment and inform mitigation strategies or lighting plans if necessary.
- 7.18 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 that are currently free from illumination. A bat-sensitive lighting plan is therefore recommended in order to avoid potential impacts to bats. Several options to consider have been listed overleaf (see **Table 7.1**), though the reader is referred to the Bat Conservation Trust's 'Bats and Artificial Lighting at Night' guidelines (August 2023) for further information.

Table 7.1 – Extract from *Bats and Artificial Lighting at Night*, BCT

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

- 7.19 No impacts are applicable in relation to any Sch.1 (WCA) specially protected bird species such as barn owl, and no further surveys or recommendations are necessary in relation to specially protected birds, with no viability of nesting within the site boundary.
- 7.20 Regarding wider breeding bird species, there is an abundance of viable nesting platforms within the woodland and individual trees, which could provide suitable nesting locations within the nesting bird season of March – August, inclusive, while opportunities also exist within the dense overgrown areas of invasive species that have colonised the cleared areas of the site.

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.*

- 7.21 Any works likely to impact upon any vegetation, including the erection of the structure, 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.”*

- 7.22 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

- 7.23 Based upon the desktop assessment, the presence of badger onsite on an occasional basis is considered possible, while the presence of hedgehog is considered likely.
- 7.24 It is therefore recommended that Reasonable Avoidance Measures (RAMs) are enacted at the site to avoid any impacts these species. RAMs to minimise construction impacts and prevent harm or injury to badgers, hedgehog and hare 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, hedgehog or hare 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.

Water vole & otter

- 7.25 The results of the desk and field study suggest that direct impacts to water vole can likely be ruled out by the proposals, given an absence of suitability within the stretch of the brook and lack of records.
- 7.26 Direct impacts by the proposals on otter are considered to be unlikely, given the lack of evidence and records in proximity, and given that the works do not extend to within 50m of the brook. In addition, the implementation of the CEMP as outlined in Section 7.1 would ensure that any impacts to the waterway caused by the proposals would be minimised. As such no recommendations in relation to this species are required.

Herpetofauna

- 7.27 Regarding great crested newt (GCN), the results of both the desktop and field study suggest that the presence of this species in the immediate surroundings of the site is possible, given the close proximity of several ponds, particularly **P2** (~10m to the north-west) which scored 'Good' in HSI assessment. However, the proposals will not entail any aquatic habitat destruction, and the curtilage of the building will not impact upon a significant portion of the woodland given its stilted character. In addition, the site is disconnected from any records of GCN, with each of the ponds within 250m being absent of GCN in 2014.
- 7.28 Considering the above, it is deemed that the works at the site are unlikely to result in an offence to GCN being committed. Notwithstanding this, to ensure that impacts to individual GCN potentially utilising the site are minimised, it is recommended that a robust, detailed and bespoke working Method Statement should be applied outlining key reasonable avoidance measures (RAMs) and working protocols to be in effect during the proposed work schedule once confirmed. The recommended RAMs should be drafted by a suitably experienced and qualified GCN licenced Ecologist / Ecological Clerk of Works (ECoW). Upon gaining understanding of the details contained within the RAMs, the applicant and associated contract team would be expected to comply with the measures recommended within it. Given that the works will not entail woodland felling, particular note should be taken to any vegetation clearance, such as the removal of the invasives.
- 7.29 Any RAMs drafted should be subject to the approval of the local planning authority acting on the professional judgement of their ecological advisors - following approval, adherence to the terms of the RAMs would be a requirement of the named authority and the applicant would be the liable party, with the Ecologist / ECoW acting for and on behalf of the applicant.
- 7.30 The applicant and all contractors would be aware that if at any stage great crested newt (GCN) are encountered during works, or at any other stage of the work programme, works would be required to immediately cease and the Ecologist / ECoW be made aware as to provide further guidance if an Ecologist is not already present.

Wider herpetofauna

- 7.31 Given the habitats onsite and in proximity to the site, the presence of generalist amphibians onsite is considered likely.
- 7.32 To prevent impacting upon local populations of common frog and common toad it is recommended the RAMs outlined previous for mammals are extended to include such species.
- 7.33 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.

- 7.34 The habitats onsite are considered to offer some suitability for reptiles, and thus they cannot be conclusively ruled out from the site. As such, to minimise potential impacts to this taxon, it is recommended that the RAMs outlined previously should be extended to include reptiles.

Invertebrates

- 7.35 The site is not considered to be locally distinct for this species group and no specific intervention measures apply. Enhancement options have been presented in **Appendix III**.

8.0 Biodiversity Statement

- 8.1 Based on the information provided to the author, the Land off Leigh Lane is likely **exempt** from the Biodiversity Gain Planning Condition under the exemption “Self-build and custom housing”. The planned development is to the specifications of the proposed new occupants who will live there upon its completion.

9.0 Bibliography

- **Amphibian and Reptile Groups of the United Kingdom (ARG UK)**. 2010. *ARG UK Advice Note 5 - Great Crested Newt Habitat Suitability Index*.
- **Baker, J., Beebee, T., Buckley, J., Gent, T. and Orchard, D.** 2011. *Amphibian Habitat Management Handbook*. Amphibian & Reptile Conservation, Bournemouth.
- **Bat Conservation Trust (BCT)**, 2023. *Bats and Artificial Lighting at Night, Guidance Note GN08/23*. Available from: <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>
- **Beebee, T. & Griffiths, R.** 2000. *Amphibians and Reptiles*. Collins
- **British Standards Institution (BSI)**. 2012. *Trees in relation to design, demolition and construction - recommendations*. BS 5837:2012. ISBN 978 0 580 69917 7.
- **BSBI**, 2020. *BSBI Online Plant Atlas*. Available from: <https://plantatlas2020.org/atlas>
- **CIEEM**, 2018. *Guidelines for Ecological Impact Assessment in the UK and Ireland*, 2nd edition. Available from: www.cieem.net/data/files/Publications/EclA_Guidelines_Terrestrial_Freshwater_and_Coastal_Jan_2016.pdf
- **CIEEM**. 2020. *Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK*. 2nd Edition. Chartered Institute of Ecology and Environmental Management. Winchester, UK
- **CIEEM**, 2017. *Guidelines for Preliminary Ecological Appraisal*, 2nd edition. Available from: www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Jan2018_1.pdf
- **CIEEM**, 2019. *Biodiversity Net Gain: Good practice principles for development*. Available from: www.cieem.net/data/files/Publications/Biodiversity_Net_Gain_Principles.pdf
- **CIEEM**, 2019. *ON THE LIFESPAN OF ECOLOGICAL REPORTS & SURVEYS*. Available from: <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>
- **Collins, J (ed.)** 2023. *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edition). The Bat Conservation Trust, London.
- **Communities & Local Government (C&LG)**, 2023. *National Planning Policy Framework*. Available from: https://assets.publishing.service.gov.uk/media/65a11af7e8f5ec000f1f8c46/NPPF_December_2023.pdf
- **Dean, M., Strachen, R., Gow, D. and Andrews, R.**, 2016. *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series)*. The Mammal Society, London.
- **DEFRA**, 2018. *Net gain: Consultation Proposals*. Available from: https://consult.defra.gov.uk/land-use/net-gain/supporting_documents/netgainconsultationdocument.pdf
- **DEFRA**, 2022. *Keepers of time: ancient and native woodland and trees policy in England*. Available from: <https://www.gov.uk/government/publications/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england>
- **Drake, C. M., Lott, D. A., Alexander, K. N. A. and Webb, J.**, 2007. *Surveying terrestrial and freshwater invertebrates for conservation evaluation*. Natural England. Available from: <https://publications.naturalengland.org.uk/file/63016>
- **Edgar, P., Foster, J. and Baker, J.** 2010. *Reptile Habitat Management Handbook*. Amphibian & Reptile Conservation. Bournemouth.
- **English Nature**, 2001. *Great Crested Newt Guidelines*. Version Aug 2001.

- **English Nature**, 2006. The dormouse conservation handbook Second edition. Available from: <https://cieem.net/resource/the-dormouse-conservation-handbook-english-nature/>
- **Froglife**, 2015. *Surveying for reptiles*. Available from: <https://www.froglife.org/wp-content/uploads/2013/06/Reptile-survey-booklet-3mm-bleed.pdf>
- **Global Biodiversity Information Facility (GBIF)**, 2019. Available from: <https://www.gbif.org/>
- **GOV.UK**. 2015. *Reptiles: surveys and mitigation for development projects*. Available online www.gov.uk/guidance/reptiles-protection-surveys-and-licences.
- **Gunnell, K. Grant, G. and Williams, C.**, 2012. 'Landscape and urban design for bats and biodiversity'. Bat Conservation Trust.
- **Harris, J. E., Markwell, H. J., and Raybould, B. R.**, 2009. *A method for assessing water vole habitat suitability*. In Practice: Bulletin of the Institute of Ecology and Environmental Management. 65: 28 – 31.
- **Hodgetts, N.** 2011. *A revised Red List of bryophytes in Britain*. Field Bryology 103: 40-48.
- **Joint Nature Conservancy Council (JNCC)**, 2010. *Handbook for Phase 1 habitat survey*. Available from: http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitat survey.pdf
- **Magic Maps Application**, 2024. Available from: www.natureonthemap.naturalengland.org.uk/MagicMap.aspx
- **Mitchell-Jones, A. J. (ed.)**, 1987. *The bat worker's manual*. Dept. BWM, Nature Conservancy Council, Northminster House, Peterborough, PE1 1UA
- **Natural England**, 2015. *Great Crested Newts: Surveys and mitigation for developments and projects*. Available from: <https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects>.
- **North West Biodiversity Audit Group (NWBAG)**, 1999. *A biodiversity audit of north-west England*.
- **Oldham R.S.; Keeble J.; Swan M.J.S.; Jeffcote M.**, 2000. *Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus)*. Herpetological Journal 10 (4), 143-155.
- **Reason, P.F. & Wray, S.** 2023. *UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats*. Chartered Institute of Ecology and Environmental Management, Ampfield
- **Rose, F**, 1999. *Indicators of ancient woodland: The use of vascular plants in evaluating ancient woods for nature conservation*. Available from: <http://pad.basingstoke.gov.uk/documents/4753/01/02/76/01027625.PDF>
- **Sewell, D., Griffiths, R. A., Beebee, T. J., Foster, J., and Wilkinson, J. W.**, 2013. *Survey protocols for the British herpetofauna*. Available from: http://www.narrs.org.uk/documents/Survey_protocols_for_the_British_herpetofauna.pdf
- **Stace, C.** 2019. *New Flora of the British Isles*, 4th edition. Cambridge University Press, The Edinburgh Building, Cambridge, CB2 2RU.
- **Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., Win, I.**, 2021. *The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain*, British Birds 114, 723 – 747.
- **Strachen, R; Moorhouse. T.**, 2011. *The Water Vole Conservation Handbook*, 3rd ed. Wildlife Conservation Research Unit, University of Oxford.
- **Stroh. P. A; Leach. S. J; August. T. A; Walker. T. J; Pearman. D. A; Rumsey. F. J; Harrower. C. A; Fay. M. F; Martin. J. P; Pankhurst. T; Preston. C. D; Taylor. I.**, 2014. *A Vascular Plant Red-List for England*, 2nd edition. Trollius Publications.

- UKHab Ltd., 2023. *UK Habitat Classification Version 2.0*. Available from: <https://ukhab.org/>

Appendix I: Site Photographs



Plate 1 – *General character of the woodland understorey onsite, with rhododendron INNS*



Plate 2 – *Dense stands of Japanese knotweed INNS*



Plate 3 – *Further character of woodland, with limited understorey*



Plate 4 – *Character of grassland at south of site*



Plate 5 – *Deadwood within woodland*



Plate 6 – *Elton Brook to south of site*



Plate 7 – *Refugia within grassland parcel*



Plate 8 – *Dead stands of Himalayan balsam INNS*



Plate 9 – *Inundated area to south-west*



Plate 10 – *Character of P1*



Plate 11 – *Dense ivy-covered nature of T1*



Plate 12 – *PRF located to south of T2*



Plate 13 – *Veteran character of T3*



Plate 14 – *Character of P2*



Plate 15 – *Further view of P2*



Plate 16 – *Character of P3 reservoir*



Plate 17 – *Central area of woodland*



Plate 18 – *Closer view of area of Japanese knotweed INNS*



Plate 19 – *Dead stands of Himalayan balsam INNS within grassland parcel*



Plate 20 – *Eastern area of woodland*



Plate 21 – *Character of woodland area where building will be placed*



Plate 22 – *Southern boundary of site along Elton Brook*

Appendix II: 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	Bamboo	Bambusoideae sp.
	Beech	<i>Fagus sylvatica</i>
	Bramble	<i>Rubus fruticosus</i> agg.
	Broad-leaved dock	<i>Rumex obtusifolius</i>
	Cherry laurel	<i>Prunus laurocerasus</i>
	Common figwort	<i>Scrophularia nodosa</i>
	Common ivy	<i>Hedera helix</i>
	Common nettle	<i>Urtica dioica</i>
	Creeping bent	<i>Agrostis stolonifera</i>
	Creeping buttercup	<i>Ranunculus repens</i>
	Creeping soft-grass	<i>Holcus mollis</i>
	Curled dock	<i>Rumex crispus</i>
	False oat-grass	<i>Arrhenatherum elatius</i>
	Foxglove	<i>Digitalis purpurea</i>
	Hazel	<i>Corylus avellana</i>
	Herb-Robert	<i>Geranium robertianum</i>
	Himalayan balsam INNS	<i>Impatiens glandulifera</i>
	Holly	<i>Ilex aquifolium</i>
	Japanese knotweed INNS	<i>Reynoutria japonica</i>
	Meadow buttercup	<i>Ranunculus acris</i>
	Pedunculate oak	<i>Quercus robur</i>
	Pendulous sedge	<i>Carex pendula</i>
	Reed canary-grass	<i>Phalaris arundinacea</i>
	Rhododendron INNS	<i>Rhododendron ponticum</i>
	Silver birch	<i>Betula pendula</i>
	Soft-rush	<i>Juncus effusus</i>
	Sweet chestnut	<i>Castanea sativa</i>
	Sycamore	<i>Acer pseudoplatanus</i>
	Wood avens	<i>Geum urbanum</i>
	Wych elm	<i>Ulmus glabra</i>
	Yorkshire-fog	<i>Holcus lanatus</i>
Pinophyta	Cypress sp.	<i>Cupressus</i> sp.
	Scot's pine	<i>Pinus sylvestris</i>
	Yew	<i>Taxus baccata</i>
Polypodiopsida	Broad buckler-fern	<i>Dryopteris dilatata</i>
	Male fern	<i>Dryopteris filix-mas</i>

Appendix III: Biodiversity Enhancement: General Recommendations

Breeding Birds – House Sparrow

The sparrow terrace has been designed to help redress the balance of falling house sparrow numbers. The current UK population is now half of what it previously was in 1980 and this is widely attributed to habitat destruction and lack of suitable nesting spaces. House sparrows are social birds and like to nest in company, therefore, this terrace provides ideal nesting opportunities for three families. The terrace can be fixed on to the surface of a suitable wall or incorporated into the wall. It is suitable for all types of buildings.



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)

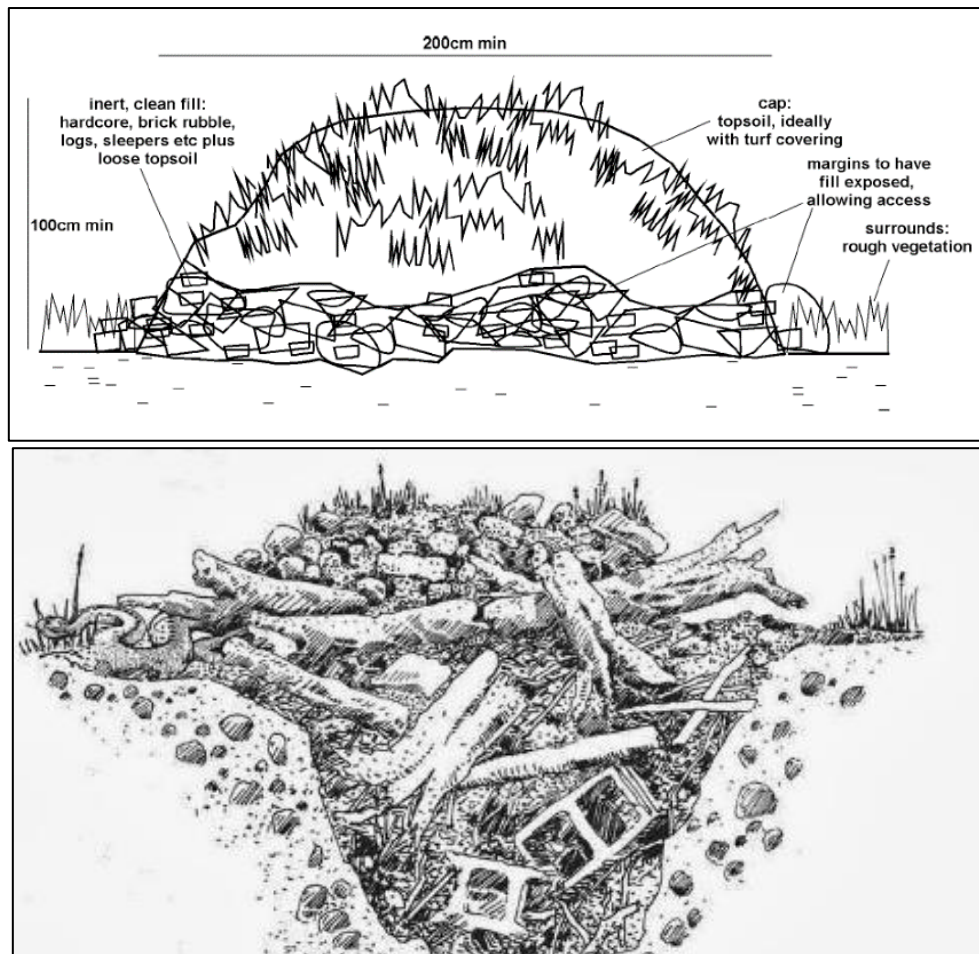
How to make your hibernaculum yourself:

- 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

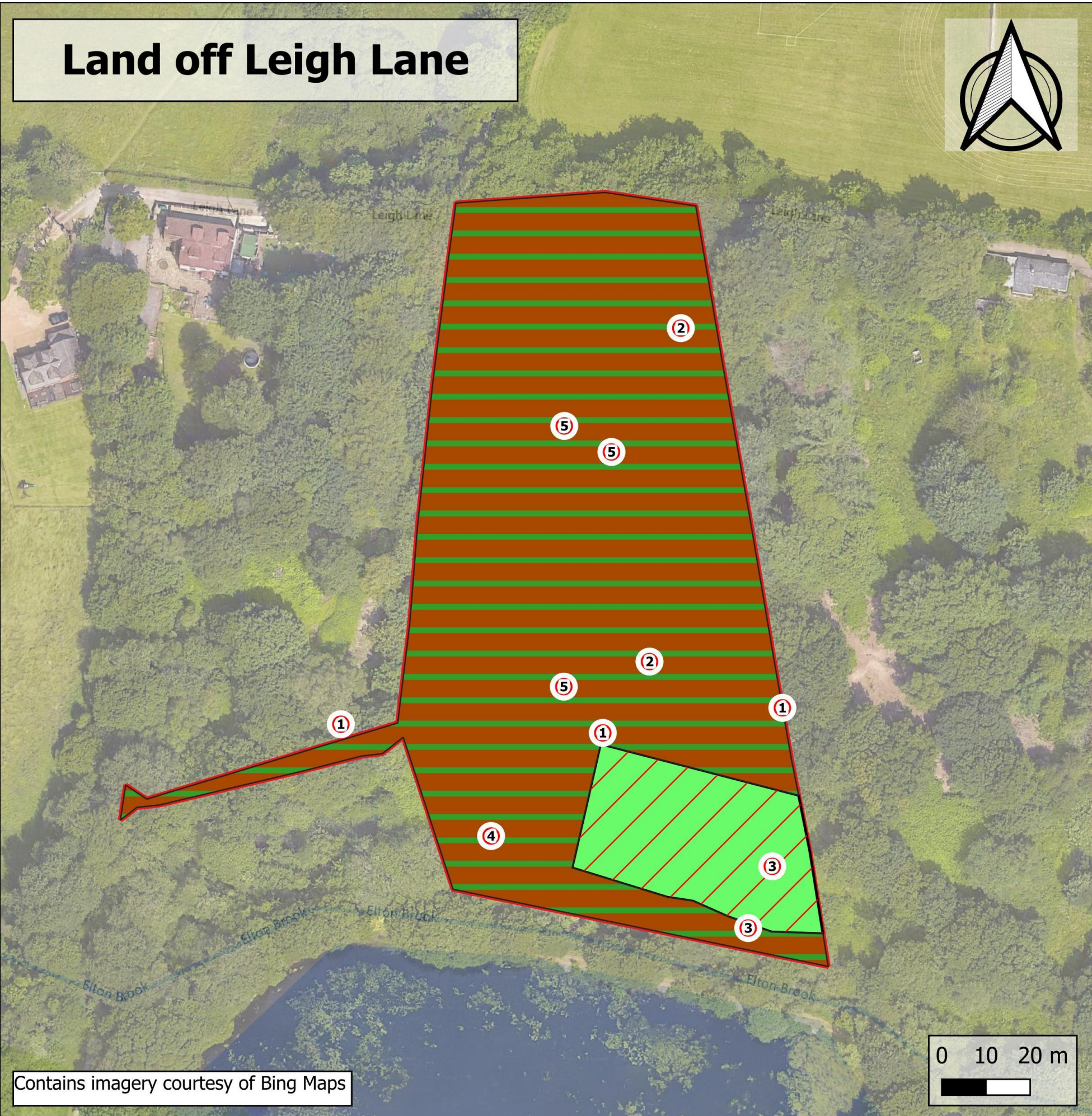
- * Material: Concrete
- * Dimensions: W 215mm x D 105mm x H 65mm
- * Weight: 2.9kg
- * Colours: White grey, yellow, dark grey and red

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.

Land off Leigh Lane, Bury, BL8 1RL
Preliminary Ecological Appraisal

	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>	-
	Gelder 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>	-





Tyrer Ecological Consultants Ltd
Specialists in Protected Species

UK Habitats Key

 Target note

 g4 - Modified grassland
- 14, 32, 503, 524

 w1f7 - Other lowland mixed deciduous woodland - 30, 213, 214, 505, 524

 Boundary

Target notes:

- 1. Location of Japanese knotweed
- 2. Location of rhododendron
- 3. Location of Himalayan balsam
- 4. Location of inundated area
- 5. Location of trees with PRFs

Secondary Codes:

- 14 - Scattered rushes
- 30 - Semi-natural woodland
- 32 - Scattered trees
- 213 - Complex woody structure
- 214 - Fallen dead wood abundant
- 503 - Wet
- 505 - Inundation vegetation
- 524 - Invasive non-native species

Survey Date: 18/11/2024
Drawn: Mr. H. Mulligan
Date Drawn: 17/12/2024
Checked & Approved: Mrs. K. Wilding
Size: A3
Scale: 1:1200

Tyrer Ecological Consultants Ltd
Roselands, Suite 1,
3 Cross Green,
Formby,
L37 4BH
Tel: 01704 875781
Email: enquiries@tyrer-ecologicalconsultants.co.uk
www.tyrer-ecologicalconsultants.co.uk