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Preliminary Ecological Appraisal

November 2022

Wheathill

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Executive Summary

As part of a proposed planning application at Wheathill, Liverpool, Tyrer Ecological Consultants Ltd carried out a Preliminary Ecological Appraisal (PEA) in August 2022.

The PEA was commissioned by MSA Architects; the exact route upon which the proposals will advance are unknown, but it is understood that there are currently two options, with one entailing the construction of five individual 1.5 and single storey buildings, whilst another proposes the erection of two contemporary bungalows.

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

Recommended following PEA:

- **Invasive Species:** No Schedule 9 (WCA) INNS were recorded on the site.
- **Bats:** Based upon the findings of the survey, covered through sections 6.0 – 7.0 of the report and supported by Appendix I, both of the buildings at Wheathill are determined to offer '**Negligible**' bat roost potential in accordance with Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016).

Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.		
Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.

No further surveys are recommended in relation to bats, though general enhancement measures are recommended in Appendix III.

- **Breeding Birds:** Feral pigeon were observed utilising building B1 for breeding purposes. Given the field signs, Feral Pigeon breeding presence may need to be addressed from a pest control point of view as breeding habits in relation to this species are atypical of other bird species and can last throughout the year. A General Licence is therefore likely to be necessary to legally control the species. From 1 January 2021, you must follow the conditions of general licence GL41 to control certain target birds for the purposes of preserving public health or public safety.

For further information on General Licencing see - [Wild birds: licence to kill or take for public health or safety \(GL41\) - GOV.UK \(www.gov.uk\)](#).

In relation to common birds, the buildings, tree lines and the vegetation present offer small birds a plethora of nesting opportunities, particularly during the breeding bird season.

Given that all birds are protected when at the nest, it is therefore recommended that any demolition, tree felling / pruning and vegetation clearance works on site are carried out outside of the breeding bird season (March – August inclusive). For works undertaken within the breeding bird season, any areas that can support nesting birds such as the buildings, dense scrub and woodland should be checked by a professional Ecologist for nesting birds within 48 hours or less prior to works commencing. Where/if active nests are 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.

- **Badger:** Despite the wider environment providing some suitability for Badger, the immediate habitat is entirely unsuitable for this species. Furthermore, no evidence of usage of the site by this species was observed during the survey and the presence of Badger is considered extremely unlikely. Impacts to Badger from the proposed works can therefore be ruled out.
- **Hedgehog:** Hedgehog are highly likely to use the site for hibernation, shelter, foraging and commuting. The proposals pose a risk of injury and disturbance impacts.

Therefore, a programme of Reasonable Avoidance Measures (RAMs) should be undertaken and carried out at the site during development, particularly where excavations / trenches will be made. Further details can be found in section 8.0.

- **GCN:** Having carefully considered the results derived, the risk of impacts to Great Crested Newts can be ruled out, and their presence within the application site is considered to be highly unlikely.
- **Wider herpetofauna:** A an appropriate Method Statement is created by a suitably qualified Ecologist/Ecological Clerk of Works (ECoW), detailing a list of Reasonable Avoidance Measures (RAMs) to prevent risk to these species.

This should encompass generalist amphibians such Common Frog and Common Toad as a whole as well as reptiles, with the presence of both of these groups on the site unable to be ruled out.

- **Enhancement for Biodiversity:** The site offers potential for a number of protected species groups, therefore a programme of biodiversity enhancement is recommended to be implemented into the proposed development. General measures can be found below, in accordance with the principles of 'Biodiversity Net Gain: Good practice principles for development' (CIEEM et. al., 2019).

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1.0 Introduction & Scope

- 1.1 As part of a proposed planning application at Wheathill, Liverpool, Tyrer Ecological Consultants Ltd carried out a Preliminary Ecological Appraisal (PEA) in August 2022. See Figure 1.1 below for an existing location plan.

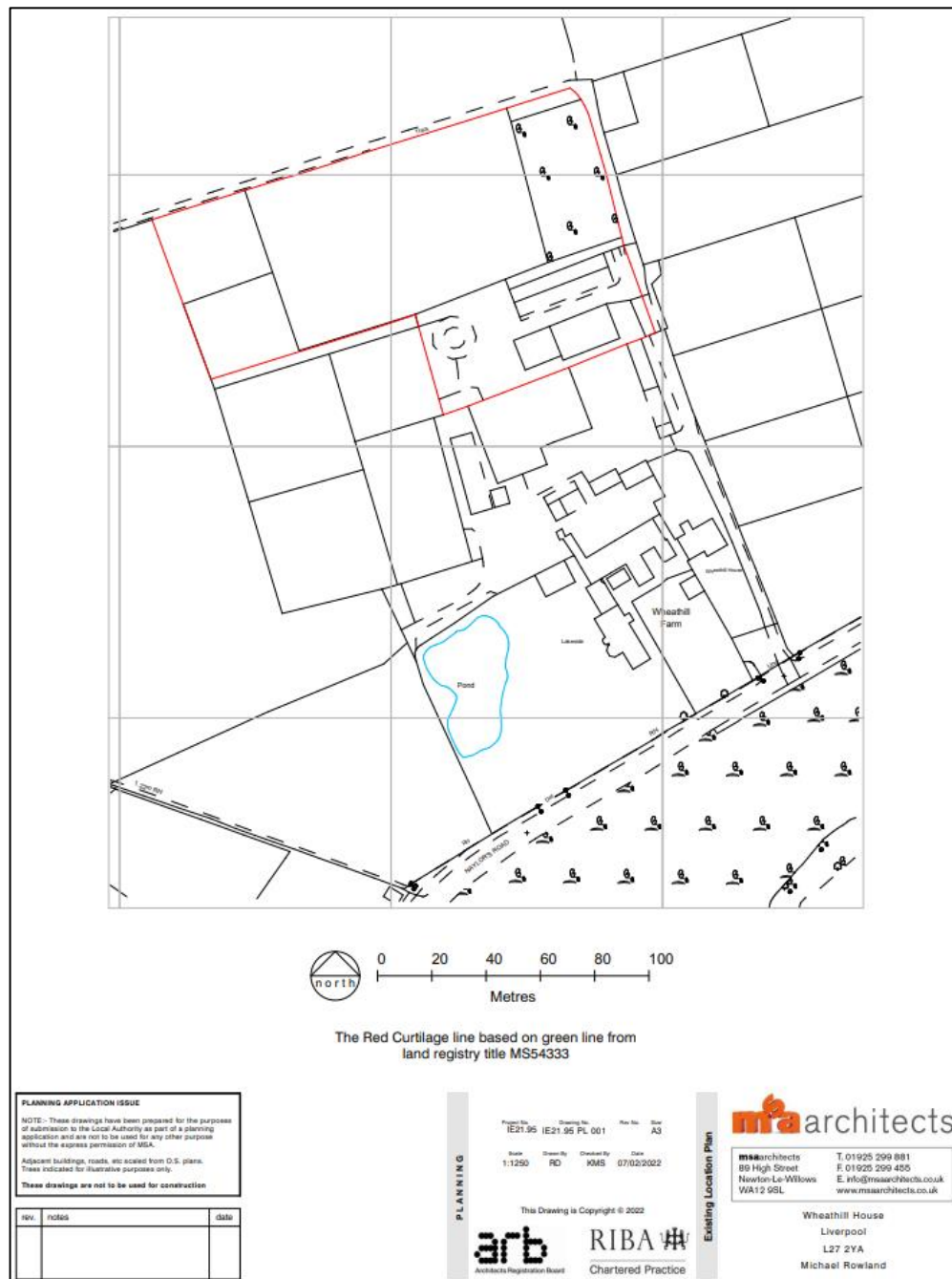


Figure 1.1 – The existing location plan (© MSA Architects)

- 1.2 The PEA was commissioned by MSA Architects; the exact route upon which the proposals will advance are unknown, but it is understood that there are currently two options, with one entailing the construction of five individual 1.5 and single storey buildings, whilst another proposes the erection of two contemporary bungalows.

- 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, that could be affected by the proposals for which the application seeks consent.
- 1.4 The PEA was carried out in accordance with the '*Guidelines for Preliminary Ecological Appraisal, 2nd Edition*' (CIEEM, 2017) and all site associated '*CIEEM Competencies for Species Survey (CSS)*', whilst this report has been presented in accordance with the British Standard 42020:2013.

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 1.1 (2020) 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 additional survey requirements,
 - Aim to achieve no 'net loss' of habitat biodiversity units,
 - Identify enhancement opportunities for biodiversity in line with national and local planning policy following 'Biodiversity Net Gain: Good practice principles for development' (CIEEM et. al., 2019),
 - 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 1.1 (2020);
 - Buildings and trees, where present, were subject to preliminary roost assessment (PRA) for Bats and scored against the bat roost suitability parameters defined in the Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016).
- 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 on 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 Local Planning Authorities (LPA's) 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:
- Conservation of Habitats and Species Regulations (amendment) (2019) (EU Exit),
 - Wildlife and Countryside Act (1981) (as amended),
 - Countryside Rights of Way (CROW) Act (2000),
 - Natural Environment and Rural Communities (NERC) Act (2006),
 - Protection of Badgers Act (1992),
 - The Hedgerow Regulations (1997),
 - Town and Country Planning Act (1990),
 - Wild Mammals Protection Act (1996).
- 2.2 These acts entail relevance to both protected and invasive species. The degree of protection offered to taxa provided within existing UK and EU legislature often varies depending on species/group, for example, some species may purely be protected during one of its life stages (e.g. common species of breeding bird whilst nesting/with eggs/young); some species may receive full protection within the EU, 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)	<u>Illegal to:</u> Wilfully kill, injure or take a badger (or attempt to do so). Cruelly ill-eradicate a badger.

		Dig for a badger. Intentionally or recklessly damage or destroy a badger sett or obstruct access to it. Cause a dog to enter a badger sett. Disturb a badger when it is occupying a sett.
Bats	CRoW Act (2000) Conservation of Habitats and Species Regulations (2019) (EU Exit) Wildlife and Countryside Act (1981) (as amended)	All British bats and their roosts are afforded full protection from damage/destruction and bats may not be injured/killed/taken at any life stage. Once identified, roosts are protected whether the bat is in occupation or not.
Birds (Breeding)	CRoW Act (2000) Wildlife and Countryside Act (1981) (as amended)	All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected. Birds listed on Schedule 1 Wildlife & Countryside Act (1981) (as amended) are afforded a greater level of protection.
Great Crested Newt (GCN)	CRoW Act (2000) Conservation of Habitats and Species Regulations (2019) (EU Exit) 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)	Species listed within Schedule 9 as invasive, including Japanese Knotweed (<i>Reynoutria japonica</i>) and Himalayan Balsam (<i>Impatiens glandulifera</i>), for example, carry notoriety regarding development. The Act makes it an offence for any person to grow or cause to grow in the wild any plants listed as invasive.
Reptiles	Conservation of Habitats and Species Regulations (2019) (EU Exit) - SL/SS Wildlife and Countryside Act (1981) (as amended) - SL/SS 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 (SL) and smooth snake (SS) are species of principal importance however with greater protection(s).

Relevant Policy

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

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

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

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

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

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

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

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

- 2.6 Policy GI 6 of the Liverpool Local Plan 2013 – 2033 (Adopted 2022), titled Protection of Biodiversity and Geodiversity, echoes the national focus on preserving areas important for nature conservation, and states:

"1. Development which may result in a likely significant effect on an internationally important site must be accompanied by sufficient evidence to enable the Council to make a Habitats Regulations Assessment. Adverse effects should be avoided and/or mitigated to ensure that the integrity of internationally important sites is protected. Development which may adversely affect the integrity of internationally important sites will only be permitted where there are no alternative solutions and there are imperative reasons of overriding public interest and suitable compensatory provision is secured. This also applies to sites and habitats outside the designated boundaries that support species listed as being important in the designations of the internationally important sites.

2. Development which may cause direct or indirect significant harm to other designated sites of nature or geological conservation importance, Priority Habitats, legally protected species and / or Priority Species will only be permitted on:

- a. *National sites (Mersey Estuary Site of Special Scientific Interest (SSSI)): where there are no alternatives and where the benefits of development clearly outweigh the impact on the features of the site that make it of special scientific interest, and its broader contribution to the national network;*
 - b. *Local Sites (Local Nature Reserves (LNRs), Local Wildlife Site (LWS) and Regionally Important Geological/Geomorphological Sites (RIGS): where the reasons for and the benefits of development clearly outweigh the impact on the nature conservation value of the site and its broader contribution to the Liverpool City Region (LCR) Ecological Network;*
 - c. *Sites including Priority Habitats/ Irreplaceable habitats (including ancient woodlands and aged or veteran trees) where there are wholly exceptional reasons and a suitable compensation strategy exists.*
3. *Where it has been demonstrated that significant harm cannot be avoided, appropriate mitigation, replacement or other compensatory provision may be required.*
4. *Where significant harm resulting from development cannot be avoided, adequately mitigated or, as a last resort, compensated, then planning permission will be refused.*
5. *Development proposals which affect sites of nature conservation importance, Priority Habitats, legally protected species or Priority Species must be supported by an Ecological Appraisal and include details of avoidance, mitigation and /or compensation where appropriate.*
6. *The policy applies where development proposals in Liverpool may directly or indirectly affect sites with known conservation value in a neighbouring authority area.*
7. *This policy will apply to other sites recognised during the Plan period as being of nature conservation importance, including land provided as compensation."*

3.0 Priority Habitats & Species

National Context

- 3.1 In the United Kingdom, legal protection and otherwise legislative recognition is afforded to particular habitats and species. Certain habitats and species are considered to hold nature conservation importance and are thus protected, due to factors such as their ecological functionality, connectivity, rarity, their vulnerability, environmental importance, or declining population/status. They are referred to as priority habitats and priority species.
- 3.2 The UK Biodiversity Action Plan (UKBAP) provided a statutory basis for lists of habitats and species of national conservation importance - now transposed under Section 41 (s.41) of the Natural Environment Rural Communities Act 2006 (NERC Act).
- 3.3 The following Section 41: Habitats of Principal Importance in England and Section 41: Species of Principal Importance in England are considered potentially relevant to the appraisal:

Habitats:

- Hedgerows.

Species:

- **Bats:** Brown Long-eared (*Plecotus auritus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Common Pipistrelle (*Pipistrellus pipistrellus*), Noctule (*Nyctalus noctula*) for e.g.,
- **s.41 bird species** that include but not limited to: Bullfinch (*Pyrrhula pyrrhula*), Grey Partridge (*Perdix perdix*), House Sparrow (*Passer domesticus*), Linnet (*Carduelis cannabina*), Song Thrush (*Turdus philomelos*), Starling (*Sturnus vulgaris*), Tree Sparrow (*Passer montanus*), Willow Tit (*Poecile montanus*) for e.g.,
- **Land mammals** that include: Hedgehog (*Erinaceus europaeus*) for e.g.,
- **Herpetofauna** that includes: Great Crested Newt (GCN) (*Triturus cristatus*), Slow-worm (*Anguis fragilis*), Common Toad (*Bufo bufo*), Common Lizard (*Zootoca vivipara*), for e.g.,
- **Botanical species** that includes Purple ramping-fumitory (*Fumaria purpurea*), Bluebell (*Hyacinthoides non-scripta*), Cornflower (*Centaurea cyanus*) for e.g.

Regional Context

- 3.4 Local Biodiversity Action Plans (LBAP's) are a way of encouraging people to work together to deliver a program of continuing action for biodiversity at a local level. LBAPs also embrace the idea of 'local distinctiveness'; habitats and species which are not considered UK conservation priorities can be catered for by LBAPs if they are of particular local significance.
- 3.5 LBAP's set out practical steps that aim to:
- Help protect biodiversity;
 - Enhance and improve biodiversity where possible, and,
 - Promote biodiversity at a local level.
- 3.6 The North Merseyside Biodiversity Action Plan (NMBAP) outlines key local habitats/species considered to be rare or declining in the area; some may be of national concern while others are significant at local level. Some are partially or completely covered by Habitat Action Plans (HAPS), whilst others are covered by Species Action Plans (SAPS). In addition to the national priority habitats and species above, potential presence / impacts for the following local plans was also considered as part of this study.
- Bats;
 - Song Thrush;
 - Swift;
 - Urban birds.

4.0 Methodology

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

Desktop Study

- 4.2 Prior to a site visit a desktop study was conducted using online resources to obtain information pertaining to any sites afforded statutory (e.g. SSSI) and non-statutory (e.g. LWS) designations within 2.0 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.

- 4.3 Historic satellite imagery was reviewed using sources such as Google Earth (© 2021/22) to help establish past use of the land and determine the nature of adjoining and extending habitats; such information aids in the understanding of how the site might interact with its surroundings ecologically and its value in that context, and how the development may impact at a wider scale.
- 4.4 In addition, the Council Planning Portal 'Search for planning applications' function was utilised to help inform the desktop study by analysis of existing publicly accessible ecological survey results that have been carried out locally within the previous five years.
- 4.5 A commercial data request to the Local Environment Records Centre serving the area, in this case Merseyside BioBank, has not been sourced at this time, with the combination of online EPSML data, extensive company records and the daytime survey data available to the ecologist considered to contain enough information in relation to the protected species likely to be present on site.

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

"It is generally expected that a desk study, including a data search, will be a key part of the ecological surveys or reports produced to inform a planning application. Freely available web-based sources of data and contextual information should always be used; in some cases, it may be acceptable to not undertake a data search with the LERC or other relevant NSS or local interest groups, for example:

ii) Situations where the data search would be extremely unlikely to provide information needed to inform the assessment, due to the scale and location of the proposed development. The appropriateness of excluding a data search will need to be judged on a case-by-case basis as, in most situations, it will be essential to carry out such a search even if the development is very small or is likely to have a low impact. It can be very difficult to demonstrate that a data search would not have provided relevant information without obtaining and reviewing those data.

iii) In some cases for Preliminary Roost Assessments of buildings in low impact / small-scale scenarios, such as an extension to a residential property, loft conversions (full or partial), installation of Velux/dormer windows, single modern agricultural or similar building conversion or demolition; however, it should not be assumed that data searches are never required for such scenarios and this must be judged on a case by case basis and justified accordingly."

2) The Guidelines for Preliminary Ecological Appraisal, 2nd Edition (CIEEM, 2017) also states:

*"Very occasionally it might be possible to carry out a robust PEA without obtaining LERC/NBDC/CEDaR data; this will usually only apply to **low impact or small-scale projects** (e.g. by virtue of size, extent, duration of works, magnitude and locality), and should be determined on a case-by-case basis."*

Field Survey

- 4.6 A daytime preliminary ecological appraisal was conducted on the 15th August 2022 in sunny, dry conditions (19°C), average wind 1/12 (Beaufort scale), average 100% cloud cover, by the following surveyor (see Table 4.1).

Table 4.1 – Site Surveyor credentials

Name	Description of most relevant credentials
Mr. B. Richards Qualifying CIEEM (Junior Ecologist)	- Junior Ecologist with a range of training and experience, - MBiolSci in Biological Sciences (Zoology), - Qualifying CIEEM, - Accredited agent on the Natural England Great Crested Newt: CL08 Class 1 licence (2018-34062-CLS-CLS) of Mr. M. Pritchard.

Floristic assessment

- 4.7 The survey followed the UK Habitat Classification Version 1.1 (Butcher, et.al., 2020) being introduced as part of the roll out of Biodiversity Net-gain with reference to the Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Methodology standards (JNCC, 2010) and reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Technical Guidance Series “*Guidelines for Preliminary Ecological Appraisal, 2nd Edition*” (CIEEM, 2017).
- 4.8 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 (amendment) (EU exit) Regulations (2019). Species nomenclature follows Stace, C. (2019) – definitive English names.
- 4.9 Additional to attributing ecological value to red-listed / BAP species, in accordance with existing CIEEM guidance, a geographic frame of reference is also adopted. Plant species and habitats may be recognised for their ecological value on a geographical scale which is adopted on a site-to-site basis (see Figure 4.1). For botanical species list compiled in full, see Appendix II.
- 4.10 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).

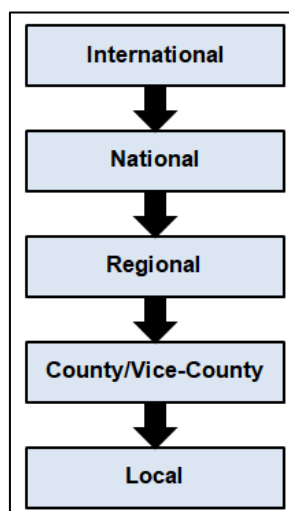


Figure 4.1 – Geographic Frame of Reference entailing degrees of conservation importance

Faunal assessment

- 4.11 During site walkover, the identification and/or evidence of priority fauna encountered was documented, whilst in tandem the area was assessed for the potential to support the priority species in section 3.0. The walkover also aimed to identify any ephemeral pools or unmapped waterbodies.

Bats

- 4.12 The site was assessed for bats; buildings, where present, would be inspected for potential places that may be of value to bats and to determine evidence of use. This typically involves a search for potential roost features (PRF) both internally (investigation of loft spaces/upper floors/internal elevations) as well as externally, comprising an investigation of features (roof material, building components) using a high-powered torch. Field signs of bats typically comprise bat droppings, incidental animal presence, dead specimens and/or prey items. The surrounding habitat was also considered in terms of general suitability.
- 4.13 Trees (where present) would be inspected for places that may be of value to bats and to determine if evidence of use was present; this typically involves a search for potential roost features along with an investigation of those features using a high-powered torch or close focus binoculars. Potential roost features 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 Ivy with stem diameters in excess of 50mm or bat/bird boxes.
- 4.14 Criteria for preliminary bat roost assessment are based upon the determinants given in the Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016): (see Figure 4.2).

Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.		
Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^a and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation ^b). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential. ^c	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ^a and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ^a and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

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

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

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

Figure 4.2 – Bat Conservation Trust (BCT) guidelines extract

4.15 Factors considered during the preliminary roost assessment include:

- Knowledge of bat species relevant to the site location and geographical range,
- Nature of the immediate / surrounding habitat in relation to foraging opportunities,
- Presence and conditions of loft spaces, upper floors, roof linings,
- Presence / absence of roost potential,
- Value and types of roost potential, if present (i.e. - maternity, hibernation, transition).

Breeding Birds

4.16 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 the ground. 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:

- 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.

4.17 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

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

Great Crested Newt (GCN)

4.19 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 Newts (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.*

4.20 Following current best practice considering the national 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.

- 4.21 Based on the desk study, using Google Earth Pro 2021/22, MAGiC Maps 2022 as well as Ordnance Survey (OS) map data, five standing water bodies were identified in the 250 metre radial buffer of the site. Four of these ponds were investigated and were subsequently found to be completely dry, with the only extant pond situated approximately 95 metres to the south-west of the site boundary. This was not assessed due to its location on a separate active development site; however, it has been previously assessed as a part of the application prior to the said development. Results from the previous survey will be mentioned in section 7.0.

Reptiles

- 4.22 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 Lizards (*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 similar habitats to Common Lizards, and are often found in rank grassland, gardens and derelict land under refugia,
- 4.23 In assessment of a site for reptiles several important habitat characteristics are considered, outlined in Table 4.2 below, as derived from the *Reptile Habitat Management Handbook* (Edgar, 2010).

Table 4.2 – 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

- 4.24 The application 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.
- 4.25 The results, conclusions and recommendations of this report are based on a number of factors i.e.
- Skills and experience of the surveyor,
 - Knowledge of flora and fauna relevant to the site location and geographical range,

- Nature of the immediate and surrounding habitat in relation to shelter, foraging and commuting opportunities.

4.26 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. Richards.

5.0 Limitations

- 5.1 This report does not contain a comprehensive list entailing the totality of botanical taxa on site. Species listed within Appendix II are recorded from a combination of the seasonal timing that the survey took place and botanical identification skills of the surveyor. Many plant species are only evident at certain times of the year; consequently, it is possible that some plant species may have gone undetected.
- 5.2 The optimal time of the year to carry out a preliminary ecological appraisal / UK Habitats survey is April to October; therefore, the survey was undertaken within the optimal period.
- 5.3 The survey took place within the typical bat and bird 'active / breeding' seasons; the probability of detecting the presence of either of these taxa was, therefore, maximised in this period, and survey timing is not considered a constraint regarding these taxa.
- 5.4 One pond within 250 metres of the site was unable to be accessed by the surveyor due to its present on privately owned land currently under development. However, as previously mentioned, this pond has been surveyed for GCN as recently as 2020, and therefore the lack of access to said pond is not determined to be a significant constraint.
- 5.5 In considering all possible survey constraints, no significant limitations were experienced that might adversely influence the results, conclusions, and recommendations of this report.

6.0 Desk Study Results

- 6.1 The application site can be broadly described as several buildings set on hardstanding, part of which is sealed and part of which is unsealed, with an approximate area totalling 0.29 hectares. The area to the north of the proposed development site, which is not a part of this application, is constituted of a large expanse of other neutral grassland observed to have previously grazed but with some evidence of recent lack of management by either livestock or by machine. The site is located to the north of Naylor's Road along a small access track, circa 9.59 kilometres east of Liverpool city centre (see Figure 6.1 overleaf). The total area of the site under blue line ownership is approximately 1.31 hectares.



Figure 6.1 – Location of the application site (red boundary) and the blue line ownership within the landscape (Source: Google Earth Pro 2021/22)

- 6.2 More specifically, the site is host to two structures, a large modern-agricultural style barn and a heavily damaged structure noted to be an 'exercise arena' on the plans, with horses understood to have been kept on the site in the past. The site is bordered by a built linear feature to the west and south, whilst a line of trees runs horizontally from the eastern border. The majority of the area habitat is made up of hardstanding, both sealed and unsealed, with vegetation encroaching from the paddock area to the north of the proposed development. The northern section of the site, under the blue line ownership but not within the red line boundary of this current application, is constituted of large expanses of other neutral grassland, previously utilised as a grazing pasture for horses, with dense bramble scrub to the north of the pasture and a line of trees bordering the northern and eastern edge of the blue line ownership.

- 6.3 The immediate habitat is part sub-urban and part semi-rural in nature, with typical infrastructure associated with the former found to the south and north of the site, including the M62 motorway, which passes at a distance of 0.20 kilometres to the north, alongside large areas of residential development served by a variety of amenities. Lakeside School is located directly adjacent to the south of the application site, with large scale development works in progress here at the time of the survey. Semi-natural habitats are somewhat limited in the immediacy, with expanses of open agricultural land to the east and west of the site, as well as pockets of Priority Habitat Inventory – Deciduous woodland dotted around the landscape. Linear habitats are present in the form of hedgerows and tree lines which border agricultural fields and amenity gardens in the immediate habitat.
- 6.4 The extending environment is consistent with that of the immediate, with further areas of urbanisation to the north and south, with built up areas positioned largely along the M62 which serves as the principal transport route in the area. The neighbourhoods of Belle Vale, Netherley, Huyton and Roby can all be considered to be within the wider landscape, and are linked to the site via the aforementioned Naylor's Road as well as the B5178 Childwall Valley Road and the A5080 Tarbock Road. The Liverpool – Wigan railway line is also present, running east – west parallel to the motorway approximately 1.75 kilometres north of the application site. Semi-natural habitats are again limited in the contiguous landscape, with the only priority habitats of note being consistent with that of the immediate, with small areas of deciduous woodland found to all compass directions, alongside a small area of ancient & semi-natural woodland which can be found to the east of the application site, within The Old Wood.
- 6.5 Site-surrounding environs offer reasonable levels of connectivity between the application site and the surrounding semi-natural habitats, with ecological frameworks benefitting a variety of protected species groups, particularly flying animals such as bats and birds associated with sub-urban and rural settings, for example the Common Pipistrelle (*Pipistrellus pipistrellus*) bat, commonly linked with roosting in buildings set in sub-urban environments, and Brown Long-eared bats (*Plecotus auritus*), which are commonly associated with woodland and more semi-natural environs, alongside terrestrial mammals which commonly utilise woodland and hedgerows, for example Hedgehog.
- NB:** *Where quality habitat is present close to buildings then the percentage use of those buildings, by bats, increases given that roost opportunities are available and vice versa.*
- 6.6 There is one statutory designated site for nature conservation within 2.0 kilometres of the application site (see Table 6.1 below):

Table 6.1 – Statutory designation types and reasons for designation within a 2.0-kilometre buffer

Site name	Designation type	Interest features
Childwall Wood and Fields (1.93 kilometres south-west)	Local Nature Reserve (LNR)	A 27.44 hectare site within the Liverpool City Council administrative region, with habitats present including neutral grassland and broadleaved woodland. These habitats are host to a variety of butterflies, as well as native Bluebell (<i>Hyacinthoides non-scripta</i>), Linnet (<i>Carduelis cannabina</i>) and Siskin (<i>Carduelis spinus</i>). Within Childwall Woods the old carriage drive is designated as a Regionally Important Geological Site for its exposed sandstone faces.

- 6.7 During the 2022 appraisal, no ponds were scored using the industry standard HSI assessment tool, with reasoning outlined in section 5.0.

Notable species records

- 6.8 An online search of MAGiC maps revealed that no European Protected Species Mitigation Licences (EPSMLs) have been granted within a 2.0 kilometres radius of the application site.

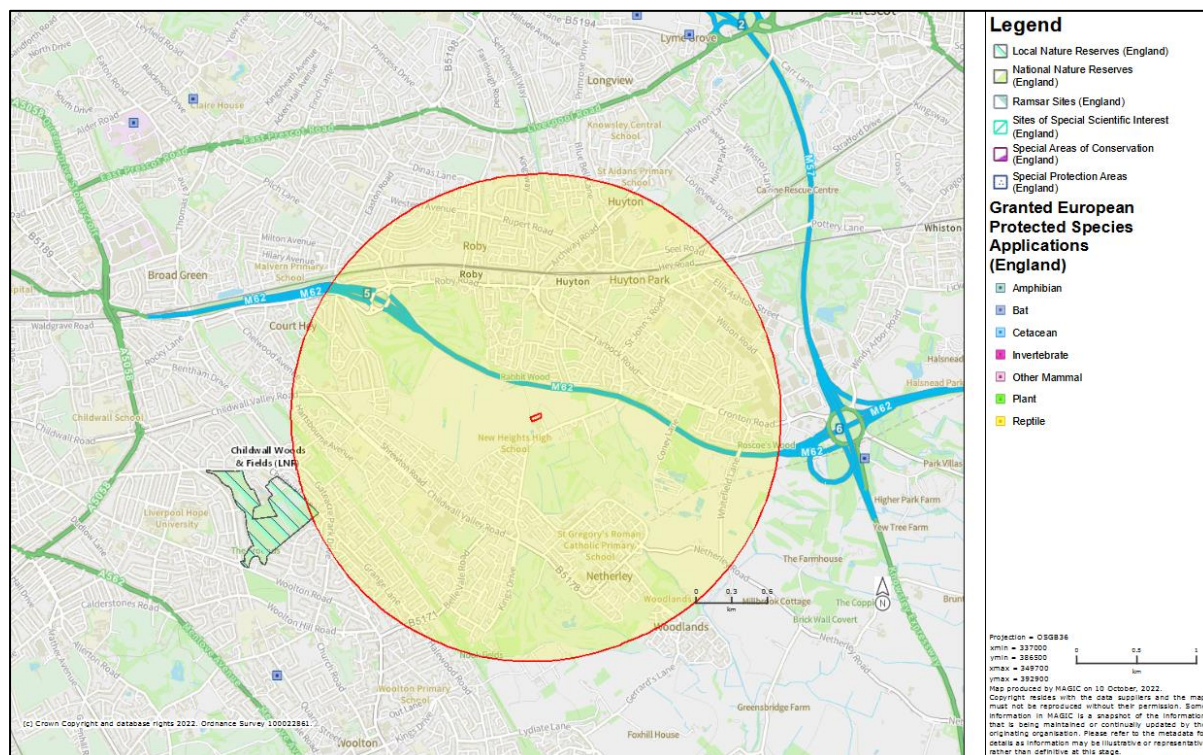


Figure 6.2 – EPSML and designated site data for the area within 2.0 kilometres of the application site
 (Source: MAGiC Maps 2022)

- 6.9 Tyrer Ecological Consultants Ltd have previous and ongoing projects involving bats within the 2.0 kilometre area surrounding the application site – as such, the following biological data (see Table 6.2) is readily available to the Ecologist from the company database – all data has been previously submitted to the LERC serving the area, which, in this case, is Merseyside BioBank.

Table 6.2 – LERC submitted biological data records collected by Tyrer Ecological Consultants Ltd

Year	Distance from Site	Context (where relevant)
2015	1.04 kilometres north	x10 Common Pipistrelle foraging and commuting on site
2016	1.53 kilometres north-east	Emergence of x1 Common Pipistrelle, day roost
2019	1.49 kilometres north	x2 Common Pipistrelle and x1 Noctule general activity
2021	1.49 kilometres north	x1 Common Pipistrelle regular foraging

7.0 Field Survey Results

7.1 Habitat Survey

7.1.1 See Table 7.1 (below) for baseline information and habitat descriptions; refer to Appendix I for any supporting imagery; scientific names are given in Appendix II. Refer to Appendix IV – UK Habitats Map for the location of described habitats & Target Notes (TN).

Table 7.1.1 – UK Habitat types within the survey area

Area Habitats	Sec. Codes	Description
g3c – Other neutral grassland	16, 17, 61, 77, 1011	A large portion (circa 0.66 hectares) of the site under blue line ownership to the north-west is constituted of a former grazing pasture which has been left unmanaged for some time. The grassland is dominated by high-sward False Oat-grass, with locally dominant Creeping Thistle. Occasional was Spear Thistle, Timothy, Broad-leaved Dock, Creeping Buttercup, Field Horsetail, whilst Common Nettle was locally occasional. Common Bent, Creeping Bent, Tufted Hair-grass, Common Ragwort, Hoary Willowherb, Broad-leaved Willowherb, Cleavers, Goat's-beard, Hawthorn, Elder, Common Vetch, Narrow-leaved Ragwort, Bittersweet and Red Fescue were all rare incidences.
h3d – Bramble scrub	-	Approximately 0.21 hectares of the site under blue line ownership is classed as this habitat, with Bramble dominant and rare encroachment of the aforementioned grasses from the g3c habitat as well as some incidences of trees establishing themselves following dispersal from the adjacent treeline, with Hawthorn present in rarity.
u1b5 – Buildings	112	Two buildings are located on the site within the red line boundary, with a total estimated area of 0.26 hectares. See Figure 7.3.1 and Table 7.3.1 below for further information on the structures.
u1b6 – Other developed land	11, 16, 17	Much of the site for which the application is set to impact is made up of this habitat, with circa 0.21 hectares within the red line boundary. No species are dominant, with large areas of open, sealed surface, however where the sealed surface has deteriorated a variety of plants have colonised, with species present such as Rosebay Willowherb, Dandelion species, Rose species, Ivy, Herb-robert, Dog-rose, Colt's-foot, Buddleia, Mugwort, Prickly Sow-thistle, Ribwort Plantain, Black Medick, Scaly Male-fern, Gorse and Procumbent Pearlwort as well as a variety of scattered tree species, including hybrid Oak and Sycamore, Willow species.
u1c – Artificial unvegetated, unsealed surface	11, 16, 17, 189	The north-east of the site (within blue line ownership) is unsealed, artificial surface, with the bare ground seemingly made up of a gravel / ash mix of sediment. Whilst largely unvegetated, some colonising vegetation has begun to grow, with species such as Dog-lichen,

		Pineapple-weed, White Clover, Greater Plantain, Self-heal and Fool's Parsley all observed. Scattered trees in the form of Silver Birch, Sycamore and Willow species are also present within this habitat.
Linear Habitats	Sec. Codes	Description
u1e – Built linear features	68, 69	A fence borders the western boundary of the site, and partitions out separate paddocks in the northern region of the blue line boundary. A brick wall is present to the southern boundary and divides the site from the school beyond.
w1g6 – Line of trees	69	A linear tree line forms the northern and eastern boundary of the site, with the dominant species being Willow to the east and Hawthorn to the north.
Target Notes		
1	Location of demolished buildings, with footprints still extant.	

7.2 Vegetation

Notable species

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

Invasive Non-Native Species (INNS)

- 7.2.2 No INNS, listed as such under Schedule 9 (Part II) of the Wildlife & Countryside Act (1981), were located within the site boundary during the diurnal appraisal.

7.3 Bats

- 7.3.1 Figure 7.3.1 shows the respective locations of the buildings within the application site boundary; Table 7.3.1 below describes each building in respect to their potential to offer roost features for bats (both internally and externally) and includes further information regarding evidence or lack of evidence of bats where applicable.

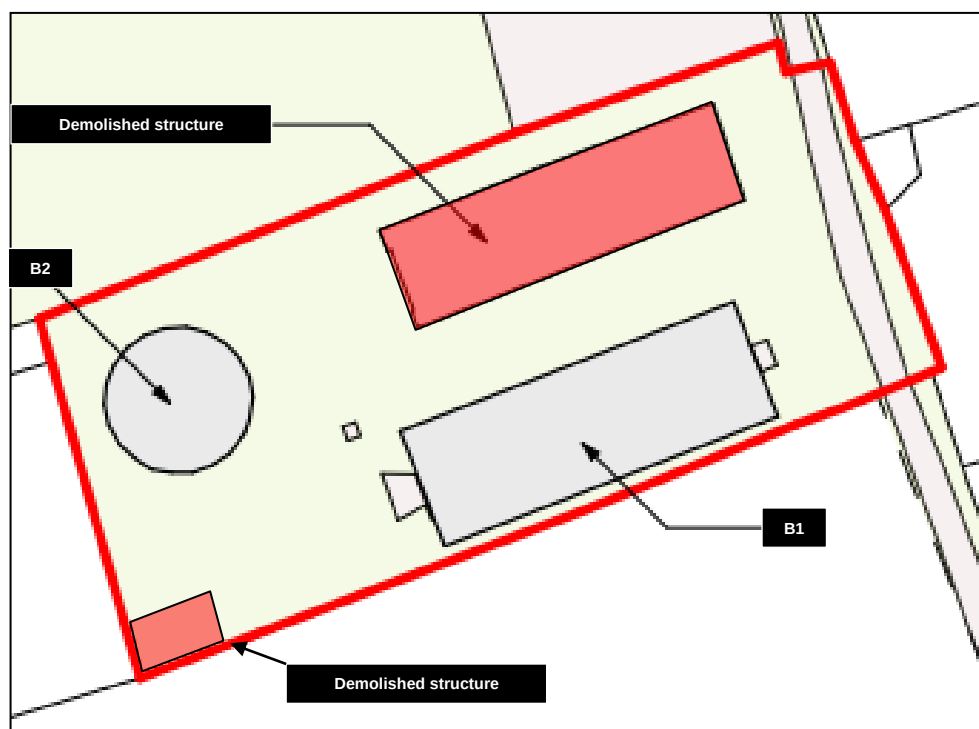


Figure 7.3.1 – Locations of the buildings within the red line boundary (© MSA Architects)

Table 7.3.1 – Building descriptions at the application site with included bat assessments

Building B1
A detached, brick / breezeblock built, single storey, modern agricultural barn with a pitched corrugated asbestos roof. Collectively, the building features components such as a large timber sliding door to the west, asbestos bargeboards, a timber fascia as well as timber cladding to the gable ends and metallic cladding to the northern and southern elevations, having approximate maximum dimensions of 37 metres x 13 metres x 4 metres (Length x Width x Height). In respect of its condition, the surveyor is not qualified to assess structural state, however the aesthetic condition of the building was adjudged to be moderate, with the structure being in generally good condition with the exception of a large hole in the roof of the building. Internally, a single space is present from ground to roof level, with the roof supported by metal trusses and half height breezeblock walls partitioning the space. The space itself is cool, draughty and highly illuminated via the integrated skylights in the roof of the structure. Building B1 is therefore considered unsuitable for the breeding purposes of loft-dwelling species such as Brown Long-eared bats, with the space deemed to be incompatible with the behaviours of these bats, which require a dark space with consistent thermal attributes for their maternity colonies. No evidence of BLE bats was encountered, such as droppings or prey items, despite the immediate environment offering commuting habitat with favourable connectivity to wider suitable environs. No underlining is present beneath the corrugated asbestos roof; where present a traditional bitumen 1F underfelt or other such roof linings typically improve a buildings value to bats notably for crevice-dwelling bats of the <i>Pipistrellus</i> genus, whereby the bats roost between the lining and the roof cover material provided external opportunities exist. No evidence of such bats was found; however, this is often the case due to the crevice-dwelling nature of these species.

NB: The breeding roosts of Pipistrelle bats are proportionally higher in occupied residential dwellings where the warm, dry conditions favour the requirements of a maternity colony but other structures are also used, especially for hibernation or by male bats which do not need the same conditions as a maternity colony.

Externally, the only ingress point identified on the structure was the large hole in the roof, however this does not provide a crevice opportunity and is therefore unlikely to be utilised by bats, with the conditions of the internal space providing no suitability for loft-dwelling species of bats.

Taking into account the lack of potential ingress points, the lack of crevice opportunities and the internal conditions of the space within B1, the building is duly categorised as offering '**Negligible**' bat roost suitability, in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016).

Building B2

A detached, hendecagonal shaped structure with a collapsed, multi-pitched roof, with approximated maximum dimensions of 15 metres x 15 metres x 3 metres. In respect of its condition, the surveyor is not qualified to assess structural state, however the aesthetic condition of the building was adjudged to be very poor, with fire damage evident in the fact that the structure had no roof and heavily damaged walls. The remaining roof beams were also clearly burned.

Internally, the structure is fully open to the elements.

The building is therefore considered unsuitable for both loft-dwelling bats as well as crevice dwelling species, due to the atmospheric conditions and lack of roosting opportunities.

Taking into account the above, B2 is duly categorised as offering '**Negligible**' bat roost suitability, in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016).

7.4 Breeding Birds

- 7.4.1 In relation to WCA Schedule 1 specially protected bird species, such as Barn owl, no evidence was found to suggest any form of site use or historic nesting, and the setting offers no real feeding value to this species.
- 7.4.2 In relation to wider breeding birds, direct evidence of breeding Feral Pigeon (*Columba livia domestica*) was noted within Building B2, including dead individuals, both chicks, juveniles and adults, as well as signs of constant use / breeding such as thick mats of faeces and feathers observed during the diurnal appraisal. Given the breeding patterns of this species, targeted recommendations have been made in section 8.0 below.
- 7.4.3 A plethora of viable nesting opportunities for smaller birds in the form of trees, other vegetation as well as the buildings within the red line boundary.
- 7.4.4 The following bird species were observed during the survey (see Table 7.4.1):

Table 7.4.1 – Bird species encountered during the survey

Species	Scientific Name	Status	Context (where relevant)
Feral Pigeon	<i>Columa livia 'domestica'</i>	Green	Breeding within B1
Woodpigeon	<i>Columba palumbus</i>	Amber	Committed over site
S.41 – a bird listed on section 41 of the Natural Environment Rural Communities Act 2006 (NERC Act) LBAP – a local biodiversity action plan listed species Q – qualifying species of nearby SSSI site(s) SPEC - a species of conservation concern, Amber or Red, Red being the highest conservation priority			

7.5 Other Terrestrial Mammals

Badger & Hedgehog

- 7.5.1 The surrounding habitat provides minimal suitable habitat for badger, with no areas of woodland in the immediacy and only small, ecologically isolated pockets of deciduous woodland in the contiguous landscape. No field signs were observed on site which may indicate the presence of this species, including any setts, latrines, pathways, hairs, footprints or feeding signs such as snuffle holes and scratched trees/logs
- 7.5.2 In respect of hedgehogs, the site provides good quality foraging habitat in the form of open grassland as well as sheltering opportunities such as dense scrub and the linear tree lines. Given the unmanaged nature of the site, it is also considered that hibernation potential may be present beneath the tree lines in the form of leaf litter.

7.6 Herpetofauna

GCN

- 7.6.1 Important elements to consider when assessing likely impacts against GCN includes:
1. The scale, nature and magnitude of proposals,
 2. Site proximity to a potential breeding pond and to any additional ponds,
 3. Habitat linkage / barriers between potential breeding ponds and the site,
 4. Nature and extent of available terrestrial habitat around the pond,
 5. Area of site habitat loss,
 6. Nature of habitat to be lost and potential value to GCN,
 7. Most up to date Government guidance considering EPS.
- 7.6.2 As derived from the desktop assessment, evidence of GCN in the locale included:
- No existing ponds on the site,
 - A single extant pond within 250 metres, situated approximately 95 metres to the west,
 - A single GCN survey result, approximately 0.72 kilometres west of the application site, and ecologically isolated from the site itself.

- 7.6.3 The habitat present within the site boundary is considered broadly unsuitable for GCN, with the site being dominated by hardstanding which provides little by way of shelter, whilst there is a distinct lack of other areas potentially suitable for refugia.
- 7.6.4 The pond within 250 metres which retains water was surveyed by FPCR Environment and Design Ltd in May 2020 (see section 9.0 for reference). During their initial Ecological Appraisal, the pond was identified as pertaining to 'Poor' on the Habitat Suitability Index (HSI), and was subsequently surveyed using Environmental DNA testing, which returned a negative result for the presence of GCN.
- 7.6.5 Combining the lack of newt records in the vicinity, as well as the unsuitable nature of the site, it is therefore considered unlikely that GCN are present within the application site boundary, indicating that risks to this species can be safely ruled out.

Wider herpetofauna

- 7.6.6 Given the surrounding habitats, which include irrigation systems and linear tree lines, the application site could be used by generalist, more robust common amphibians including Common Frog (*Rana temporaria*) and Common Toad (*Bufo bufo*), subject to their presence in the landscape.
- 7.6.7 In respect of reptiles, the site provides a broadly suitable environment, with ecotones between habitats, appropriate basking areas as well as a general lack of disturbance regime over much of the site. These factors mean that, subject to their presence in the wider landscape, the site could potentially host small numbers of Common Lizard or Slow-worm.
- 7.6.8 There will therefore be a requirement for some reasonable avoidance measures for wider herpetofauna in order to protect any herptiles which may be utilising the site.

Invertebrates

- 7.7.1 An assessment of the habitats on the site found various suitable niches present which may in turn support a variety of invertebrates, for example an abundance of wildflower heads, hedgerows and areas of shaded ground cover. General mitigation measures have therefore been recommended below in order to mitigate for the loss of a potentially important, however not locally distinct, habitat for this taxon.

8.0 Conclusions & Recommendations

Habitats & Vegetation

- 8.1 No habitats or species of conservation importance were identified within the application site boundary. As a means of improving biodiversity value / enhancing the site any new landscaping should aim to incorporate majority use of native species as opposed to non-native exotic species which offer significantly fewer benefits to our native fauna. Suitable species for native landscaping have been provided in Appendix III.
- 8.2 No Schedule 9 (WCA) INNS were recorded on the site.

Bats

- 8.3 Based upon the findings of the survey, covered through sections 6.0 – 7.0 of the report and supported by Appendix I, both of the buildings at Wheathill are determined to offer '**Negligible**' bat roost potential in accordance with Bat Conservation Trust - Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed. (2016). No further surveys are recommended in relation to bats, though general enhancement measures are recommended in Appendix III.

Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.		
Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.

Figure 8.1 – BCT extract on Negligible roost potential requirements

- 8.4 Bats are transient species' and buildings can deteriorate over time to provide greater. In the highly unlikely event that bat(s), or evidence of bat(s), are found during the proposed works, then, as a legal requirement, the work at the site should immediately cease and an Ecologist should be contacted for further advice. If bat(s) or their roost(s) will be affected, then an EPSML may be required to legally commence with the works. See Figure 8.2 overleaf for indicative evidence of bats.
- 8.5 None of the trees within the tree line within the red line boundary of the current application were determined to offer any roosting potential for bats, with no suitable crevice opportunities observed.



Figure 8.2 – Evidence of bats – droppings on the left / a Common Pipistrelle bat on the right – indicative

- 8.6 Installation of overly harsh artificial lighting as part of any development that exceeds current levels may have a negative impact upon foraging/commuting bats in the landscape, subject to their presence, particularly if increased light spillage occurs in areas of that are currently free from illumination. A bat-sensitive lighting plan is therefore recommended in order to avoid potential impacts to bats that may use the surrounding treelines. Several options to consider have been listed below, though the reader is referred to the Bat Conservation Lighting Guidelines for further information.

Appropriate luminaire specifications: Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires.

All luminaires should lack UV elements when manufactured. Metal halide, 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. Lighting should be directed to where it is needed, and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. Planting can also be used as a barrier or manmade features that are required within the build can be positioned so as to form a barrier.

Predicting where the light cone and light spill will occur: There are lighting design computer programs that are widely in use which produce an image of the site in question, showing how the area will be affected by light spill when all the factors of the lighting components listed above are taken into consideration. This should be a useful tool to inform the mitigation process.

Light levels: The light should be as low as guidelines permit. If lighting is not needed in any particular area, do not light. Numerous software programmes are currently available which can be used inform lighting plans, demonstrating how lighting decisions will illuminate a site.

Please refer to the 'Landscape and urban design for bats and biodiversity' (*Gunnell et. al.*, 2012, Bat Conservation Trust) Guidance Note 8 'Bats and Artificial Lighting' 2018, Bat Conservation Trust for further information.

Breeding Birds

- 8.7 In relation to WCA Schedule 1 specially protected bird species, no evidence to suggest any form of breeding behaviour or any usage of the site whatsoever was encountered. Any impacts which may arise from the development proposals to these specially protected birds can, therefore, be safely ruled out.
- 8.8 Feral pigeon were observed utilising building B1 for breeding purposes. Given the field signs, Feral Pigeon breeding presence may need to be addressed from a pest control point of view as breeding habits in relation to this species are atypical of other bird species and can last throughout the year. A General Licence is therefore likely to be necessary to legally control the species. From 1 January 2021, you must follow the conditions of general licence GL41 to control certain target birds for the purposes of preserving public health or public safety. The main changes to the licence conditions are:
- Species that can be controlled under licence are listed by 3 health and safety purposes of: slips and falls; spread of human disease; birds nesting,
 - Magpie, carrion crow and rook are removed from the licence,
 - Licence users must comply with the standard licence conditions for trapping wild birds and using decoy birds in traps (WML-GL33),
 - You may use the licence on or near a protected site as long as you have any necessary consent from Natural England to do so and comply with any site-specific conditions on the licence,

For further information on General Licencing see - [Wild birds: licence to kill or take for public health or safety \(GL41\) - GOV.UK \(www.gov.uk\)](#).

- 8.9 In relation to other common birds, the buildings and the vegetation present offer small birds a plethora of nesting opportunities, particularly during the breeding bird season.
- 8.10 Given that all birds are protected when at the nest, it is therefore recommended that any demolition, tree felling / pruning and vegetation clearance works on site are carried out outside of the breeding bird season (March – August inclusive). For works undertaken within the breeding bird season, any areas that can support nesting birds such as the buildings, dense scrub and woodland should be checked by a professional Ecologist for nesting birds within 48 hours or less prior to works commencing.
- 8.11 Where / if active nests are 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.

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."*

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.*

Other Terrestrial Mammals

- 8.12 Despite the wider environment providing some suitability for Badger, the immediate habitat is entirely unsuitable for this species. Furthermore, no evidence of usage of the site by this species was observed during the survey and the presence of Badger is considered extremely unlikely. Impacts to Badger from the proposed works can therefore be ruled out.
- 8.13 Hedgehog are likely to use the site for hibernation, shelter, foraging and commuting. The proposals pose a risk of injury and disturbance impacts. Therefore, a programme of Reasonable Avoidance Measures (RAMs) should be undertaken and carried out at the site during development, particularly where excavations / trenches will be made. These should include:
- limiting working hours to the daylight,
 - carrying out morning checks for the presence of hedgehogs and other small animals,
 - provisioning low angle sloping boards of approximately 300 mm wide to be placed within any excavations at the end of each working day, to facilitate a means of escape for mammals such as hedgehogs,
 - backfilling excavations at the end of the working day, if possible,
 - not leaving any bulky equipment / general construction aggregates around the development area, instead leave them on bare ground away from the risk zone.

Herpetofauna

GCN

- 8.14 Having carefully considered the results derived, the risk of impacts to Great Crested Newts can be ruled out, and their presence within the application site is considered to be highly unlikely.

Wider herpetofauna

- 8.15 Given the surrounding habitats, which include irrigation systems and linear tree lines, the application site could be used by generalist, more robust common amphibians including Common Frog (*Rana temporaria*) and Common Toad (*Bufo bufo*), subject to their presence in the landscape.
- 8.16 In respect of reptiles, the application site presents a suitable habitat for this taxon, with a number of suitable elements as discussed previously.
- 8.17 It is therefore recommended, as a precautionary measure, that an appropriate Method Statement is created by a suitably qualified Ecologist/Ecological Clerk of Works (ECOW), detailing a list of Reasonable Avoidance Measures (RAMs) to prevent risk to these species.

Invertebrates

- 8.18 General enhancement measures are recommended to be included in the proposed development in order to safeguard the value of the site with regards to invertebrates.

Biodiversity Enhancement

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

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Appendix I: Site Photographs



Plate 1 – *The western elevation of Building B1*



Plate 2 – *The northern aspect of the same building*



Plate 3 – *Internal character of B1*



Plate 4 – *Pigeons within the structure*



Plate 5 – *Open hole in roof*



Plate 6 – *Deceased pigeon chicks / squabs within B1*

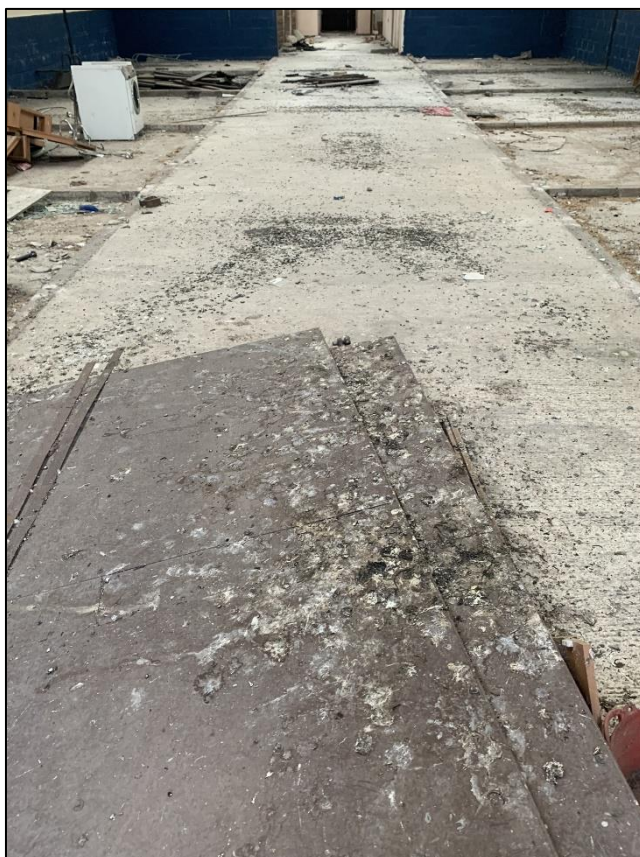


Plate 7 – *Faecal droppings within B1*



Plate 8 – *Building B2, clearly burnt out*



Plate 9 – *Further angle of Building B2*



Plate 10 – *Open grassland, previously grazed, within the blue line boundary to the north of the site*



Plate 11 – *Ecotone between scrub and grassland*



Plate 12 – *Further angle of northern part of site*



Plate 13 – *Sealed surface hardstanding*



Plate 14 – *Extant walls of a demolished / collapsed structure*



Plate 15 – Line of trees



Plate 16 – Previously demolished building



Plate 17 – *Unsealed surface*



Plate 18 – *Further angle of unsealed surface*

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).

Abundance	Scientific Name	Common Name
R	<i>Fraxinus excelsior</i>	Ash
R	<i>Solanum dulcamara</i>	Bittersweet
R	<i>Medicago lupulina</i>	Black Medick
D	<i>Rubus 'fruticosus'</i>	Bramble
O	<i>Rumex obtusifolius</i>	Broad-leaved Dock
R	<i>Epilobium montanum</i>	Broad-leaved Willowherb
LO	<i>Buddleja davidii</i>	Buddleia
R	<i>Galium aparine</i>	Cleavers
R	<i>Tussilago farfara</i>	Colt's-foot
R	<i>Agrostis capillaris</i>	Common Bent
O	<i>Urtica dioica</i>	Common Nettle
R	<i>Senecio jacobaea</i>	Common Ragwort
R	<i>Vicia sativa</i>	Common Vetch
R	<i>Agrostis stolonifera</i>	Creeping Bent
O	<i>Ranunculus repens</i>	Creeping Buttercup
LD	<i>Cirsium arvense</i>	Creeping Thistle
R	<i>Cynosurus cristatus</i>	Crested Dog's-tail
R	<i>Taraxacum officinale</i> agg.	Dandelion species
LO	<i>Peltigera canina</i>	Dog Lichen
R	<i>Rosa canina</i>	Dog-rose
R	<i>Sambucus nigra</i>	Elder
O	<i>Ulex europaeus</i>	European Gorse
D	<i>Arrhenatherum elatius</i>	False Oat-grass
O	<i>Equisetum arvense</i>	Field Horsetail
R	<i>Aethusa cynapium</i>	Fools Parsley
R	<i>Aruncus dioicus</i>	Goat's-beard
R	<i>Plantago major</i>	Greater Plantain
LD	<i>Crataegus monogyna</i>	Hawthorn
R	<i>Calystegia sepium</i>	Hedge Bindweed
O	<i>Geranium robertianum</i>	Herb-robert
R	<i>Epilobium parviflorum</i>	Hoary Willowherb
R	<i>Hedera helix</i>	Ivy
R	<i>Artemisia vulgaris</i>	Mugwort
R	<i>Senecio inaequidens</i>	Narrow-leaved Ragwort
R	<i>Quercus</i> sp.	Oak species
R	<i>Matricaria discoidea</i>	Pineapple-weed
R	<i>Sonchus asper</i>	Prickly Sow-thistle
R	<i>Sagina procumbens</i>	Procumbent Pearlwort
R	<i>Festuca rubra</i>	Red Fescue

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O	<i>Plantago lanceolata</i>	Ribwort Plantain
R	<i>Rosa sp.</i>	Rose species
LO	<i>Chamerion angustifolium</i>	Rosebay Willowherb
R	<i>Dryopteris affinis</i>	Scaly Male-fern
R	<i>Prunella vulgaris</i>	Selfheal
R	<i>Betula pendula</i>	Silver Birch
O	<i>Cirsium vulgare</i>	Spear Thistle
R	<i>Acer pseudoplatanus</i>	Sycamore
O	<i>Phleum pratense</i>	Timothy
R	<i>Deschampsia cespitosa</i>	Tufted Hair-grass
O	<i>Trifolium repens</i>	White Clover
LD	<i>Salix sp.</i>	Willow species

Appendix III: Biodiversity Enhancement: General Recommendations

Bats

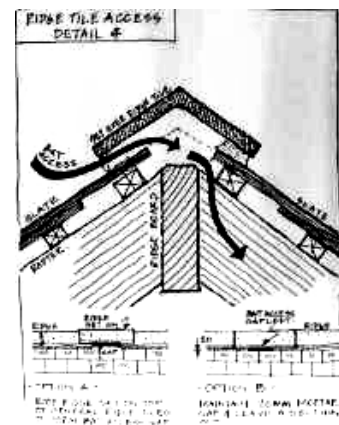
Integrated bat box

The Habibat Bat Box is a solid box made of insulating concrete with internal roosting space. The box blends seamlessly into brick-built properties and may be incorporated into the fabric of buildings, being best placed on gable elevations.



Ridge access

Where appropriated, ridge tile access should be made with the incorporation of traditional Bitumen 1F underfelt immediately beneath ridge tiles. Breathable BRM membrane can cause significant problems where bats are in contact with it, whereby their fine claws become entangled within the fibres of the membrane, entrapping and killing bats.



Soffit access

Where soffits are instated at gable elevations, roost provision may be instated in the form of a soffit bat box with internal roosting space.



Externally fitted boxes

A large number of externally fitted box models for bats exist for buildings and trees. Suitable models for both buildings and trees may include the Eco Kent Bat Box, with more examples present online.



Breeding Bids – 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.



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

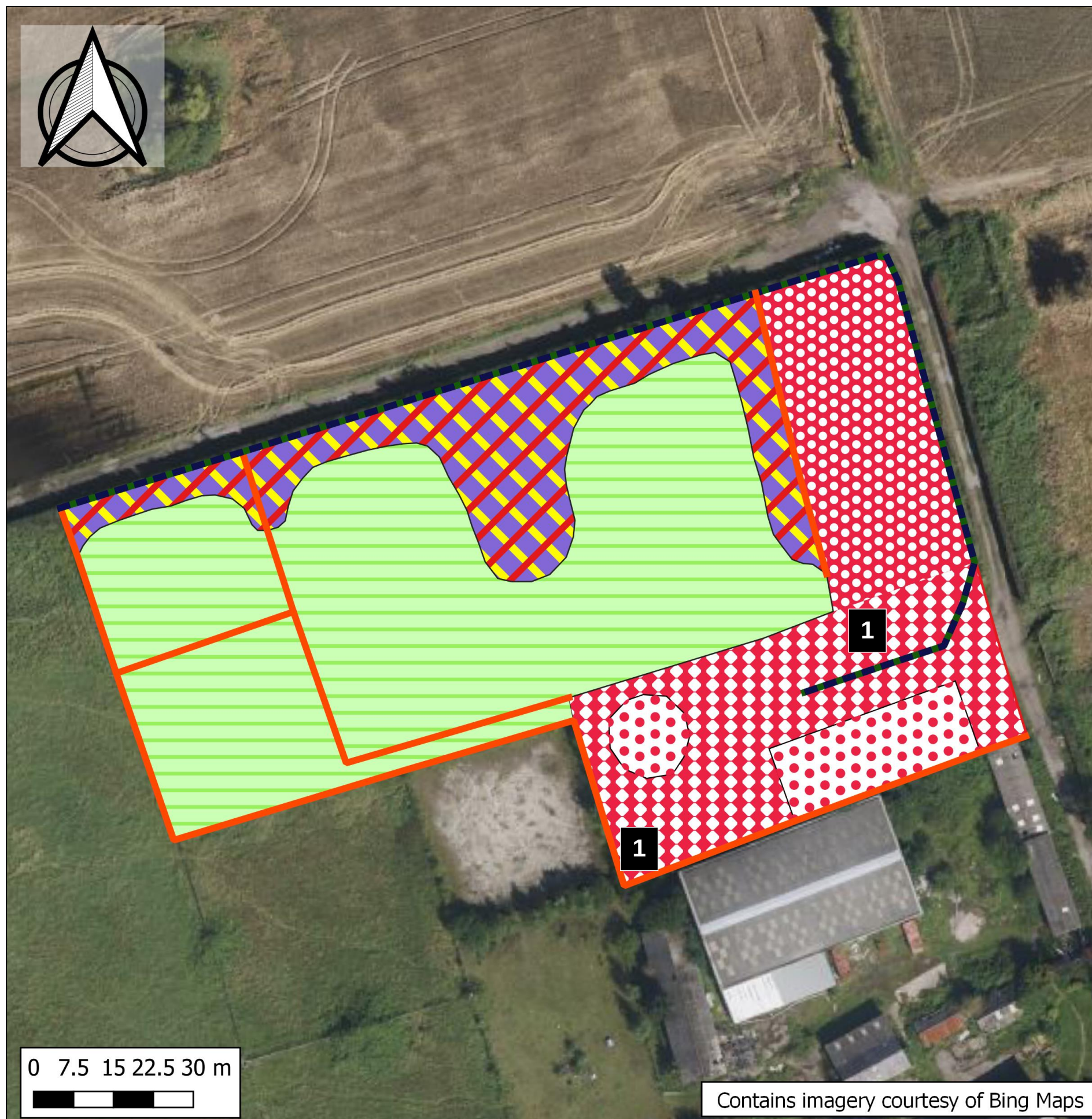
- * Material: Concrete
- * Origin: Cornwall, UK
- * Dimensions: W 215mm x D 105mm x H 65mm
- * Weight: 2.9kg
- * Colours: White grey, yellow, dark grey and red



Native Planting and/or Landscaping - recommended species

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 (*Prunus spinosa*), Hawthorn (*Crataegus monogyna*), Hazel (*Corylus avellana*), and Holly (*Ilex aquifolium*), whilst climbers/creepers such as Hops (*Humulus lupulus*) and Honeysuckle (*Lonicera periclymenum*) 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 (*Quercus robur*), Wild Cherry (*Prunus avium*), and Alder Buckthorn (*Frangula alnus*).

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



UK Habitats Key

- u1e - built linear feature
- w1g6 - line of trees
- g3c - other neutral grassland
- h3d - Bramble scrub
- u1b5 - buildings
- u1b6 - other developed land
- u1c - artificial unvegetated unsealed surface
- Boundary

Target Notes:

1 - Location of demolished buildings

Wheathill

Survey Date: 15/08/2022
 Drawn: Mr. B. Richards
 Date Drawn: 12/10/2022
 Checked & Approved: Mrs. K. Wilding
 Size: A3
 Scale: 1:1000

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Contains imagery courtesy of Bing Maps