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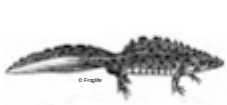
Tyrer Ecological Consultants Ltd, Formby Business Centre, 42 Duke Street, Formby, L37 4AT

Preliminary Ecological Appraisal

April 2022

Land adjacent to No. 2 Belgrave Road
Belgrave Road,
Wrexham,
LL13 7ES

National Grid Reference: SJ33324954



Land adjacent No. 2 Belgrave Road, Belgrave Road, Wrexham, LL13 7ES
Preliminary Ecological Appraisal

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Executive Summary

As part of a proposed planning application regarding land adjacent to No. 2 Belgrave Road, Wrexham; a Preliminary Ecological Appraisal (PEA) was undertaken by Tyrer Ecological Consultants Ltd during March 2022, in accordance with the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017) and other best practice guidance. It is understood that proposals entail the redevelopment of the land to provide 8 apartments within a single building with associated landscaping and access. This report was commissioned by Blueprint Architectural Ltd.

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

Habitats: *The priority habitat 'Hedgerows' was recorded within the site as it is recommended that the western and northern hedgerow is maintained within its entirety with a view to condition improvement; in conjunction to being a priority habitat it provides valuable shelter and foraging opportunities for a myriad of species. Additionally, any loss of hedge in the east of site can be mitigated for through native landscaping*

Breeding Birds: *During the survey birds were seen carrying nesting material at the site, historic nesting evidence was located within the shrubbery to the west of the site. Thus, the hedgerows, shrubs and trees provide suitable nesting platforms which could be utilized by breeding birds. Any vegetation clearance or demolition works should therefore be undertaken outside of the breeding birds' season of March-August unless it can be demonstrated by a suitable qualified, professional ecologist that breeding birds are absent beforehand.*

Hedgehog: *It is recommended that a Method Statement including details of Reasonable Avoidance Measures is created by a suitably qualified Ecologist/Ecological Clerk of Works to avoid risk of harm to species out lines in section 8.11 of this report.*

Herptiles: *A RAM's has been recommended within section 8.11 as a precautionary measure to protect amphibians should they be present within the vicinity. The applicant and all contractors should be aware that in the event that if at any stage GCN are encountered during works, or at any other stage of the work programme, works would be required to immediately cease and an Ecologist made aware as to provide further guidance in this situation. In the event that GCN or their refuge/shelter would be directly impacted upon, including disturbance, an EPSML to legally proceed with the development may be required following detailed further presence/absence surveys.*

Biodiversity Enhancement: A series of recommendations have been given within section 8.0 and Appendix III which provide opportunities for biological enhancement at the development site and within the wider area. Enhancement opportunities include recommendations relative to the provision of favourable planting and landscaping, with wildlife boxes.

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1.0 Introduction & Objectives

- 1.1 As part of a proposed planning application regarding land adjacent to No. 2 Belgrave Road, Wrexham (see Figure 1.1); a Preliminary Ecological Appraisal (PEA) was undertaken by Tyrer Ecological Consultants Ltd during March 2022, in accordance with the *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2017) and other best practice guidance. It is understood that proposals entail the redevelopment of the land to provide 8 apartments within a single building with associated landscaping and access. This report was commissioned by Blueprint Architectural Ltd.
- 1.2 Ecological surveys, particularly where a specially protected / noteworthy species is or may be present, are generally required as part of the Local Authority's Planning Policies. This survey and report was commissioned by Blueprint Architectural Ltd.

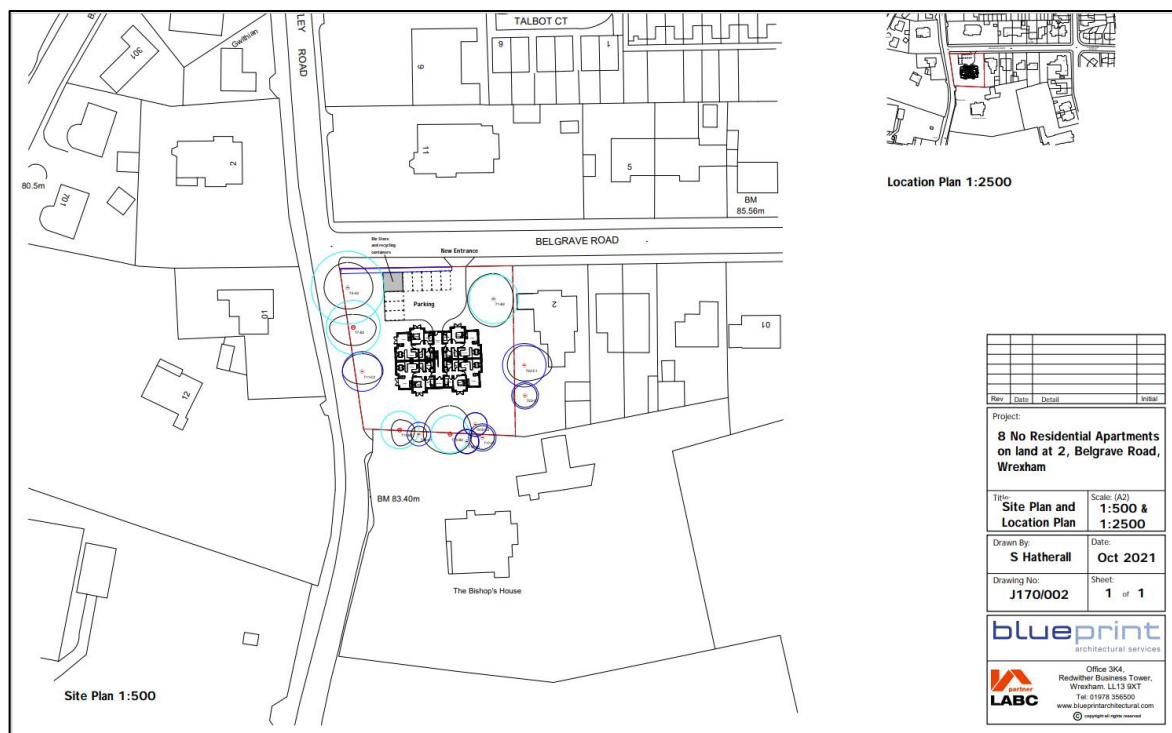


Figure 1.1: Proposed site plan

Aims & Objectives

- 1.3 The aim of the survey was to ascertain the nature of the land, 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 baseline ecological information on site/off site (as necessary),
 - 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 mitigation / compensation measures likely to be required in line with the mitigation hierarchy (i.e. avoidance > impact minimisation > mitigation > compensation),

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- Identify additional survey requirements following on from this preliminary appraisal,
- Identify a series of 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).

1.4 As part of this ecological appraisal:

- Habitats on site have been identified and mapped using the '*Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Handbook*' (JNCC, 2010), and

1.5 As part of the Local Planning Authorities (LPA) planning policies and obligations to the Planning Framework, ecological surveys are generally required prior to planning permission being granted, particularly where protected/priority species are, or may be present, that could be affected by the proposals for which the application seeks consent.

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

1.7 The Applicant should be aware 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/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.

1.8 If any protected species was subsequently found 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.

1.9 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.

1.10 Protected/priority species omitted from this report have been discounted due to 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 negatively 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
- The Environment (Wales) Act (2016)

2.2 These acts entail relevance to both protected and invasive species. The degree of protection offered to taxa provided within existing UK and EU legislature often varies depending on species/group, for example, some species may purely be protected during one of its life stages (e.g. common species of breeding bird whilst nesting/with eggs/young); some species may receive full protection within the EU (e.g. otter), whereas others may be protected solely on a national basis (e.g. grass snake).

2.3 Table 2.1 contains appropriate legislature to each species/group specifically respective to the site, and provides the relevance of said legislation.

Table 2.1 - Relevant Legislation

Species Group/Species	Relevant 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-treat 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) The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579) Wildlife and Countryside Act (1981) (as amended) Environment (Wales) Act (2016)	All British bats and their roosts are afforded full protection from damage/destruction and bats may not be injured/killed/taken at any stage. Bats are also protected from reckless disturbance; 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) Environment (Wales) Act (2016)	All wild birds (with only minor exceptions) and their nests whilst being built or containing eggs or dependant young are protected.

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Great Crested Newt (GCN)	CRoW Act (2000) Conservation of Habitats and Species Regulations (2019) (EU Exit) Wildlife and Countryside Act (1981) (as amended) Environment (Wales) Act (2016)	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 Wildlife and Countryside Act (1981) (as amended) as invasive, including Japanese Knotweed (<i>Reynoutria japonica</i>) and Himalayan Balsam (<i>Impatiens glandulifera</i>). The Act makes it an offence for any person to grow or cause to grow in the wild any plants listed as invasive.

Policy

2.4 Planning Policy Wales, 10th Edition (2018) is the Welsh Government's policy document and it describes the land use context for using land sustainably. The document supports every strategy published by the Welsh Government and it is supplemented by a variety of Technical Advice Notes (TAN's) and any circulars.

2.5 There are several plans, strategies and national, sub-regional and local policy statements which provide a framework for development in the Plan area. The Planning and Compulsory Purchase Act (2004) makes it a requirement for local planning authorities in Wales to prepare a Local Development Plan (LDP) for their areas.

Wrexham Borough Council prepared a plan, namely the 'Wrexham Unitary Development Plan (1996 – 2011)', which was formally adopted in February 2005 and supersedes any previous development plans for the area. A new plan, the 'Wrexham Local Development Plan 2 (2013 - 2028)', which will replace the current adopted plan, is currently under review. Until this new plan is adopted, the Wrexham Unitary Development Plan remains in effect.

2.6 Planning authorities must therefore follow a step-wise approach to maintain and enhance biodiversity and build resilient ecological networks by ensuring that any adverse environmental effects are firstly avoided, or minimized, or mitigated, and as a last resort compensated for; enhancement must be secured wherever possible.

2.7 The first priority for planning authorities is therefore to avoid damage to biodiversity and ecosystem functioning. Where there may be harmful environmental effects, planning authorities will need to be satisfied that any reasonable alternative sites that would result in less harm, no harm or pro-gain have been fully considered.

2.8 Planning authorities should ensure that features and elements of biodiversity value are retained on site, and enhanced or created where ever possible, by adopting best practice site design and green infrastructure principles. The provision of up to date ecological survey information will assist in this process. Where necessary, planning authorities should seek to

modify the development proposal through discussion with the applicant at the earliest possible stage. Biodiversity and green infrastructure modifications should draw on the issues and opportunities identified in a preliminary assessment. In some circumstances, it will be appropriate to attach planning conditions, obligations or advisory notes to a permission, to secure biodiversity outcomes.

- 2.9 When all other options have been exhausted, and where modifications, alternative sites, conditions or obligations are not sufficient to secure biodiversity outcomes, offsite compensation for unavoidable damage must be sought. This should normally take the form of habitat creation, or the provision of long-term management arrangements to enhance existing habitats and deliver a net benefit for biodiversity.

Where the adverse effect on the environment clearly outweighs other material considerations, the development should be refused.

- 2.10 The Environment (Wales) Act 2016 (“the Act”) - requires local planning authorities to have regard to area statements in the development of Local Development Plans.

Part 1 of the Act promotes sustainable management of natural resources, and in Part 1 section 6 states:

“A public authority must seek to maintain and enhance biodiversity in the exercise of functions in relation to Wales, and in so doing promote the resilience of ecosystems, so far as consistent with the proper exercise of those functions.”

- 2.11 All British bats and their ****roosts** are afforded protection under Schedule 5 of the Wildlife & Countryside Act (1981) (as amended) and are listed in Schedule 2 of the Conservation of Habitats & Species Regulations 2017. When dealing with cases where a European Protected Species (all UK bats) may be affected, a planning authority is a competent authority within the meaning of the Regulation 7 of the 2017 Regulations and therefore has a statutory duty to have due regard to the provisions of the Regulations in the exercise of its functions.
- 2.12 The presence of a species protected under European or UK legislation, or under Section 7 of the Environment (Wales) Act 2016 is a material consideration when a planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat and to ensure that the range and population of the species is sustained.
- 2.13 Figure 2.2 below is a process model that surmises how ecological issues should be dealt with in the context of the planning process.

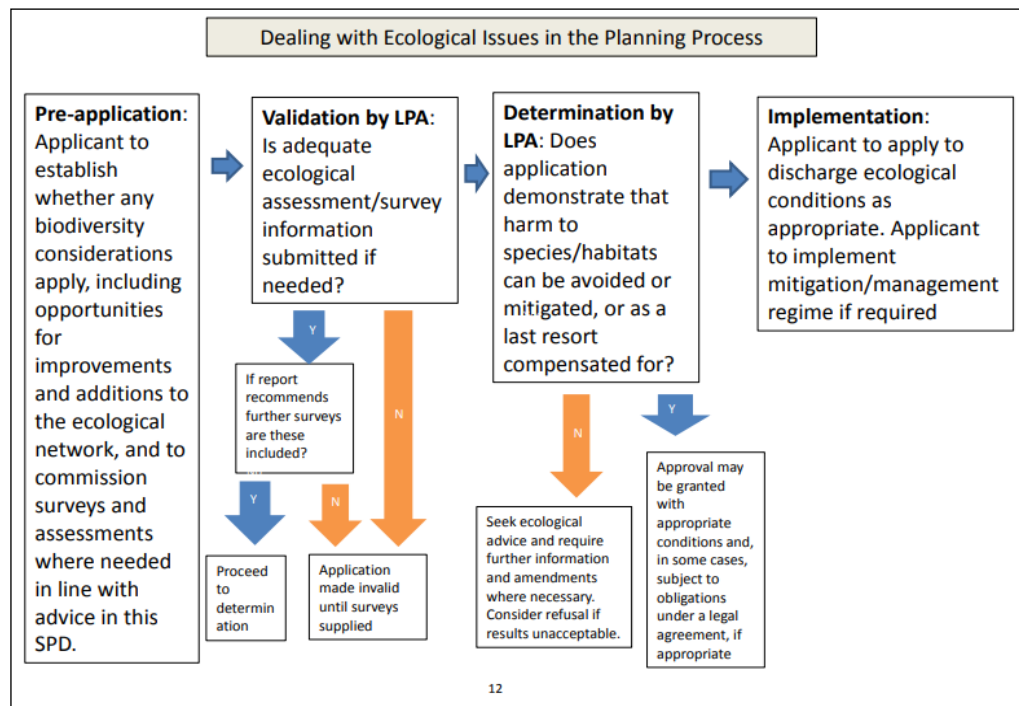


Figure 2.2 - Dealing with ecological issues in the planning process

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, their 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 7 of the Environment (Wales) Act 2016.
- 3.3 The following Priority habitats and species are considered relevant to the survey area:

Habitats:

- Hedgerows

Species:

- Brown long-eared (*Plecotus auritus*),
- Soprano Pipistrelle (*Pipistrellus pygmaeus*),
- Bird species that include: House Sparrow (*Passer domesticus*), Dunnock (*Prunella modularis*), Song Thrush (*Turdus philomelus*), Bullfinch (*Pyrrhula pyrrhula*),
- Great Crested Newt (GCN) (*Triturus cristatus*),
- Common toad (*Bufo bufo*),

District context

- 3.4 Local Biodiversity Action Plans (LBAP's) are a way of encouraging people to work together and 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.

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

4.0 Survey Methods

- 4.1 As part of the Preliminary Ecological Appraisal report, a desk-top and field-based study was 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 3.0km of the site boundary. To do so, the 'Multi Agency Geographic Information for the Countryside (MAGIC – provided by Defra)' along with 'Lle a Geo-Portal for Wales' were accessed to gather such information; this interactive mapping service was also used to locate any European Protected Species Mitigation Licenses (EPSML) and species records to further inform conclusions concerning protected species in the context of the study site and its proposed development.
- 4.3 Historic satellite imagery was reviewed using sources such as Google Earth (© 2020/21) to help establish past use of the land and determine the nature of adjoining and extending habitats; such information aids in the understanding of how the site might interact with its surroundings ecologically and its value in that context, and how the development may impact at a wider scale.
- 4.4 In addition the Council Planning Portal 'Search for planning applications' function was utilised to help inform the desktop study by analysis of existing publicly accessible ecological survey results that have been carried out locally within the previous five years.
- 4.5 A commercial data request to the Local Environment Records Centre serving the area has not been sourced during this preliminary appraisal assessment and is justified through application of the following recent guidance:

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:

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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 (CIEEM, 2017) 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.”

As exemptions as made **bold** above can be applied for the proposed development at the land adjacent to Holly Croft Cottage in good practice, it is considered unnecessary to conduct a commercial data request at this time, however, if a data search is considered to be necessary by the Local Authority or advisory body to better inform the appraisal, a proportionate data search should be commissioned with results interpreted into the conclusions and recommendations of a re-issued/updated report.

Field Survey

- 4.6 A daytime preliminary ecological appraisal was conducted on 15th March 2022 in bright, dry conditions (15C), wind 2/12 (Beaufort scale), 60% cloud by the following surveyor (Table 4.1).

Table 4.1 - Surveyor credentials

Name	Description of relevant credentials
Miss T. L. Hesketh (Junior Ecologist)	An experienced Junior ecologist with 2 years professional training and experience; holding a BSc in Biology and MSc in Conservation Management a course accredited by CIEEM. Accredited agent on the Class 2 Natural Resources Wales bat license of Mrs K Wildling (SO90606-1)

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 notoriety on a geographical scale which is adopted on a site-to-site basis (see Figure 4.1 below).

For a site-relevant species list, see Appendix II.

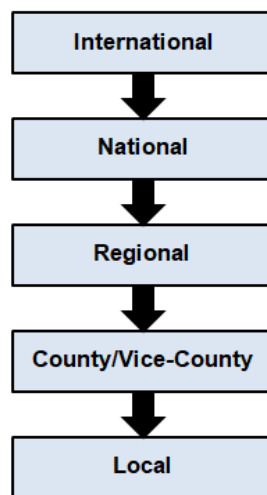


Figure 4.1 - Geographic Frame of Reference entailing degrees of conservation importance

- 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).

Faunal assessment

- 4.11 The identification and/or evidence of fauna encountered would be documented whilst in tandem the area was assessed for the potential to support the priority species covered in the previous tables. The 'walkover' also aimed to identify any ephemeral pools or unmapped waterbodies.

Bats

- 4.12 The site would be 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

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items. The surrounding habitat was also considered in terms of general suitability. Two buildings are present within the application site boundary.

- 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. Three mature trees are present within the application site boundary.
- 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 of roost potential, if present.

Breeding Birds

- 4.16 Buildings, trees, hedges, and scrub (where present) would be checked for evidence of nesting birds 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. Additional to the site's capacity to support generally common species for breeding, the area was also subject to an assessment for the site's capacity to support species especially protected under Schedule 1 of the Wildlife & Countryside Act (1981) (as amended), for example Barn Owl (*Tyto alba*) and other priority species.

Other terrestrial mammals

- 4.17 The walkover included a search for field signs of Badger (*Meles meles*) which includes signs of activity such as digging, setts, 'runs' leading to and from a sett and the existence of latrines or 'snuffle' holes where badgers have foraged in the ground.

GCN

- 4.18 During desktop assessment a 250m 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). The information gathered would then be used to aid in establishing if more detailed surveys are required.
- 4.19 No ponds were located within the site boundary, a single isolated pond existing within a 250m buffer of the site. No further ponds were located within the wider 500m buffer.
- 4.20 In order to quantify risks to GCN in a PEA, a range of factors need to be considered (see below and Figure 4.3):
- Presence of ponds on site, and impacts to those ponds,
 - Site proximity to any additional ponds within 250-500m,
 - Pond quality (suitable for breeding, or not),
 - Nature, extent, and connectivity of available terrestrial habitat around the pond(s), considering core, intermediate and distant ranges,
 - Presence of significant barriers between ponds and site,
 - Area of site habitat loss and permanence of that loss.

Increases risk to GCN	Decreases risk to GCN
large population size, high local pond density, good terrestrial habitat, low pre-existing habitat fragmentation, large development footprint, long construction period	small population size, low local pond density, poor terrestrial habitat, substantial pre-existing dispersal barriers, small development footprint, short construction period

Figure 4.3 - Factors that can increase / decrease risk of committing an offence

- 4.21 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, piles of hardcore) and opportunities for foraging (e.g. rough grassland and scrub). Beebee & Griffiths (2000) state specific habitat preferences of common UK reptiles:

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- Common Lizards (*Zootoca vivipara*) use a variety of habitats from woodland glades to heaths, walls and pastures, as well as brownfield sites,
- Slow-worms (*Anguis fragilis*) use similar habitats to Common Lizards, and are often found in rank grassland, gardens and derelict land under refugia,
- Grass Snakes (*Natrix natrix*) have broadly similar requirements to Common Lizards but with a greater reliance on ponds and wetlands, where they prey on amphibians.

In assessment of a site for reptiles important habitat characteristics are considered, outlined in Table 4.2, 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

- 4.22 The application site was assessed for the presence of features that should be considered of high value to invertebrates. A number of 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
- 4.23 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.
- 4.24 All aspects of the field survey were undertaken in line with the current government and CIEEM standing guidance during the COVID-19 ‘Coronavirus’ pandemic.
- 4.25 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 Miss T. Hesketh.

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 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 Habitat Survey is April to October; therefore, the survey was carried out in a sub-optimal period; notwithstanding, the nature and value of the habitats on site could be accurately assessed irrespective of this factor and seasonal timing is not considered a constraint.
- 5.3 The internal survey of the lofts at of No.2 Belgrave Roads was restricted to the view of the loft from the hatch due to the ceiling heights. However, the building is not being directly impacted upon by the proposals. Having considered this in conjunction with the proposed plans, and the external survey of the building. 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 Land adjacent to No. 2 Belgrave Road ("the application site", circa 0.06 hectares) is situated off Belgrave Road, in Wrexham, <1km south-west of Wrexham town centre (see Figure 6.1).



Figure 6.1 - Location of application site within the surrounding landscape (Source: Google 2021/22)

- 6.2 The application site can be broadly described a vegetated garden consisting of a modified grassland lawn, with vegetated/tree lined borders.
- 6.3 The site is situated on the outskirts of Wrexham, terraced and semi-detached dwellings are evident to all environs. However, green infrastructure is present throughout int the form of areas of scattered broad leaf trees and vegetated gardens, some of which are extensive such as the grounds of Hillbury Care Home to the south as well as children's playgrounds and recreational fields such as 'The Brickie'.
- 6.4 The extending habitat continues in similarity to that of the immediate, comprising of further residential properties until you reach the ancient woodland of Coed- Y- Glen some 620m south of the site, which borders National Trust Eriddig Parkland and the River Clywedog 1km south of the site. To the west and east of the site the environment becomes increasingly agricultural in nature consisting of arable land, interspersed with linear features such as mature tree lines and hedgerow.
- 6.5 In respect to connectivity, the site has good connectivity with the surrounding environs. With limited dispersal barriers other than minor roads; flying species and terrestrial mammals would have no issue accessing the site, slower moving terrestrial species may be discouraged but their presence on site cannot be ruled out entirely.

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- 6.6 The described ecological frameworks are considered to offer a fair array of habitats with good inter-connectivity in the landscape and to the application site, which is of benefit to several species/groups for which the survey was undertaken, notably flying animals such as bats, birds and terrestrial mammals associated with rural settings; whilst herptiles are unlikely to be present additionally open agricultural land offers limited shelter/value for herptiles from predators such as corvids, versus more structured habitats such as the local woodlands and hedgerows, which limits site suitability for species such as newts, lizards and snakes.
- 6.7 The protected species most typically associated with the habitats described is the Common Pipistrelle (*Pipistrellus pipistrellus*) bat, frequently associated with buildings in rural settings, and this species presence in surrounding landscape is likely.
- 6.8 There are two statutory designated sites for nature conservation within 2.0km of the application site as presented in Table 6.1:

Table 6.1 - Statutory designated site within 2km of the application site

Site name and Location	Designation type	Interest features
Sontley Marsh	Site of Special Scientific interest	One of the best wetland examples in Clwyd of the "southern mesotrophic mire" type more characteristic of south-west Wales and, in North Wales, largely restricted to Ynys Môn, Dwyfor and Clwyd. The site occupies the western valley side of the Gefeiliau Brook, a tributary of the Afon Clywedog, and is fed by a series of springs along the valley slope, and by run-off. Extensive areas of alder carr (woodland) occur, particularly adjacent to the Gefeiliau Brook and along spring-fed water courses. Alder (<i>Alnus glutinosa</i>) dominates, but there are extensive stands of Common Sallow (<i>Salix cinerea</i>) and Goat Willow (<i>S. capraea</i>) together with Bird Cherry (<i>Prunus padus</i>) and Guelder Rose (<i>Viburnum opulus</i>). Much of the site is dominated by tall fen vegetation with stands of Great Pond-sedge (<i>Carex riparia</i>), Meadow-sweet (<i>Filipendula ulmaria</i>), Lesser Pond-sedge (<i>Carex acutiformis</i>) and Great Horsetail (<i>Equisetum telmateia</i>). Wetter areas here support Reed-grass (<i>Phalaris arundinacea</i>) and Hemp Agrimony (<i>Eupatorium cannabinum</i>) with Spindle (<i>Euonymus europaeus</i>) on drier sites. Dense strands of (<i>Equisetum telmateia</i>) also support Panicked Sedge (<i>Carex paniculate</i>) and Purple Loosestrife (<i>Lythrum salicaria</i>). Marsh Valerian (<i>Valeriana dioica</i>) occurs throughout the site. At the southern end of the site herb-rich damp grassland occurs with Ragged Robin (<i>Lychnis flos-cuculi</i>), Yellow-rattle (<i>Rhinanthus minor</i>) and Devil's-bit Scabious (<i>Succisa pratensis</i>).

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Gatewen Marsh	Site of Special Scientific interest	One of only three significant examples in the former county of Clwyd of the “southern mesotrophic mires” wetland type. This type is more characteristic of south-west Wales and, in North Wales, is largely restricted to Ynys Môn and Dwyfor The marsh is unusual in containing substantial stands of Great Reedmace <i>Typha latifolia</i> in shallow water with Brooklime <i>Veronica beccabunga</i>, Water Plantain (<i>Alisma plantago aquatica</i>) and Bottle Sedge (<i>Carex strata</i>). The fringes of these areas support stands of Common Spike-rush (<i>Eleocharis palustris</i>) with Water Mint (<i>Mentha aquatica</i>), Gipsy-wort (<i>Lycopus europaeus</i>), Narrow-leaved Water-parsnip (<i>Berula erecta</i>) and Lesser Spearwort (<i>Ranunculus flammula</i>). Further north are stands of Great Pond-sedge (<i>Carex riparia</i>) and Bur reed (<i>Sparganium erectum</i>) with Reed-grass (<i>Phalaris arundinacea</i>) on the fringes and Broad-leaved Pondweed (<i>Potamogeton natans</i>) in open channels. Willows <i>Salix</i> spp. are establishing in part of the site and the area adjacent to the colliery spoil banks is dominated by Great Hairy Willow-herb (<i>Epilobium hirsutum</i>) suggesting past disturbance.
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- 6.9 In relation to ponds none exist on site; there is one pond mapped within 250 metres, and none within 500 metres; The connectivity between the isolated pond and the site is can be described as moderate due to the presence of vegetated gardens between the singular pond and the site.

For visual aid / pond layout see Figure 6.2.

Desktop study - Species records

- 6.10 **Bats:** A search of extensive bat records held by Tyrer Ecological Consultants Ltd revealed records of multiple roosts and bat activity within 2km of the site
- 6.11 **Great Crested Newt:** In relation to ponds, none exist on site one exists within 250m of the site in the ground of Hillbury Care Home, no further ponds are located within 500m of the site.

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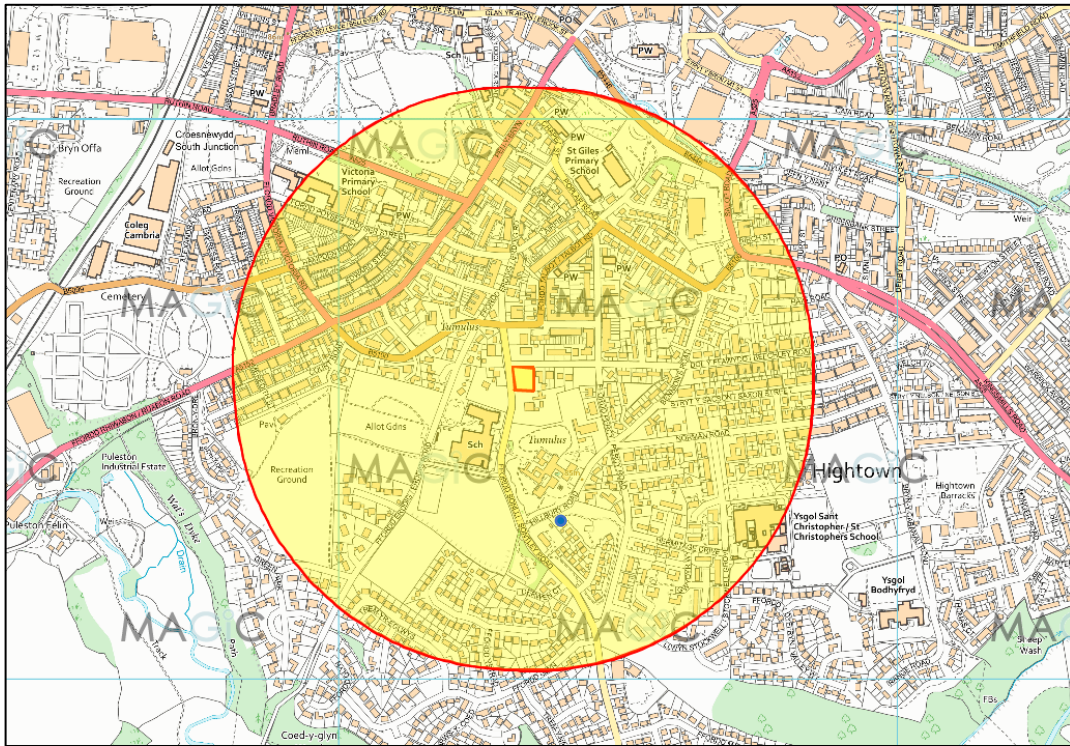


Figure 6.2 – Map showing a 500m buffer and the location of the single mapped pond within the surrounding landscape in relation to the applications site. (Source: adapted from MAGIC Maps, 2021)

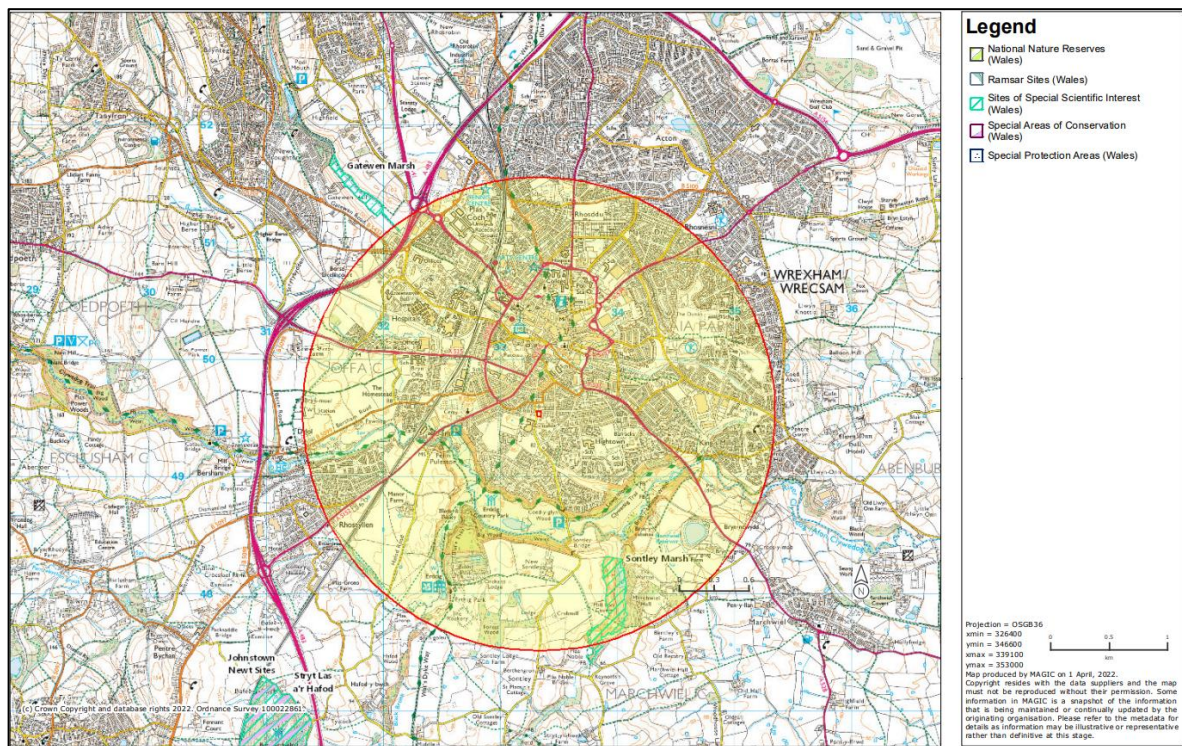


Figure 6.3 – Location of designated sites relative to the application site (Source: adapted from MAGIC Maps, 2021)

7.0 Field Survey Results

7.1 Habitat Survey

- 7.1.1 See Table 7.1 (below) for habitat descriptions. Refer to Appendix IV – UKHab Habitat Map for the location of all described habitats & Target Notes (TN). Species nomenclature follows Stace, C. (2019) – definitive English names.

Table 7.1 - UK Habitat types within the survey area with target notes

Habitat Code	Broad Habitat	Description
g4	Modified grassland	Area of grassland used as a lawn, regularly mown by homeowners. Dominate species consist of; Perennial Ryegrass (<i>Lolium Perenne</i>), Annual Meadow Grass (<i>Poa Annua</i>), Red Fescue (<i>Festuca rubra</i>) with patches of Yorkshire Fog (<i>Holcus Lanatus</i>) to the borders. Other forbs included; Common Daisy (<i>Bellis Perennis</i>), Germander Speedwell (<i>Veronica chamaedrys</i>), White Clover (<i>Trifolium Repens</i>), Creeping Buttercup (<i>Ranunculus Repens</i>), Common Hogweed (<i>Heracleum Sphondylium</i>) and Selfheal (<i>Prunella vulgaris</i>). Applicable Secondary codes: 66 – frequently mown
h2a	Hedgerow (Priority Habitat)	Holly (<i>Ilex aquifolium</i>) hedgerow to the west of the site. Applicable secondary codes: 56 – young trees – planted Heavily managed Wild Privet (<i>Ligustrum vulgare</i>) hedgerow around small allotment area. Ground flora under hedge rows consisted of Common Nettle (<i>Urtica dioic</i>) and Broad-leaved Dock (<i>Rumex Obtusifolius</i>) and Common Ivy (<i>Hedera helix</i>) Applicable Secondary codes: 75 – Active management
ud1	Suburban/mosaic of developed/ natural surface	Garden borders consisting of various paving areas, native and non-native shrubs and planters. Along with scattered broad leaf and coniferous trees; Such as Flowering Red Current (<i>Ribes Sanguineum</i>), Magnolia (<i>Magnoliaceae</i>), Forsythia (<i>Forsythia spp</i>), Japanese Laurel (<i>Aucuba Japonica</i>), Copper Beech (<i>Fagus sylvatica 'Purpurea'</i>), Yew (<i>Taxus baccata</i>), Herb Robert (<i>Geranium robertianum</i>), Honey suckle (<i>Lonicera periclymenum</i>), Early Dog-violet (<i>Viola reichenbachiana</i>) Spanish Bluebell (<i>Hyacinthoides hispanica</i>), Holly (<i>Illex aquifolium</i>), Lawson Cypress (<i>Chamaecyparis lawsoniana</i>) Cotoneaster (<i>Cotoneaster frigidus</i>), Cherry Plum (<i>Prunus cerasifera</i>),

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		Rowan (<i>Sorbus aucuparia</i>), Weeping willow (<i>Salix X chrysocoma</i>) and Fox gloves (<i>Digitalis purpurea</i>) The small allotment area consisted of species such as Rhubarb (<i>Rheum rhabarbarum</i>), White Deadnettle (<i>Lamium album</i>), Lords and Ladies (<i>Arum Maculatum</i>) Applicable Secondary codes; 231 – Vegetated Garden 1150 – Flower bed 1160 – Introduced shrub
Target Note	1	Rhododendron (<i>Rhododendron ponticum</i>)
	2	Pilled materials/ possible refugia
	3	Push throughs
	4	Bluebell (<i>Hyacinthoides</i>)

- 7.1.2 One habitat of conservation importance was identified at the western and northern boundaries site boundaries in the form of the UKBAP habitat 'Hedgerows', with the Holly dominated and hedgerow to the west of the site and the Wild Privet hedgerow surrounding the small allotment area and to the north of the site: qualifying due to their composition of 80% or greater native woody species.

7.2 Vegetation

- 7.2.1 One habitat of conservation importance was identified at the western and northern site boundaries as well as around the allotment area in the garden in the form of the UKBAP habitat 'Hedgerows', with the Holly dominated and wild privet dominated hedgerows qualifying due to its composition of 80% or greater native woody species. It is recommended that this hedgerow is retained in full; however, in the event that either hedgerow is removed an equal length of mixed native deciduous hedgerow (see Appendix III) should be planted elsewhere in wider site.
- 7.2.2 One species of potential local priority was identified at the site during the site survey in the south-western corner of the site, Bluebell (*Hyacinthoides*), though is likely the hybrid between English Bluebell and Spanish Bluebell (*Hyacinthoides x massartiana*); this could not be identified to species level at the stage of its growth.
- 7.2.3 One invasive species listed on Schedule 9 of the WCA were encountered in the red line site boundary (see Target Note 1 in Appendix IV), in the form Rhododendron (*Rhododendron ponticum*).

7.3 Bats

- 7.3.1 The adjacent property No. 2 Belgrave Road was also assessed a part of this survey. It is a brick-built building with a slate pitched roof, adorned with rosemary tiles, there are dormers to the northern and western elevations, wooden facias, soffits and barge boards., in keeping with the local area. To the west and south of the property there are single storey slate hipped roof extension, the approximate maximum dimensions do the property are 19m x 16m x 7m (L x W x H).

7.3.2 Internally, the building features two loft spaces (L1 and L2) which cover the entire footprint of the main house. Both lofts could only be viewed from the hatch due the height of the ceilings. L1 the smaller of the two, was approximately 2m x 3m x 2m, on the southern elevation it appeared to be warm and non-draught, with no light ingress. L2 the larger of the 2 could not be viewed in its entirety due the nature of the lay out of the loft. However, it was large open space, warm and non-draughty with no light ingress visible. Given the nature of these spaces, it is considered that this structure meets the breeding preferences of loft-dwelling bats such as the Brown Long-eared bat (*Plecotus auritus*); this is a species that prefers unrestrictive loft spaces with space to fly and consistent thermal qualities, it should also not be discounted for purposes other than maternity use. During the investigation, no evidence of this species was located upon appraisal, despite the wider environment offering favourable foraging and commuting corridors which link the site to the small surrounding areas of woodland.

7.3.3 A bitumastic underfelt is present below the roof tiles; where present, bitumen 1F underfelt or other such underlining typically improves a buildings value to bats, notably for crevice-dwelling bats of the *Pipistrellus* genus, whereby the bats roost between linings and the roof cover material provided external access opportunities exist. Conversely, an absence of roof linings can lower a structures value in the same respect. No evidence of such bats was found; however, this is often the case due to the crevice dwelling nature if 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.*

7.3.4 Externally, the building has a completely tight-fitting roof providing no entry points; furthermore, there were also no suitable potential ingress points around the wooden soffits or at the gable ends or anywhere else on the structure and is considered devoid of any potential roost features. A single gap in the soffit to the north of the property was noted, however this gap was 8cm wide and House sparrows were noted actively carrying nesting material into this gap during the survey. It was therefore deemed unsuitable for use by crevice dwelling bats, the building was thus deemed as holding '**Negligible**' bat roost potential in accordance with Bat Conservation Trust 'Bat Surveys: Good Practice Guidelines' (2016). Based upon this categorisation and taking the BCT guidelines into consideration, no further surveys are required in relation to bats.

7.3.5 All trees contained within the survey area consist of semi-mature to mature broadleaved species, primarily including Copper Beech (*Fagus sylvatica* 'Purpurea'), Ash (*Fraxinus excelsior*) and Silver Birch (*Betula pendula*), Holly (*Ilex aquifolium*) and White beam (*Sorbus aria*). These were all assessed to pertain to a '**Negligible**' categorisation in regard to existing bat roost suitability, owing to the absence of potential roost features such as cracks, crevices/fissures that might otherwise present roosting opportunities to bats.

7.4 Breeding Birds

7.4.1 In relation to Schedule 1 (WCA) specially protected bird species such as Barn owl, no suitability exists for breeding given an absence of appropriate buildings or trees. No value exists on the proposed development site for breeding or hunting and impacts to such species are anticipated.

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7.4.2 During the survey birds were seen carrying nesting material at the site, historic nesting evidence was located within the shrubbery to the west of the site. The hedgerow trees and shrub present through the site have potential to support nesting birds and the proposed development may impact upon these features; Therefore, nesting birds are a material consideration, specifically in relation to timings in relation to the re-development of this site.

7.4.3 The following birds were encountered during the survey (see Table 7.1).

Table 7.1 – Bird species encountered during the survey

Species	Scientific Name	Status	Context (where relevant)
Blue tit	<i>Cyanistes caeruleus</i>	Green	Seen in shrubs along all boundaries
Carrion crow	<i>Corvus corone</i>	Green	Perched in the Copper Beech
Dunnock	<i>Prunella modularis</i>	Amber	Seen in the shrubs to the west of the site
Goldfinch	<i>Carduelis carduelis</i>	Green	Seen commuting across the site
House Sparrow	<i>Passer domesticus</i>	Red	Seen carrying nesting material
Long-tailed tit	<i>Aegithalos caudatus</i>	Green	Foraging green fly off wheelie bin
Robin	<i>Erithacus rubecula</i>	Green	Seen carrying nesting material north of the site
Wren	<i>Troglodytes troglodytes</i>	Amber	Seen in the shrubs and felled material to the south of the 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

7.5.1 Field signs indicative of mammal use were located during the survey in terms of foraging signs such as foraging signs, runs, 'push throughs' across the site; Anecdotal evidence suggests badgers may be present within the area; however, no setts or latrines were located within the site.

European Hedgehog

7.5.2 In relation to European Hedgehog, the habitats present offer moderate foraging and sheltering/hibernation provisions as it currently exists, with areas to hide in the hedgerow. Use of the site by European Hedgehog is possible, and recommendations to prevent risk of injury to individuals of this species are provided in section 8.0.

7.6 Herptiles

Great Crested Newt (GCN)

- 7.6.1 In order to assess risk to GCN, a number of factors need to be considered. These include:
- 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 (50-100m) around the pond(s),
 - Area of site habitat loss and permanence of that loss,
 - Nature of habitat to be lost and its potential value to GCN as refuge/overwintering habitat
- 7.6.2 No ponds are present within the application site; A singular isolated pond exists within 250m of the site boundary no further ponds are present within 500m (see earlier Figure 6.2); The singular pond set with in the grounds of Hillbury Care Home is ornamental in nature (as viewed on aerial imagery), it appears to be a walled pond set within the hard standing of the courtyard. Therefore, it is considered to offer limited value in terms of a breeding pond to GCN, in conjunction with the absence of a suitable pond network and the hostile environment within the immediate vicinity of the pond, it is considered highly unlikely that the pond would hold breeding population of GCN.
- 7.6.3 Therefore GCN are not a material consideration within this report.

Common amphibians

- 7.6.4 Given the surrounding habitats as described the application site could be used by generalist common amphibians including Common Frog (*Rana temporaria*) and Common Toad (*Bufo bufo*), subject to their presence in the landscape.

Reptiles

- 7.6.5 In respect to reptiles their presence on site is unlikely, due to the lack of ecotones, vegetation structure and suitable egg laying habitat. More favourable habitat exists for reptiles within the surrounding area in the form of Erddig allotments, namely Slow worm. However, these habitats are not present within the application site. Thus, the development area is unsuitable for reptiles and impacts to this group of animals can be effectively ruled out given the above.

8.0 Conclusions & Recommendations

Habitats

- 8.1 The priority habitat 'Hedgerows' was recorded within the site as it is recommended that the western and northern hedgerow is maintained within its entirety with a view to condition improvement; in conjunction to being a priority habitat it provides valuable shelter and foraging opportunities for a myriad of species. Additionally, any loss of privet hedge within the site to the east can be mitigated for through native landscaping, such as the planting of a southern hedgerow in place of the current fencing.

Vegetation

- 8.2 One species of potential local priority was identified at the site during the site walkover in the north-eastern corner of the site, Bluebell (*Hyacinthoides*), though is likely the hybrid between English Bluebell and Spanish Bluebell (*Hyacinthoides x massartiana*); could not be identified to species level the stage of its growth. It is recommended that a further site visit takes place to identify the bluebell to species if this area is not being maintained within the landscaping prior to any vegetation clearance.
- 8.3 One species listed as invasive under Schedule 9 of the WCA was identified at the site, in the form of Rhododendron. Whilst it is not an offence for this species' to be present on a site, it is an offence to spread or allow it to spread; to prevent incidental spread of this species during the proposed works it is therefore recommended that a precautionary working method statement with appropriate biosecurity protocol is instated prior to commencement of site works.
- 8.4 To provide an opportunity for Biodiversity Net Gain and to improve the value of the site for native wildlife, a list of appropriate native species that might be incorporated into the proposed development has been supplied (see Appendix III).

Bats

- 8.5 There are no buildings on site, however the adjacent property no 2 Belgrave was assessed and found to offer '**Negligible**' potential. It is understood that this building will not be affected by the proposed development.
- 8.6 All trees on site were assessed to pertain to a '**Negligible**' categorisation in regard to existing bat roost suitability, owing to the absence of potential roost features such as cracks, crevices/fissures that might otherwise present roosting opportunities to bats. However, the trees and the other areas of woody vegetation throughout the site should be considered valuable to bats as potential foraging/commuting habitat, with lines of trees allowing bats to move between favourable habitats.
- 8.7 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, 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

- 8.8 No impacts are applicable in relation to specially protected bird species such as Barn owl, and no further recommendations need be applied in relation to WCA Schedule 1 protected species.
- 8.9 During the survey birds were seen carrying nesting material at the site, historic nesting evidence was located within the shrubbery to the west of the site. Thus, the hedgerows, shrubs and trees provide suitable nesting platforms which could be utilized by breeding birds. Any vegetation clearance or demolition works should therefore be undertaken outside of the breeding birds' season of March-August unless it can be demonstrated by a suitable qualified, professional ecologist that breeding birds are absent beforehand.
- 8.10 It is recommended enhancement for nesting birds be incorporated into the proposed development, as per Appendix III.

Terrestrial Mammals

European Hedgehog

- 8.11 Due to the presence of hedgerows which provide abundant shelter opportunities, and the grassland which provides foraging opportunities, presence of European Hedgehog on the site is considered possible. It is therefore recommended 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 this species.

Herptiles

- 8.12 It is recommended as a precautionary measure to protect amphibians are included within the RAMs recommended within section 8.11. The applicant and all contractors should be aware that in unlikely the event that if at any stage GCN are encountered during works, or at any other stage of the work programme, works would be required to immediately cease and an Ecologist made aware as to provide further guidance in this situation.

In the unlikely event that GCN or their refuge/shelter would be directly impacted upon, including disturbance, an EPSML to legally proceed with the development may be required following detailed further presence/absence surveys.

- 8.13 In respect to reptiles, their presence on site is highly unlikely due to an absence of mosaic habitat with varying vegetation height structure, high disturbance, and poor connectivity, and further contains no egg-laying or hibernation habitat. The development area is thus unsuitable for reptiles and impacts to this group of animals can be effectively ruled out given the above.

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Appendix I: Site Photographs



Plate 1: Site viewed from the south



Plate 2: Site viewed from the west



Plate 3 – Small allotment area

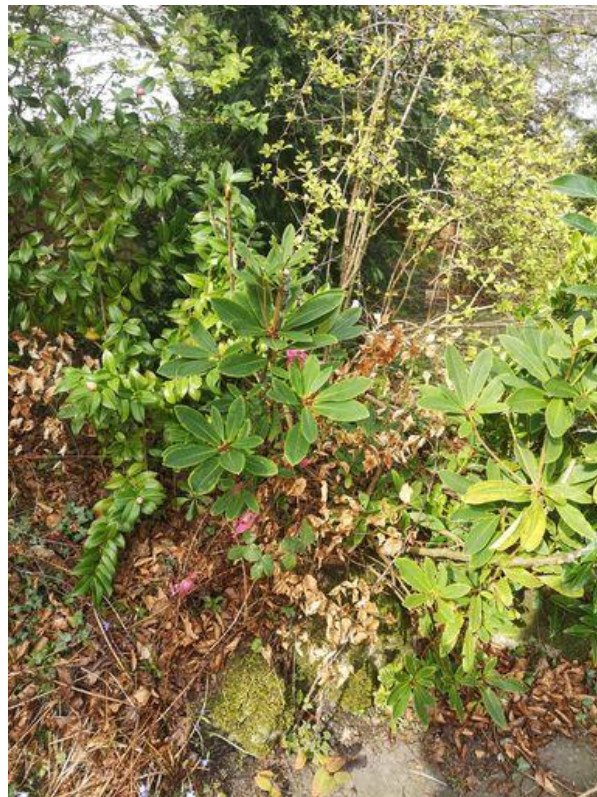


Plate 4: Indicative of rhododendron on site (Target note 1)



Plate 5- Bluebells in the south-west corner of the site



Plate 6 – Northern elevation of No.2 Belgrave Road



Plate 7 – Eastern gable elevation of No. 2 Belgrave Road



Plate 8 -Southern elevation featuring hipped roofed extensions.



Plate 8 – internal Character of Loft 1



Plate 10 - Internal character of Loft 2

Appendix II: Site-Specific Botanical Species List

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

- D = Dominant
- A = Abundant
- F = Frequent*
- Occasional*
- R = Rare*

*These values can be prefixed by the letter L (locally) to provide more subtle biogeographical data.

Phylum	Common Name	Scientific Name	DAFOR
Bryophyta (Mosses)	Springy Turf-moss	<i>Rhytidiadelphus squarrosus</i>	LF
Anthophyta (Flowering plants)	Annual Meadow-grass	<i>Poa annua</i>	F
	Bluebell	<i>Rumex obtusifolius</i>	O
	Broad-leaved Dock	<i>Hyacinthoides spp</i>	F
	Common Comfrey	<i>Symphytum Officinale</i>	O
	Common Hogweed	<i>Heracleum Sphondylium</i>	F
	Common Ivy	<i>Hedera helix</i>	A
	Common Nettle	<i>Urtica dioica</i>	O
	Copper Beech	<i>Fagus sylvatica 'Purpurea'</i>	LF
	Creeping Buttercup	<i>Ranunculus Repen</i>	O
	Cypress	Cypress sp.	R
	Daisy	<i>Bellis perennis</i>	O
	Dandelion	<i>Taraxacum agg.</i>	O
	Early Dog Violet	<i>Viola reichenbachiana</i>	F
	Field Maple	<i>Acer Campestre</i>	R
	Flowering Red Current	<i>Ribes Sanguineum</i>	LF
	Forsythia	<i>Forsythia spp</i>	R
	Foxglove	<i>Digitalis purpurea</i>	LF
	Germander Speedwell	<i>Veronica chamaedrys</i>	R
	Hawthorn	<i>Crataegus monogyna</i>	F
	Hedge Bindweed	<i>Calystegia Sepium</i>	O
	Hern Robert	<i>Geranium robertianum</i>	F
	Holly	<i>Ilex aquifolium</i>	O
	Honey Suckle	<i>Lonicera periclymenum</i>	LF
	Ivy Leaved Toad-flax	<i>Cymbalaria muralis</i>	F
	Japanese Laurel	<i>Aucuba Japonica</i>	LF
	Lawson Cypress	<i>Chamaecyparis lawsoniana</i>	LF
	Lords and Ladies	<i>Arum Maculatum</i>	LF
	Male Fern	<i>Dryopteris filix-mas</i>	O
	Perennial Rye-grass	<i>Lolium perenne</i>	D
	Red Fescue	<i>Festuca rubra</i>	F

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	Rhubarb	<i>Rheum rhabarbarum</i>	R
	Rhododendron	<i>Rhododendron ponticum</i>	Schedule 9
	Selfheal	<i>Prunella vulgaris</i>	A
	Smooth Sow Thistle	<i>Sonchus Oleraceus</i>	O
	Sycamore	<i>Acer pseudoplatanus</i>	R
	Weeping willow	<i>Salix X chrysocoma</i>	R
	White Clover	<i>Trifolium Repens</i>	A
	White Deadnettle	<i>Lamium album</i>	F
	Wild Privet	<i>Taxus baccata</i>	LF
	Woodaven	<i>Holcus Lanatus</i>	O
	Yew	<i>Geum urbanum</i>	A
	Yorkshire Fog	<i>Ligustrum vulgare</i>	LF

Appendix III: Biodiversity Enhancement

Proposed - Native Landscaping

A series of trees, woody shrubs, climbers, herbaceous plants and ferns have been given within the table below which are suitable for incorporation into the proposed development at the land adjacent to Holly Croft Cottage ; the list of plants given below are readily commercially available.

	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>	-
	Crab apple	<i>Malus sylvestris</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>	-

Enhancing a development site for Breeding Birds

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

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

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



Enhancing a development site for 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



Enhancing a development site for Hedgehogs

Hedgehog Home

Specification:

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.

Hedgehog Highway

Hedgehog numbers have dramatically declined in recent years. Research suggests that this is partly because it is becoming harder for hedgehogs to move freely due to an increase in the number of solid walls and fences being erected around gardens. This reduces the available foraging area and so restricts the amount of food that they can eat as well as reducing the possibility of meeting a mate. Creating a hole in a garden wall or fence will allow local hedgehogs to pass through from garden to garden safely.

A hole measuring 13cm by 13cm is the right size for a hedgehog to pass through but too small for most pets. Once you have made your hole in the fence or wall, you can fix the Eco Hedgehog Hole Plate to the fence, ensuring that the hole does not get blocked or stretched. The plate has six screw holes, three along each side, which can be used to fix the plate to your fence or wall. Additional holes can be made in the plastic if required.

The Eco Hedgehog Hole Plate is made from 100% recycled plastic, which is mostly derived from plastic waste from farms across the UK. The plastic hedgehog hole is UV-stabilised so will not rot or degrade over time.



Specification: Material: Low density Polyethylene board (100% recycled plastic)

* Dimensions: Height 26cm x width 23cm

* Entrance Hole: 13cm x 13cm

* Country of Manufacture: England

Appendix IV: Phase 1 Habitat Map

