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Preliminary Ecological Appraisal

April 2023

Royal British Legion

Bersham Road

Bersham

Wrexham

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

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

Executive Summary

As part of a proposed planning application at the Royal British Legion, Berhsam, Tyrer Ecological Consultants Ltd carried out a Preliminary Ecological Appraisal (PEA) in March 2023.

The PEA was commissioned by Blueprint Architectural Services Ltd; the scope of the proposals at the site involves site clearance and redevelopment of the site to include 9 properties.

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:

- **Vegetation:** one UKBAP habitat, a hawthorn hedgerow, runs along the eastern boundary, *it is recommended this is retained in full.*
- **Bats:** Based upon the findings of the survey, covered through sections 6.0 – 7.0 of the report and supported by **Appendix I**, all of the surveyed structures at Berhsam Club 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). *As such, no further survey work is required at the site in relation to bats and building, however Buildings 1 and 2 should be subject to ECoW (see section 8.4-8.5)*
- **Breeding Birds:** In relation to common birds, the trees, vegetation and the hedgerow 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 areas of vegetation or buildings B1-B2, 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. In addition, enhancement is recommended to be built into both the converted structure and the new building.

- **Hedgehog:** The habitat present is considered suitable for commuting, foraging and hibernating by this species.

A series of Reasonable Avoidance Measures (RAMs) are recommended to be undertaken at the site during development, particularly where excavations / trenches will be made. In addition, enhancement measures are recommended to be built into the new development as well as any associated developments in the area.

- **Herpetofauna:** Due to the location of the application site and surrounding habitat as a precautionary approach; *a detailed working Method Statement should therefore be applied, outlining key reasonable avoidance measures (RAMs) and working protocols to*

be in effect during all proposed works to effectively safeguard amphibians, and to be written by a competent ecologist / Ecological Clerk of Works (ECoW).

Enhancement for Biodiversity: In considering PPW (2021) which requires developments to achieve a Net Benefit for Biodiversity (NBB), enhancement ideas that consider the specific scale and nature of the proposals 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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1.0 Introduction & Scope

- 1.1 As part of a proposed planning application at the Royal British Legion, Bersham, Tyrer Ecological Consultants Ltd carried out a Preliminary Ecological Appraisal (PEA) in March 2023.



Figure 1.1: Existing site plan (©Blueprint Architectural Services Ltd).

- 1.2 The PEA was commissioned by Blueprint Architectural Services Ltd; the proposals entail clearance of the site and redevelopment to include nine new properties.
- 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 biodiversity,
- 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).
- One pond on site was scored for great crested newt (GCN) value using the industry standard habitat suitability index (HSI) assessment.

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:

- The Environment (Wales) Act (2016),
- 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) 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 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) 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. 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) 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 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 Planning Policy Wales (PPW) 11th Edition (2021) sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. PPW, the TANs, MTANs and policy clarification letters comprise national planning policy.
- 2.5 PPW and the National Development Framework (published as Future Wales – the National Plan 2040) set out how the planning system at a national, regional and local level can assist in delivering these requirements through Strategic Development Plans (SDPs) and Local Development Plans (LDPs).
- 2.6 PPW (2021) states:

“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. Planning authorities should advise anyone submitting a planning application that they must conform with any statutory species protection provisions affecting the site, and potentially the surrounding area, concerned. An ecological survey to confirm whether a protected species is present and an assessment of the likely impact of the development on a protected species may be required in order to inform the development management process. It is considered best practice that screening to determine the presence

of protected species should be carried out by a competent ecologist on the basis of data provided by the relevant Local Environmental Record Centre.”

- 2.7 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.
- 2.8 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.
- 2.9 The Environment (Wales) Act 2016 (“the Act”) - requires local planning authorities to have regard to area statements in the development of Local Development Plans. The Act introduced an enhanced biodiversity and resilience of ecosystems duty (Section 6 Duty). This duty applies to public authorities in the exercise of their functions in relation to Wales and will help maximise contributions to achieving the well-being goals. The Nature Recovery Action Plan supports this legislative requirement to reverse the decline in biodiversity, address the underlying causes of biodiversity loss by putting nature at the heart of decision-making and increasing the resilience of ecosystems by taking specific action focused around objectives for habitats and species.

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.”

- 2.10 This is further supported by PPW (2021) which requires developments to achieve a Net Benefit for Biodiversity (NBB):

*“Planning authorities must seek to maintain and enhance biodiversity in the exercise of their functions. This means development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a **net benefit for biodiversity**. In doing so planning authorities must also take account of and promote the resilience of ecosystems, in particular the follow aspects:*

- diversity between and within ecosystems;*
- the connections between and within ecosystems;*
- the scale of ecosystems;*
- the condition of ecosystems including their structure and functioning; and*
- the adaptability of ecosystems.”*

- 2.11 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.
- 2.12 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. Policy EC6 of this plan states:

“Measures to improve the biodiversity value of sites and enhance their natural conservation interest and landscape quality including the establishment of local nature reserves, will be supported.”

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 Section 7 of the Environment Act (Wales) places a duty on Welsh Ministers to publish, review and revise lists of types of habitats and species in Wales which they consider are of key significance to sustain and improve biodiversity. The Welsh Ministers must also take all reasonable steps to maintain and enhance the habitats published in these lists, and encourage others to take such steps. Section 7 of 'The Act' alongside 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 priority habitats and species are considered relevant to the survey area:

Habitats:

- Hedgerows & Woodland

Species:

- **Bats:** brown long-eared (*Plecotus auritus*), soprano pipistrelle (*Pipistrellus pygmaeus*), common pipistrelle (*Pipistrellus pipistrellus*) and noctule (*Nyctalus noctula*),
- **Birds:** bullfinch (*Pyrrhula pyrrhula*), house sparrow (*Passer domesticus*), song thrush (*Turdus philomelos*), starling (*Sturnus vulgaris*) and tree sparrow (*Passer montanus*),
- **Land mammals:** hedgehog (*Erinaceus europaeus*),
- **Herpetofauna:** great crested newt (GCN) (*Triturus cristatus*), slow-worm (*Anguis fragilis*), common toad (*Bufo bufo*), common lizard (*Zootoca vivipara*).

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.

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), 'Lle' (A Geo-Portal for Wales) and DataMapWales were all accessed to gather such information. These mapping services were also utilised to locate any priority habitats or publicly viewable protected species records, to help further form conclusions in the context of the study site and the proposed development.
- 4.3 Historic satellite imagery was reviewed using sources such as Google Earth (© 2022/23) 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 COFNOD, has not been sourced at this time, with the combination of online data and the daytime survey data available to the ecologist considered to contain enough information in relation to the protected species likely to be present on site. If, however, a data search is considered to be necessary by the Local Authority or advisory body to better inform the appraisal, a proportionate data search should be commissioned with results interpreted into the conclusions and recommendations of a re-issued/updated report.

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

"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 March 21st 2023 in dry conditions (6°C), average wind 1/12 (Beaufort scale), average 5% cloud cover, by the following surveyor (see **Table 4.1**).

Table 4.1 – Site Surveyor credentials

Name	Description of relevant credentials
Miss. T. Hesketh	Consultant Ecologist with three years professional experience and training; FISC Level 4 (botanical identification); accredited agent on the Class 2 bat license of Mrs. K. Wilding; BSc (Hons) Biology; MSc Conservation Management.

Floristic assessment

- 4.7 The survey methodology 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).

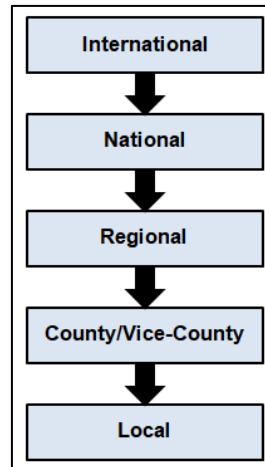


Figure 4.1 – Geographic Frame of Reference entailing degrees of conservation importance

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) externally, comprising an investigation of features (roof material, building components) using a high-powered torch. An internal assessment of the buildings took place with the aid of a high-powered torch for evidence of bat use. Field signs of bats typically comprise bat droppings, incidental animal presence, dead specimens and / or the presence of 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 where present,
- 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 metre 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: *UK wide 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.*

One pond was identified within the application site boundary (Pond 1); no ponds were identified within the wider 250m buffer. Pond 1 was subjected a GCN Habitat Suitability Index (HSI).

Applying the GCN HSI

The GCN Habitat Suitability Index (HSI) is a quantitative measure of habitat quality evaluating the suitability of habitat for the Great Crested Newt. A HSI is a number between 0 and 1, derived from an assessment of ten habitat variables known to influence the presence of newts. An HSI of 1 is optimal habitat (high probability of occurrence), while an HSI of 0 is very poor habitat (minimal probability of occurrence). The HSI is calculated on a single pond basis but takes into account surrounding terrestrial habitat and local pond density. The tool is particularly useful in survey and mitigation; one benefit is that it can be undertaken in a single field visit (with supporting desk work) and at any time of the year (though some variables are more easily measured in spring and summer).

Its main uses are:

- In surveys, to assess habitat quality in a repeatable, objective manner. In particular, the HSI allows individual factors that influence newt presence to be easily identified. These factors could help explain a very high or very low count. A high HSI can justify employing additional survey effort or methods if no newts are found initially.
- In impact assessments, to allow a measure of how damaging a development could be. HSI might also be used as a screening tool to select no impact or minimal impact options.
- In risk assessments, helping to decide whether an offence might be committed, and therefore whether a licence should be applied for. If a pond has a very low HSI score (say <0.5) then there would typically be a minimal chance of GCN presence. Hence, with due care and in limited circumstances the HSI might be used in the absence of newt surveys to help conclude that an offence is highly unlikely and therefore work could proceed in that area without a licence. This application of the HSI should only be used where the

predicted impacts - were newts to be present - would be low (e.g. development at least 100m from pond, permanent habitat loss <0.5ha or temporary habitat loss <5ha). The developer should be aware that there would still be a risk of committing an offence, but it would typically be so low as to be negligible. Obviously, note that if HSI >0.5, this is not confirmation of newt presence; a newt presence/absence survey would be required to confirm this.

- In habitat enhancement, HSI could be used to identify the low-scoring factors in an existing pond that need addressing to improve its quality for newts.
- In post-development monitoring, to allow an assessment of habitat condition.

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

Reptiles

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, 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-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.

4.22 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

- 4.23 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.
- 4.24 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.
- 4.25 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 the surveyor 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 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 outside of the optimal period for carrying out this type of survey. It is considered, however, that sufficient information was obtained during the diurnal appraisal on which to base conclusive ecological recommendations.
- 5.3 The survey took place outside of the active season of bats; when evidence of bats can be less apparent; however, sufficient information can frequently be acquired at any time of year on which to base recommendation in relation to roosting bats.
- 5.4 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 Royal British Legion in Bersham (referred to as “the application site” and “the site”) is located on Bersham Road, in Bersham, Wrexham, approximately 2.7km southwest of Wrexham city centre (see **Figure 6.1**).



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

- 6.2 The immediate habitat is distinctly rural in nature, with the land to the north of the site agricultural with small areas of deciduous woodland, mature treelines and hedgerows lining field boundaries. The River Clywedog runs 120m to the south of the site, the river is lined by deciduous woodland, some of which falls under the ‘Ancient Semi-natural Woodland Site’ category on DataMapWales. A small area of ‘Lowland Fen and Reedbed’ is also mapped along the river (GWC_NRW_SensitiveHabitats – DataMapWales). To the south of the river lies the town of Rhostyllen, comprised of detached and semi-detached dwellings, with areas of green infrastructure limited to front and rear gardens along with small playing fields. The A483 divides landscape to the west of the site.
- 6.3 The extending habitat is consistent with that of the immediate, comprised of further arable land similar in nature to that described above. To the northeast of the site lies the city of Wrexham, which is heavily urbanised, including various infrastructure typically associated with cities, such as supermarkets, schools, commercial and residential areas. The outskirts of Wrexham however support large areas of green infrastructure, including Bellevue Park, Wrexham Cemetery, Green Park and various other playing fields. Semi-natural habitats are somewhat more prominent in the contiguous landscape to the southeast where the National Trust Erdigg Estate dominates the landscape; the site encompasses larger pockets of woodland falling under the ‘Restored Ancient Woodland Site’ and ‘Ancient Semi-natural Woodland’ categories on DataMapWales, along with areas mapped as ‘Lowland Fen’ and ‘Purple More Grass and Rush Pastures’. To the south of the site lies a further industrial estate which gives way to the disused Bersham Bank Colliery.

- 6.4 Collectively, whilst limited in nature, the areas of semi-natural habitat provide a modest assortment of opportunities to several protected species groups, with the group most typically associated with the habitat types described being bats, namely the soprano pipistrelle (*Pipistrellus pygmaeus*) bat, which are typically associated 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 several bird species known to be present in the wider landscape. Terrestrial mammals such as hedgehog are also likely to utilise the aforementioned linear features for commuting.

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.*

- 6.5 While no statutory designated sites for nature conservation occur within 2.0 kilometres of the application site, though the Johnstown Newt Site is located immediately adjacent to the buffer; see **Table 6.1** for site details, see **Figure 6.2** for location of the designated site relative to the application site.

Table 6.1 – Site designations in proximity to the application site

Site name	Designation type	Interest features
Stryt Las A'r Hafod / Johnstown Newt Sites	Sites Of Special Scientific Interest Specially Area of Conservation	Stryt Las a Hafod is a composite site located close to the village of Johnstown, southwest of Wrexham, at an altitude of 130m. It is of special interest for its amphibians. Of particular interest is the population of the great crested newt <i>Triturus cristatus</i> . This species has suffered a marked decline throughout Great Britain and Continental Europe as a result of habitat loss. Great Britain is considered to be one of the strongholds for this species in western Europe. Torch night counts undertaken during the spring have revealed over 250 adult and sub-adult animals on several occasions. They also support significant populations of the commoner amphibian species notably smooth newt <i>Triturus vulgaris</i> , palmate newt <i>T. helveticus</i> , common frog <i>Rana temporaria</i> , and common toad <i>Bufo bufo</i> . Surrounding areas of land support a mosaic of scrub and planted trees, grassland, and tall ruderal vegetation. These form important foraging and overwintering areas for adult and juvenile amphibians.

- 6.6 In relation to ponds, a small plastic garden pond (Pond 1) was located on site however no further waterbodies are present within the 250m of the site boundaries.

Notable species records

- 6.7 A search of extensive company records held by Tyrer Ecological Consultants Ltd from 2014 – present, all of which have been submitted to the LERC serving the area, which in this case is COFNOD, revealed bat records within the 2.0km search buffer. The closest company record dates to 2019 and is located approximately 1.6km southeast of the site within the Erddig country park, pertaining to records of nine species of bat including common pipistrelle, soprano pipistrelle, brown long eared bat, whiskered bat (*Myotis mystacinus*), Brandt's bat (*Myotis*

brandtii), noctule (*Nyctalus noctule*), Daubenton's bat (*Myotis daubentonii*), Natterer's bat (*Myotis nattereri*), and lesser horseshoe (*Rhinolophus hipposideros*).

- 6.8 No records of GCN were located during the desk study search. Information from DataMapWales - 'Potential Habitat for Great Crested Newts' layer inferred that limited potential for this species exists within the wider area (**Figure 6.3**), though these areas are separated from the site by major roads such as the A483, areas of open arable land and the River Clywedog.

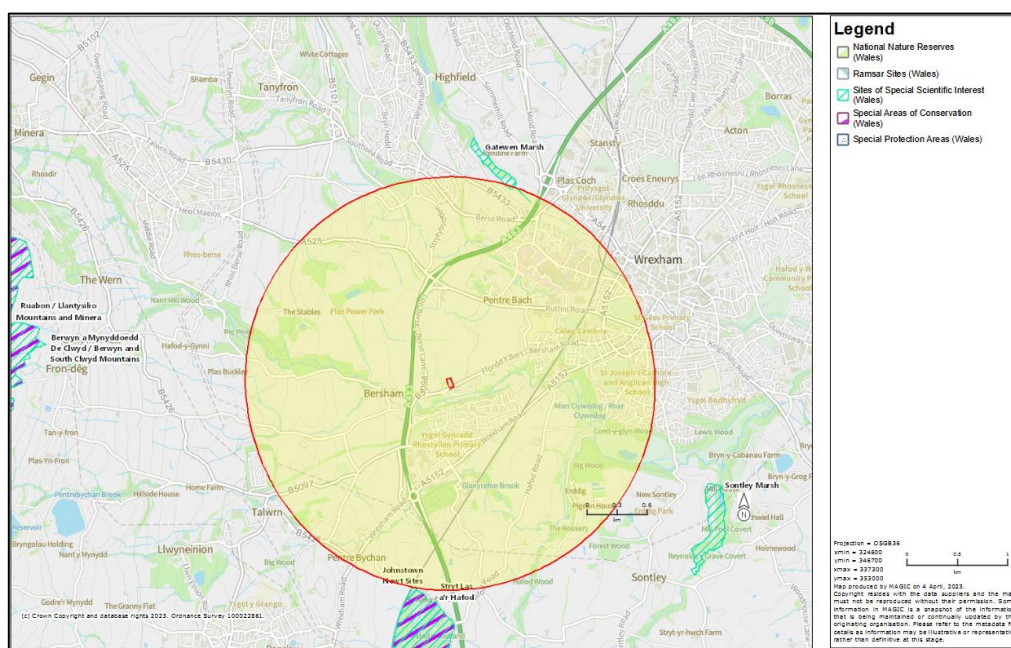


Figure 6.2 – Designated site data for the area within 2.0 kilometres of the application site (Source: MAGIC Maps 2022)

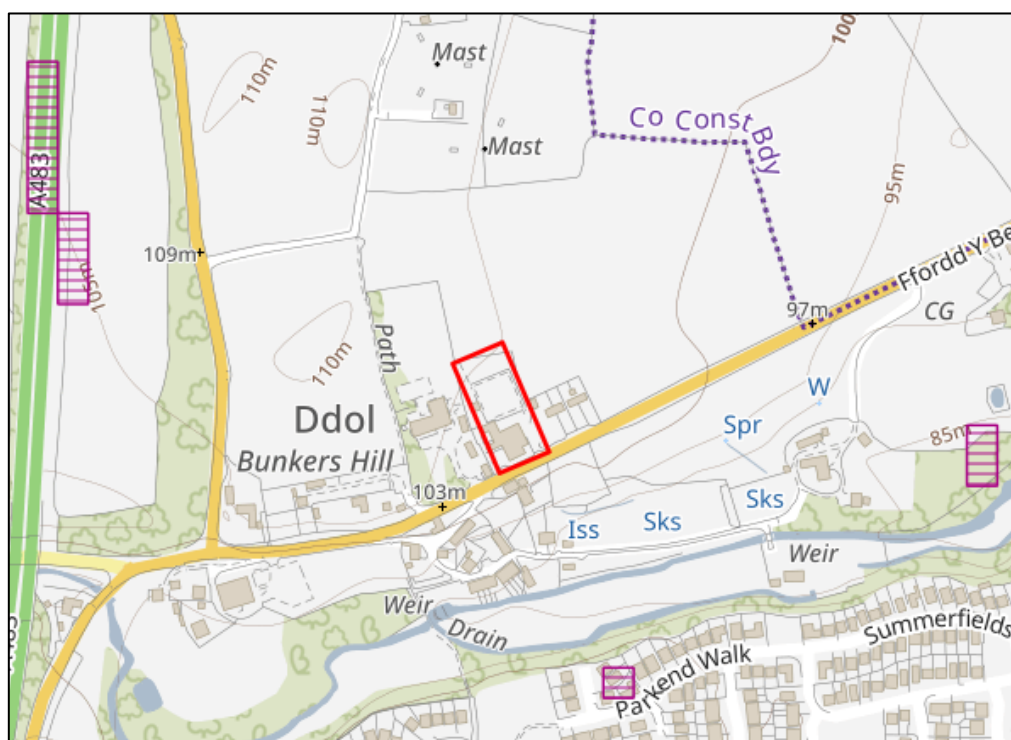


Figure 6.3 – Location of 'Potential Habitat for Great Crested Newts' in reference to the red line boundary (Source: DataMapWales 2022/23)

7.0 Field Survey Results

7.1 Habitat Survey

7.1.1 See **Table 7.1.1** (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
g4 – Modified grassland	75 active management	The grassland on site is modified, with a large portion of it dedicated to a bowling green which displays clear evidence of artificial improvement and management, with much of the grass species being needle-like species such as fescues (<i>Festuca sp.</i>) with small areas of Yorkshire fog (<i>Holcus lanatus</i>) and common bent (<i>Agrostis capillaris</i>) to the borders. There are no species indicative of any specific soil type, with a range of graminoids indicating a neutral grassland, such as red fescue (<i>Festuca rubra</i>), perennial rye-grass (<i>Lolium perenne</i>), cock's-foot (<i>Dactylis glomerata</i>) and Yorkshire-fog also present. Forbs such as green alkanet (<i>Pentaglottis sempervirens</i>), creeping buttercup (<i>Ranunculus repens</i>), common daisy (<i>Bellis perennis</i>) and dandelion (<i>Taraxacum sp.</i>) were also recorded.
u1b5 – Buildings	-	There are five buildings positioned within the red line boundary of the site; see Table 7.3.1 for further information on the construction style and size of these buildings.
u1b6 – Other developed land	-	Sealed surface hardstanding is present across much of the site, which is utilised as parking/access.
u231 – Vegetated Garden	48 Non-native	Small areas of planting exist along the eastern boundary and include species such as common lilac (<i>Syringa vulgaris</i>) and rosemary (<i>Salvia Rosmarinus</i>), along with other such species such as red dead-nettle (<i>Lamium purpureum</i>) and shining crane's-bill (<i>Geranium lucidum</i>).
w1g7 – Other broadleaved woodland types	-	A small area of broad-leaved woodland is north of the site; the majority of this is outside of the site boundary with exception of a small area of willow (<i>Salix sp.</i>) and elder (<i>Sambucus nigra</i>).
Linear Habitats	Sec. Codes	Description
h2a - Hedgerow (priority habitat)	80 Unmanaged	The hedgerow along the eastern boundary of the site, comprise of native species such as hawthorn (<i>Crataegus monogyna</i>) and elder.

u1e – Built linear feature	69 Fence	A fence forms part of the western and northern boundary of the site, being of timber post and wire construction.
u1e – Built linear feature	68 Mortared wall	Mortared wall along the front of the property.
Target Notes		
1	Location of pond	
2	Location of cleared trees	
3	Pile of woodchips	

7.2 Vegetation

Notable species and habitats

- 7.2.1 No species of conservation importance were located anywhere within the site during the appraisal. One UKBAP habitat, a hawthorn dominated hedgerow, runs along the eastern boundary.

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 red line boundary of the site 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** describes each building in respect to their potential to offer roosting features for bats (both internally and externally) and includes further information regarding evidence or lack of evidence of bats, where applicable.
- 7.3.2 All trees present were found to be absent of PRFs such as rot holes, cracks, splits, peeling bark or woodpecker holes and are duly categorised as pertaining to '**Negligible**' bat roost potential in line with current BCT guidance.
- 7.3.3 All taller vegetation, namely the small area of woodland to the north-east and eastern boundary hedgerow, should be considered of value to commuting and foraging bats whereby such features act as both landmarks for navigating and foci around which invertebrate prey species gather.

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

Building B1 - Club

B1 is a flat-roofed building with multiple outriggers, constructed of brick and breezeblock with a rendered finish, featuring UVPC windows, doors, guttering and soffit boxes, with exterior lighting across the external elevations. The building is to the approximate maximum dimensions of 34m x 26m x 4m (length x width x height), and whilst the surveyor is not qualified to assess structural integrity, was judged to be in fair aesthetic condition with no major signs of dereliction or vandalism.



Internally, no loft space is present, though a small roof void is likely to exist between the false ceiling and the roof. The interior of the building is actively utilised as a social club and thus subject to frequent human disturbance; the space is open, draughty and illuminated.

Building B1 is therefore considered unsuitable for the breeding purposes of loft-dwelling species such as brown long-eared bats, which require a dark space with consistent thermal attributes for their maternity colonies; however, this does not necessarily discount the use of the building for other purposes than breeding, though no evidence including droppings or prey items indicative of such bats was encountered despite a meticulous search.

It was not possible to ascertain the presence or absence of a roof lining beneath the roofing materials of B1; where present a bitumen 1F underlining or similar traditional roof lining can significantly improve a building's value to bats, notably for crevice-dwelling species of the *Pipistrellus* genus, whereby the bats roost between the lining and the roof cover material provided external ingress opportunities. No evidence of *Pipistrellus* bats was identified, at the site; 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, extremely limited PRFs were located on the building on the western and eastern elevation in the form of minor lifting of the roofing felt, though these features were found to be non-extensive.

Taking into account the lack of suitable PRFs as well as the generally unfavourable nature of the internal space, building B1 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). Recommendations in relation to the areas of lifted roofing felt have been provided in section 8.0.

Building B2

B2 is a detached, breezeblock built, single-storey structure with a pitched, corrugated roof, with estimated maximum dimensions of 6m x 7m x 3m. To the front of the building is an open-sided timber and steel lean-to constructed of timber and steel with a steel corrugated roof.



No loft space is present within the structure, with a false panel ceiling beneath the roofing steels creating a small void. The interior is cold, very draughty and highly illuminated, and is considered generally unsuitable for the roosting purposes of bats.

Limited ingress points were located at the gable elevations in form of small gaps at wall plate level, however, the internal climatic conditions of the building are unsuitable for bats and these ingress opportunities don't lead to any more suitable crevices that might typically be utilised by roosting bats.

Building 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). Recommendations in relation to the limited ingress points have been provided in section 8.0.

Building B3 – Storage container

B3 is a steel storage locker, which was found to be entirely absent of viable ingress opportunities or potential roost features for bats.

Building B3 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 B4 – Timber Shed

B4 is a detached, single-skin timber shed, with a mono-pitch roof, and a timber door.

Internally the shed is open, draughty, and cool. The structure is subject to regular disturbance due to its use as maintenance equipment storage for the bowling green.

Externally, no PRFs were located on the structure, with all of the elements being tight fitting.

B4 is, therefore, 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 B5 – Electric unit

B5 is a steel electrical cupboard, the structure supports no potential features for roosting bats and 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).



Figure 7.3.1 – Locations of the buildings within the red line boundary (Adapted from Google Earth Pro 2022/23)

7.4 Breeding Birds

- 7.4.1 In relation to WCA Schedule 1 specially protected bird species such as barn owl, whilst the surrounding habitat to the north may provide high-quality foraging habitat, no suitable nesting platforms exist on site for this species and no evidence of this or any other schedule one species as observed during the site visit.
- 7.4.2 In relation to wider breeding birds, a number of active and historic nests attributable to small, common passerines such as robins (*Erithacus rubecula*) were observed throughout the site, both within the trees and the hedgerows / other vegetation within the red line boundary. Given the presence of ingress points at B1 and B2 as described in section 7.3, there is also a degree of nesting potential at these structures, whereby access into the buildings would provide suitable nesting platforms for birds adapted to urbanisation, notable including house sparrows, whilst swallows might utilise the open-sided section of B2 for example.
- 7.4.3 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)
Blackbird	<i>Turdus merula</i>	Green	Observed in hedgerow
Dunnoek	<i>Prunella modularis</i>	Amber	Observed in line of trees

Species	Scientific Name	Status	Context (where relevant)
Pied Wagtail	<i>Motacilla alba</i>	Green	On the bowling green
Robin	<i>Erithacus rubecula</i>	Green	Observed in line of trees
Woodpigeon	<i>Columba palumbus</i>	Amber	Commuted 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 No field signs were located to suggest the presence of badgers, including any setts, latrines, pathways, hairs, footprints or feeding signs such as snuffle holes and scratched trees/logs. The site is generally unsuitable for this species, and their presence at the site is unlikely.
- 7.5.2 In respect of hedgehogs, the site provides good quality foraging habitat in the form of open grassland as well as sheltering and commuting opportunities such as dense vegetation and the boundary features (hedgerows, tree lines). Given the commuting pathways in and around the site, the presence of this species within the site boundary is considered highly likely.

7.6 Herpetofauna

GCN

- 7.6.1 In respect of GCN, a single pond is located on the site; this pond is a ready-made plastic liner with steep sides, overgrown with terrestrial vegetation, this pond was subject to a (HSI) assessment.
- 7.6.2 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.
- 7.6.3 Pond 1 was subject to a HSI assessment, the results of which are presented overleaf (see **Table 7.6.1-7.6.2**).

Table 7.6.1 - HSI Quantitative Assessment of Pond 1

Pond ref	Pond 1	Summary of results
SI1 - Location	1	Optimal range
SI2 - Pond area	0.05	Smaller than 50m ² - use a score of 0.05
SI3 - Pond drying	0.1	Dries annually
SI4 - Water quality	-	Water quality not assessed
SI4 - Shade	1	Not Shaded
SI6 - Fowl	1	Not suitable for fowl.
SI7 - Fish	1	Unlikely to support first due to dense terrestrial vegetation in pond.
SI8 - Ponds	0.8	6 ponds within 1km
SI9 - Terr'l habitat	0.33	Most of surrounding habitat either intensively mown amenity areas or developed, with sporadic scrub
SI10 - Macrophytes	0.3	No macrophyte cover present as the pond is overgrown with terrestrial vegetation.
HSI	0.42	'Poor', estimated 0.03% chance of use as a breeding pond

Table 7.6.2 - HSI scoring chart displaying suitability rating relative to HSI score (a suitability scoring method for GCN developed by Mr. L. Brady)

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

7.6.4 The application site itself provides poor habitat for GCN; the majority of the site consists of hardstanding, much of which is utilised as parking, the grassland on site is largely modified and used for amenity purposes. Very limited potential foraging/commuting habitat exists in the form of hedgerows and the adjacent woodland edge, however, these areas are subject to regular management and heavy traffic.

7.6.5 Taking into account the 'Poor' HSI score of Pond 1, the lack of connectivity between suitable habitat recorded within in the DataMapWales - 'Potential Habitat for Great Crested Newts' layer and the application site, and the absence of a pond network within the surrounding area, the presence of GCN at the site is highly unlikely.

Wider herpetofauna

7.6.6 Given the surrounding habitats, which includes the aforementioned river, as well as linear hedgerows and tree lines, the application site could be feasibly 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 With respect to reptiles, the site is entirely absent of hunting or refuge habitat and taking into account the current management regime and high levels of disturbance, the site is considered entirely unsuitable for any reptile species.

Invertebrates

7.7.1 An assessment of habitats and features on site found to be absent of valuable ecotones, though deadwood is present in the form of log piles. The site is unlikely to host significant invertebrate assemblages or specially protected species.

8.0 Conclusions & Recommendations

Habitats & Vegetation

- 8.1 No species of conservation importance were identified within the application site boundary; however, one UKBAP habitat, a hawthorn hedgerow, runs along the eastern boundary. It is therefore recommended that this habitat is retained in full.
- 8.2 No Schedule 9 (WCA) INNS were recorded on site during the diurnal appraisal.
- 8.3 As a means of improving biodiversity value / enhancing the site in line with NBB, 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**.

Bats

- 8.4 Based upon the findings of the survey, covered through sections 6.0 – 7.0 of the report and supported by **Appendix I**, all of the surveyed structures at Royal British Legion 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). As such, no further survey work is required at the site in relation to bats and buildings.

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

- 8.5 Whilst no further surveys in the form of dusk/dawn emergence / re-entry surveys are recommended, however, despite B1 and B2 pertaining to negligible suitability, very minor potential ingress points/PRFs that might be utilised opportunistically by singular bats were noted at both structures. Purely as a precautionary measure, the proposed removal of these features is completed under supervision by a suitably licenced ecologist, or Ecological Clerk of Works (ECoW). During the demolition these areas at B1 and B2 will be subject to inspection using a torch and/or endoscope prior to the commencement of work, to inspect the space for the unlikely presence of bats or bat droppings.
- 8.6 If absent the works should proceed to completion. However, if bat/s is/are located, work will cease, the area made good and subsequent dusk/dawn observations will need to be completed. A granted European protected species mitigation licence (EPSML) would further be required to legally proceed with the scheme.
- 8.7 Bats are a transient species and buildings can deteriorate over time. In the highly unlikely event that bat(s), or evidence of bat(s), are found during proposed works unsupervised by the ECoW, then as a legal requirement the work at the site should immediately cease and an Ecologist 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** for indicative evidence of bats.



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

- 8.8 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.

- 8.9 No recommendations are necessary regarding bats and trees, with none of the trees on site offering any bat roost potential. Trees within the red line boundary should, however, be considered valuable to bats in a local context in that they provide valuable foraging/commuting habitat to bats, offering shelter, cover and habitat connectivity when in foliage. Should any trees be lost, then it is recommended that they be replaced / replanted at a 2:1 ratio.

Breeding Birds

- 8.10 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.
- 8.11 In relation to common birds, B1 and B2, the trees, vegetation and the hedgerows offer small birds a plethora of nesting opportunities, particularly during the breeding bird season, with numerous nests located within vegetation around the site.
- 8.12 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 areas of vegetation, should be checked by a professional Ecologist for nesting birds within 48 hours or less prior to works commencing.
- 8.13 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. In addition, enhancement is recommended to be built into both the converted structure and the new building.

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

- 8.14 Whilst no direct evidence of badger or hedgehog was identified within the survey boundary, the habitat present is considered suitable for commuting, foraging and hibernating by hedgehog. As such, a series of RAMs are recommended to be undertaken 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.

8.15 In addition, enhancement measures are recommended to be incorporated into the new development to safeguard to value of the site for this species; see **Appendix III**.

Herpetofauna

GCN

8.16 The application site is generally absent of habitat suitable for GCN, and this species can be effectively ruled out as an ecological constraint in relation to the development proposals.

8.17 Given the location of the site, the local planning guidance note '**GREAT CRESTED NEWT MITIGATION REQUIREMENTS – Johnstown Newt Site SAC and the Wider Countryside**' was utilised to help inform any conclusions or recommendations relating to this species. The application site sits 2.0km from Johnstown Newt Site and is thus outside of the 500-metre buffer surrounding the Special Area of Conservation (SAC). The proposed development is also considered a 'Minor Development'. Thus, in line with **Table 2** - D2 of this guidance note, mitigation is not an automatic requirement in regard to this species.

8.18 Therefore, as a precautionary approach due to the known presence of large populations of GCN within the wider Wrexham area; a detailed working Method Statement should therefore be applied, outlining key reasonable avoidance measures (RAMs) and working protocols to be in effect during all proposed works to effectively safeguard amphibians, and to be written by a competent ecologist / Ecological Clerk of Works (ECoW).

Upon gaining understanding of the details contained within the RAMs and signing the audit form the applicant would be expected to comply with the measures recommended by the ecologist / ECoW. It is recommended this should be stipulated as a pre-commencement planning condition. This would be subject to the approval of the local planning authority – following approval, strict adherence to the terms of the RAMs would be a requirement of the named authority and the applicant would be the liable party, with the ecologist/ECoW acting for and on behalf of the applicant.

The applicant and all contractors would be aware that if at any stage a newt is encountered during works, or at any other stage of the work programme, works would be required to immediately cease and the Ecologist/ECoW made aware as to provide further guidance in this situation, if an ecologist/ECoW is not already present on site.

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

Wider Herpetofauna

8.20 Common frogs and common toads, may utilise the site occasionally, should such an amphibian be encountered during the proposed works, it is recommended that they be carefully picked up in wetted gloves and transferred to shaded semi-natural habitat beyond the northern site boundary, away from the works area.

- 8.21 Reptiles are unlikely to utilise the site due to an absence of suitable habitats, and there are no further recommendations in relation to this taxon.

Invertebrates

- 8.22 Though the site in its current state is unlikely to host any significant invertebrate species or assemblages of species, general enhancement ideas have been provided in **Appendix III** that the applicant might consider incorporating into the development.

Biodiversity Enhancement

- 8.23 In considering PPW (2021) which requires developments to achieve a Net Benefit for Biodiversity (NBB), enhancement ideas that consider the specific scale and nature of the proposals 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 – Building B1 viewed from the southwest



Plate 2 – Minor lifting of the roofing felt on B1



Plate 3 – On site Pond



Plate 4 – Building 2 viewed from the north



Plate 5 – Building 3 Storage container.



Plate 6 – Timber storage



Plate 7 – Building 5 – Electrical unit



Plate 8 – Hard standing



Plate 9 –Felled trees



Plate 10 – Bowling green



Plate 11 – Parking to the north of the site

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).

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

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

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

Abundance	Common Name	Scientific Name
R	Bramble	<i>Rubus 'fruticosus'</i>
LA	Broad-leaved Dock	<i>Rumex obtusifolius</i>
R	Chickweed species	<i>Stellaria sp.</i>
R	Cleavers	<i>Galium aparine</i>
O	Cock's-foot	<i>Dactylis glomerata</i>
R	Common Bent	<i>Agrostis capillaris</i>
O	Common Hogweed	<i>Heracleum sphondylium</i>
R	Common lilac	<i>Syringa vulgaris</i>
R	Common Nettle	<i>Urtica dioica</i>
O	Common Ragwort	<i>Senecio jacobaea</i>
R	Cow Parsley	<i>Anthriscus sylvestris</i>
R	Dandelion	<i>Taraxacum officinale agg.</i>
R	Dead-nettle species	<i>Lamium sp.</i>
R	Foxgloves	<i>Digitalis purpurea</i>
O	Green alkanet	<i>Pentaglottis sempervirens</i>
R	Greater Plantain	<i>Plantago major</i>
D	<i>Lolium perenne</i>	<i>Perennial rye-grass</i>
R	Hart's-tongue Fern	<i>Asplenium scolopendrium</i>
R	Hawthorn	<i>Crataegus monogyna</i>
R	Ivy	<i>Hedera helix</i>
LD	Meadow Buttercup	<i>Ranunculus acris</i>
R	Pendulous Sedge	<i>Carex pendula</i>
LO	Perennial Rye-grass	<i>Lolium perenne</i>
O	Petty Spurge	<i>Euphorbia peplus</i>
R	Pineapple-weed	<i>Matricaria discoidea</i>

R	Prickly Sow-thistle	<i>Sonchus asper</i>
D	Red fescue	<i>Festuca rubra</i>
R	Rosebay Willowherb	<i>Chamerion angustifolium</i>
O	Rosmary	<i>Salvia Rosmarinus</i>
R	Springy Turf-moss	<i>Rhytidiadelphus squarrosus</i>
R	Willow species	<i>Salix sp.</i>
O	Yorkshire-fog	<i>Holcus lanatus</i>

Appendix III: Biodiversity Enhancement: General Recommendations

Bats

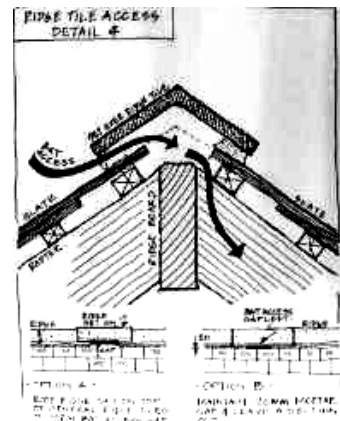
Integrated bat box

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 Birds – House Sparrow

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



Breeding Birds - Wagtail

The robin box is an open-fronted nest box. As well as providing a suitable nest box for robins, it's also ideal for other birds that use open-fronted boxes such as wrens, pied wagtails and spotted flycatchers. Fixing to the wall or tree is easy with three concealed mounting holes in the back of the box (located opposite the entrance hole for easy access). Often this is the only fixing needed, but a further hole is provided at the base for additional stability. The easiest way to mount the box is to remove the inner, fix the outer shell onto the tree or wall, then slide the inner roost chamber back into the box and secure it in place.



Breeding Birds – Other

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

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



Hedgehog Home

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.

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

Invertebrates – Insect Hotels

This large wooden insect hotel includes a number of habitats for a variety of insects. It's large enough to create a focal point in a wildlife garden and sturdy enough to last for years. This bug hotel is made from untreated wood, which is important as insects need natural materials to thrive, and it's split into seven sections that each contain a different nesting material. There are pine cones for ladybirds, wood slits for butterflies and moths, bamboo canes for solitary bees, and loose pieces of wood for beetles.

Placement: Size against a wall and fix to prevent it toppling.

The feet keep the main body off the damp ground. You could push bricks against them to keep the bug hotel upright, which would also encourage woodlice and even frogs that enjoy cool stone conditions. Alternatively, bug hotels can be created easily using raw materials on site, or items brought to site.



Main material: wood.

Size: Height (cm): 100.00, Length (cm): 62.00, Depth (in cm): 16.00

Other features:

Weight (kg): 14.00kg

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>	-
	Gelder Rose	<i>Viburnum opulus</i>	-
	Hawthorn	<i>Crataegus monogyna</i>	-
	Hazel	<i>Corylus avellana</i>	-
	Holly	<i>Ilex aquifolium</i>	-
Trees	Alder Buckthorn	<i>Frangula alnus</i>	-
	Osier	<i>Salix viminalis</i>	-
	Pedunculate Oak	<i>Quercus robur</i>	-
	Purple Willow	<i>Salix purpurea</i>	-
	Rowan	<i>Sorbus aucuparia</i>	-
	Silver Birch	<i>Betula pendula</i>	-
	Wild Cherry	<i>Prunus avium</i>	-
	Wych Elm	<i>Ulmus glabra</i>	-

