Tyrer Ecological Consultants Ltd
Specialists in Protected Species

Bringing Together Over 30 Years of
Ecological Excellence

Tyrer Ecological Consultants Ltd, Roselands, Suites 1, 2 & 5, 3, Cross Green, Formby, L37 4BH

Preliminary Ecological Appraisal

July 2025

Project Reference: PR-25-0105

Former Methodist Church
Pont-y-blew
Chirk
Wrexham
LL14 5BH

National Grid Reference: SJ 31101 38362



Document Title	Preliminary Ecological Appraisal
Project Reference	PR-25-0105
Issue Number	1.0
Prepared for	Blueprint Architectural
Prepared by	Tyrer Ecological Consultants Ltd

Surveyors	Mr. J. Hark Qualifying CIEEM
Author	Mr. J. Hark Qualifying CIEEM
Survey Date	09/04/2025
Reviewed by	Mr. J. Pescod ACIEEM
Review Date	09/07/2025
Approved by	Mrs. K. Wilding CEnv MIEMA ACIEEM
Date of Issue	10/07/2025

Terms of use:

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

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

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

This report is confidential to the client.

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

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

Executive Summary

As part of a proposed planning application with Wrexham Country Borough Council concerning the Former Methodist Chapel, Pont-y-blew, Tyrer Ecological Consultants carried out a Preliminary Ecological Appraisal (PEA) in April 2025.

The PEA was commissioned by Blueprint Architectural Services; proposals are understood to involve the conversion of the existing former chapel building into a single residence, formation of parking spaces and installation of a septic tank system in the wider ownership.

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

Key recommendations:

Designated Sites

The site is located within very close proximity (0.02km) of the River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC/SSSI, however the proposals are of a minor nature, and it is therefore considered that the works will not impact the designated sites.

*See **Section 7.1** for further details.*

Habitats

Native hedgerow, which is classified as a priority habitat under Section 7 of the Natural Environment and Rural Communities (NERC) Act 2006, was identified within along the north-eastern site boundary.

*It is recommended that a habitat management and monitoring plan (HMMP) is commissioned to detail the ongoing management of the priority habitat. See **Section 7.2-7.6** for further details.*

Vegetation

A single INNS listed on either Schedule 9 of the WCA was recorded on site, namely rhododendron. Given the location within the dense garden shrubberies which cover the front door of the chapel, it is considered that construction works, inclusive of all vegetation clearance and demolition, could feasibly spread this species further.

*To prevent further spread of these species from within the site, it is recommended that all invasive species are eradicated from the site prior to development, see **Section 7.7-7.10** for further details.*

Bats

A total of three structures are present on site. B1 was categorised as pertaining to bat roost suitability of '**Low**', in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023).

*It is recommended that **a single dusk / emergence survey** is conducted during the active season of bats (May – August, extending into September), in order to establish if / how the building is being used by bats, and if so, identify the species present, abundance, roost*

*locations and flight lines around the site following emergence surveys. A total of **2 surveyors** would be required to cover all elevations host to roost potential.*

B2 was categorised as of '**Negligible**' bat roost suitability, whilst B3 was categorised as pertaining to a bat roost suitability of '**None**'.

*Further information, including in relation to the supervision of any works at B2, is provided in **Sections 7.13-15**.*

Birds

Regarding wider breeding bird species, no direct evidence of breeding birds was encountered within the site, however, vegetation across the site, especially individual trees, hedges and garden shrubs, presents a plethora of potential nesting platforms for a wide range of bird species within the nesting bird season of March – August, inclusive.

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

Other terrestrial mammals

Hedgehog and otter have the potential to be impacted upon by the works.

*A programme of Reasonable Avoidance Measures (RAMs) with specific measures tailored for each of these species is recommended to be enacted on the site to prevent impacting these species. See **Section 7.22-7.25** for details.*

GCN

The proposals could present a kill / injury / disturbance risk, should GCN be present on site during any construction activity, especially as the proposals include the loss of the on-site pond (P1), but also including the possibility for opportunistic use of areas for shelter and / or once the area becomes a construction site

*To this end, it is considered that an Environmental DNA (eDNA) survey should be undertaken at **P1 and P2** to reasonably ascertain presence / absence of GCN within the on-site and site-adjacent ponds. The results could scope in a wider assessment and allow a more robust impact assessment and suite of subsequent recommendations to be arrived at. See section **7.26-7.30** for further details*

Other herpetofauna

Common amphibians have the potential to be impacted upon by the works.

The RAMs discussed should be extended to cover generalist amphibians.

Green Infrastructure

The key green infrastructure present on site is considered to be the individual trees and hedgerows. Some of which are indicated to be retained, whilst some individual trees will be lost and compensated via native tree planting.

It is therefore considered that, by following the above approach, the scheme will not have an adverse impact on the diversity, extent, condition, connectivity or the adaptability of the green infrastructure on site.

Table of Contents

1.0 Introduction & Scope

2.0 Legislation & Policy

3.0 Methodology

4.0 Limitations

5.0 Desk Study Results

6.0 Field Study Results

- **6.1** Habitat Survey
- **6.2** Vegetation
- **6.3** Bats
- **6.4** Birds
- **6.5** Other Terrestrial Mammals
- **6.6** Herpetofauna
- **6.7** Invertebrates

7.0 Conclusions & Recommendations

8.0 Green Infrastructure Statement

9.0 Bibliography

Appendix I: Site Photographs

Appendix II: Botanical Species List

Appendix III: Biodiversity Enhancement: General Recommendations

Appendix VI: UK Habs map

1.0 Introduction & Scope

1.1 As part of a proposed planning application with Wrexham Country Borough Council concerning the Former Methodist Chapel, Pont-y-blew, Tyrer Ecological Consultants carried out a Preliminary Ecological Appraisal (PEA) in April 2025.

1.2 The PEA was commissioned by Blueprint Architectural Services; proposals are understood to involve the conversion of the existing chapel building into a single residence, formation of parking spaces and installation of a septic tank system. See **Figure 1.1** below for a proposed post-development site plan.

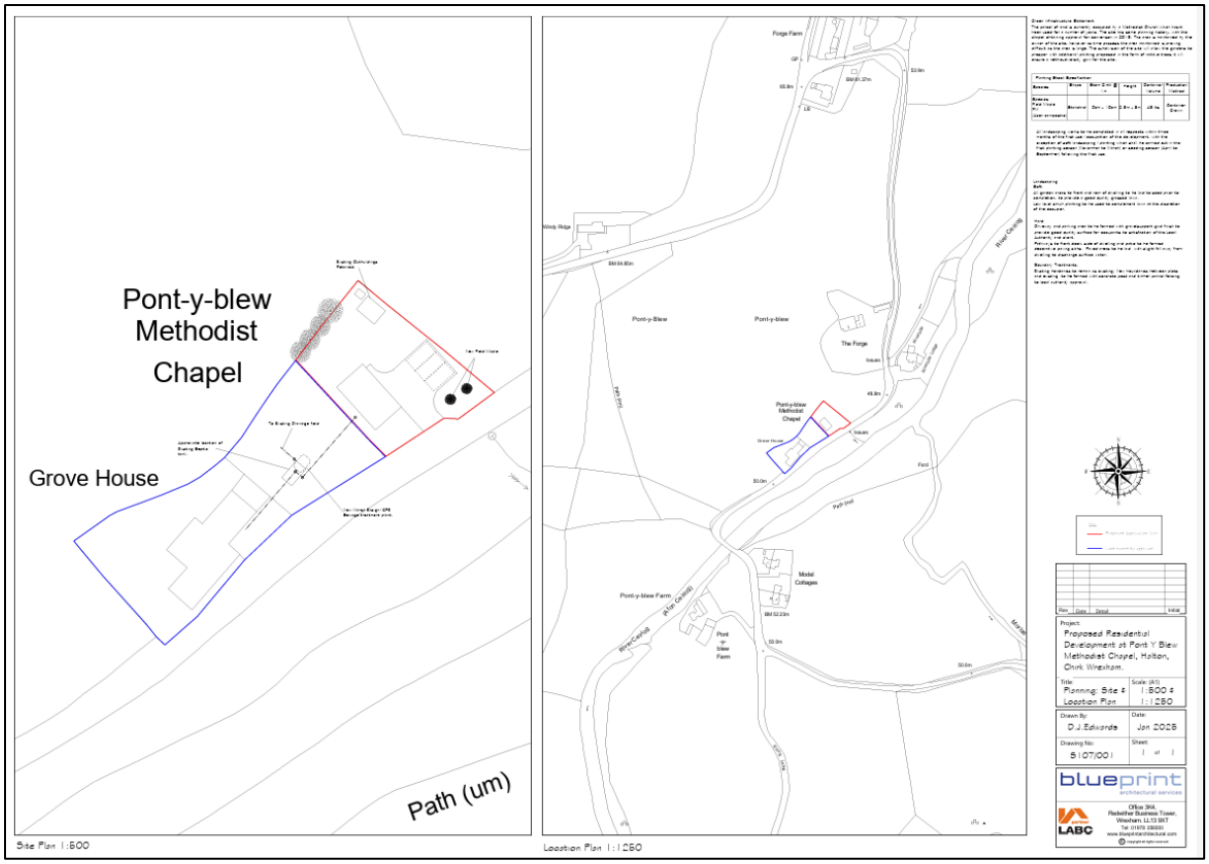


Figure 1.1 – *Proposed post-development site plan (© Blueprint Architectural Services)*

1.3 As part of the Local Planning Authorities (LPA) planning policies and obligations to the Planning Framework, ecological surveys are generally required prior to planning permission being granted, particularly where protected / priority habitats or species are, or may be, present, and where these species have the potential to be impacted by the proposals for which the applicant seeks consent.

1.4 The PEA was carried out in accordance with the 'Guidelines for Preliminary Ecological Appraisal, 2nd Edition' (CIEEM, 2017) and all associated 'CIEEM Competencies for Species Survey (CSS)', whilst this report has been presented in accordance with the British Standard 42020:2013 Biodiversity – Code of Practice for Planning and Development.

Aims & Objectives

1.5 The appraisal aims to ascertain the baseline nature of the site and, where possible, obtain information on any priority wildlife habitats, or species, that may be present and if so determine if they will be affected by the proposals. The survey, therefore, includes the following objectives:

- Gather and present baseline ecological information on site/off site (as necessary) within a suitable report,
- Identify, measure and map habitats using UK Habitat Classification – Habitat Definitions Version 2.0 (2023) habitats,
- Identify any likely ecological constraints associated with the proposals for the site (i.e. the presence of protected / priority habitats or species that exist within the confines of the application boundary, or zone of influence (ZOI),
- Identify measures likely to be required in line with the mitigation hierarchy (i.e. impact avoidance > minimisation > mitigation > compensation),
- Identify any additional survey requirements,
- Identify general enhancement opportunities for biodiversity in line with national and local planning policy,
- Set out any requirements for post-development monitoring, management, or other commitments, and how they can be secured, where required.

1.6 As a functioning component of this specific ecological appraisal:

- Habitats on site were identified, using the UK Habitat Classification – Habitat Definitions Version 2.0 (2023),
- Buildings and trees were subject to preliminary roost assessment (PRA) for Bats and scored against the bat roost suitability parameters defined in the Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023),
- Ponds within 250m, where accessible, were assessed relative to their potential to host a breeding population of GCN,
- A waterway was assessed in relation to its potential to host water vole (*Arvicola amphibius*) and otter (*Lutra lutra*),
- In accordance with Welsh planning policy, opportunities were identified for the site to achieve net biodiversity benefit, and to provide information to satisfy the requirements of a green infrastructure statement.

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

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

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

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

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

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

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

2.0 Legislation & Policy

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

- BS 42020:2013 Biodiversity – Code of Practice for Planning and Development (2013),
- Conservation of Habitats and Species Regulations (2019) (EU Exit),
- Countryside Rights of Way (CRoW) Act (2000),
- Natural Environment and Rural Communities (NERC) Act (2006),
- National Planning Policy Framework (2023) (as last revised),
- Protection of Badgers Act (1992),
- The Environment (Wales) Act (2016),
- The Hedgerow Regulations (1997),
- The Invasive Alien Species (Enforcement and Permitting) Order 2019,
- Town and Country Planning Act (1990),
- Wild Mammals Protection Act (1996),
- Wildlife and Countryside Act (1981) (as amended).

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

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

Table 2.1 – Relevant legislation

Species Group/Species	Relevant Legislature	Level of Protection
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.

Species Group/Species	Relevant Legislature	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 (*Reynoutria japonica*) and Himalayan Balsam (*Impatiens glandulifera*), 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.
Otter	CRoW Act (2000) Conservation of Habitats & Species Regulations (2019) EU Exit) Wildlife and Countryside Act (1981) (as amended)	Otter and their resting areas are afforded full protection from damage/ destruction and otters may not be injured/ killed/ taken at any age. Once identified, holts are protected whether the animal is occupation or not.
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).
Water Vole	CRoW Act (2000) Wildlife and Countryside Act (1981) (as amended)	Water voles are fully protected against intentional killing, capture or injury and intentional or reckless disturbance, obstruction, damage or destruction of their burrows.

2.4 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.

2.5 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."

2.6 Section 7 of the Act 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 NERC Act.

2.7 Planning Policy Wales (PPW) 12th Edition (2024) 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.

2.8 PPW 12th Edition (2024) 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."

2.9 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).

2.10 PPW also 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 (not including non native invasive species), locally or nationally and must work alongside nature and it must provide a net benefit for biodiversity and improve, or enable the improvement, of the resilience of ecosystems. A net benefit for biodiversity is the concept that development should leave biodiversity and the resilience of ecosystems in a significantly better state than before, through securing immediate and long-term, measurable and demonstrable benefit, primarily on or immediately adjacent to the site. The step-wise approach outlined below is the means of demonstrating the steps which have been taken towards securing a net benefit for biodiversity. In doing so, planning authorities must also take account of and promote the resilience of ecosystems, in particular the following attributes, known as the DECCA Framework:

- *diversity between and within ecosystems;*

- *the extent or scale of ecosystems;*
- *the condition of ecosystems including their structure and functioning;*
- *the connections between and within ecosystems; and*
- *adaptability of ecosystems including their ability to adapt to, resist and recover from a range of pressures likely to be placed on them through climate change for example.*

2.11 As well as consider Green Infrastructure (GI), at both a local and landscape scale:

"The Environment (Wales) Act 2016, provides a context for the delivery of multi-functional green infrastructure. Its protection and provision can make a significant contribution to the sustainable management of natural resources, and in particular to protecting, maintaining and enhancing biodiversity and the resilience of ecosystems in terms of the diversity within and connections between ecosystems and the extent and condition of these ecosystems, so that they are better able to resist, recover from and adapt to pressures. This means that the development of green infrastructure is an important way for local authorities to deliver their Section 6 duty."

2.12 Planning authorities must therefore follow a stepwise approach (see **Figure 2.1** below) 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.

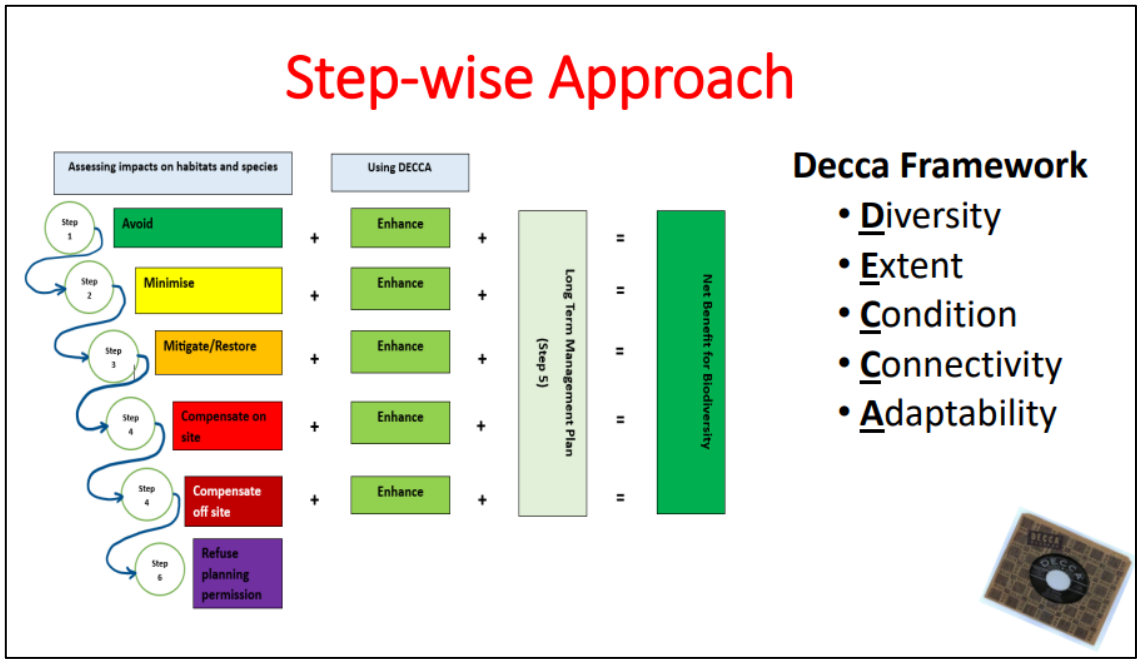


Figure 2.1 – *The step-wise approach / DECCA framework to be adopted by authorities in Wales*

2.13 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.

2.14 Policy SP14 Natural Environment of the Wrexham County Borough Local Development Plan 2013-2028 (Adopted December 2023) mirrors these statements within PPW 2024 and goes on to state the following:

"Development will only be permitted where it seeks to protect, conserve and enhance the natural environment including:

- *Special Areas of Conservation, Special Protection Areas, and Ramsar Sites;*
- *Sites of Special Scientific Interest and National Nature Reserves;*
- *Protected Species and their habitat;*
- *The Clwydian Range and Dee Valley Area of Outstanding Natural Beauty*
- *Local Wildlife Sites;*
- *Local Nature Reserves;*
- *Special Landscape Areas;*
- *Natural landscape features and Green Infrastructure such as trees, hedges and woodland which contribute to the quality and diversity of the natural environment and play an important role in mitigating the impact of climate change;*
- *The quality of natural services including water, soundscape, air and soils; and*
- *Habitats and species of principal importance to Wales"*

Priority Habitats & Species

2.15 In the United Kingdom, legal protection and otherwise legislative recognition is afforded to particular habitats and species based on a variety of ecological factors. These are typically referred to as priority habitats and species and can be identified under a variety of legislation and local policy, notably the UK Biodiversity Action Plan (UKBAP), Section 7 (s.7) of the NERC Act as well as under Local Biodiversity Action Plans (LBAPS).

3.0 Methodology

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

Desktop Study

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

3.3 Additionally, the Natural Resources Wales (NRW) and Joint Nature Conservation Committee (JNCC) websites were accessed to provide citation details for statutory designated sites as well as habitat information in proximity to the site.

3.4 Historic satellite imagery was reviewed using sources such as Google Earth (© 2024/25) to help establish past use of the land and determine the nature of adjoining and extending habitats; such information aids in the understanding of how the site might interact with its surroundings ecologically and its value in that context, and how the development may impact at a wider scale.

3.5 In addition, the Wrexham County Borough Council 'View planning applications' online function was utilised to help inform the desktop study by analysis of existing publicly accessible ecological survey results that have been carried out locally within the previous five years.

3.6 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 EPSML data, extensive company records and the daytime survey data available to the ecologist considered to contain enough information in relation to the protected species likely to be present on site. **If, however, a data search is considered to be necessary by the Local Authority or advisory body to better inform the appraisal, a proportionate data search should be commissioned with results interpreted into the conclusions and recommendations of a re-issued / updated report.**

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

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

Field survey

3.7 A daytime preliminary ecological appraisal (PEA) was conducted on the 9th of April 2025 in bright and clear conditions (14ºC), average wind 0/12 (Beaufort scale), average 0% cloud cover, by the following surveyor (see **Table 3.1** overleaf).

Table 3.1 – Site surveyor credentials

Name	Description of most relevant credentials
Mr J. Hark *Qualifying CIEEM*	• Consultant Ecologist with a range of training and experiences, including within habitat management and invasive species control. • BSc (Hons) Wildlife Conservation & Ecology, MSc Wildlife Conservation. • Accredited agent on the Natural Resources Wales Bat Licence of Mrs. K. Wilding (S093795-1). • Accredited agent on the Natural England Great Crested Newt: CL08 Class 1 licence (2022-106040-CL08-GCN) of Mr. D. Burrows. • Meets the requirements of CIEEM's Competency Framework Section S (surveying) to Capable level.

Floristic assessment

Habitats

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

Vegetation

3.9 During the survey walkover, botanical assemblages were assessed, and the land was inspected for the presence of red-listed (Stroh et al., 2014; Hodgetts, 2011), s.41 and LBAP species alongside specially protected species as listed under Schedule 8 of the Wildlife and Countryside Act (WCA) (1981) (as amended) and / or Schedule 5 The Conservation of Habitats and Species Regulations (2017) (as amended). Species nomenclature follows Stace, C. (2019) – definitive English names.

3.10 In addition to attributing ecological value to red-listed / BAP species, in accordance with existing CIEEM guidance, a geographic frame of reference is also adopted. Plant species and habitats may be recognised for their ecological value on a geographical scale which is adopted on a site-to-site basis (*International – National – Regional – County/Vice-County – Local*). For botanical species list compiled in full, see **Appendix II**.

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

Faunal assessment

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

Bats

3.13 Criteria for preliminary bat roost assessment are based upon the determinants given in the Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023) (see **Figures 3.1 – 3.3**).

3.14 The site was assessed for bats; a daytime bat walkover (DBW) was undertaken to observe, assess and record any habitats or features suitable for usage by bats, either as commuting, foraging or roosting provision. Wider connectivity to other habitats was also considered during the DBW.

3.15 Buildings and other permanent / semi-permanent structures (where present) would be subject to a preliminary roost assessment (PRA), to identify potential areas which may be of value to bats and to determine evidence of use. This typically involves a systematic search of the external aspects of any structure(s), comprising an investigation of features known to be used by bats (for example roofing material, soffits, fascia, lead flashing hanging tiles) using a high-powered torch and close-focus binoculars, where necessary. Where possible, an internal assessment of the structure was also carried out, with the aid of a high-powered torch and endoscope, where necessary, to identify any evidence of bat use of a structure. Field signs of bats typically comprise bat droppings, urine splashing, fur-oil staining, incidental animal presence, dead specimens and / or the presence of prey items, such as moth wings.

3.16 Trees (where present) would be subject to a ground level tree assessment (GLTA) using equipment such as close-focus binoculars and a high powered-torch. Potential roost features (PRFs) can include woodpecker holes, rot holes, hazard beams, other vertical or horizontal cracks or splits in stems and branches, partially decayed lifted bark, knot holes, man-made holes, tear-outs, cankers in which cavities have developed, other hollows or cavities, including butt-rots, double-leaders forming compression forks with included bark, gaps between overlapping stems or branches, partially detached climbing species with stem diameters in excess of 50mm or pre-existing bat / bird boxes. These PRFs can then be determined as PRF-I or PRF-M, dependent on their suitability for individual / low numbers of bats or their capability to host multiple bats.

3.17 Factors considered during the preliminary roost assessment include:

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

Table 4.1. Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.

Potential suitability	Description	
	Roosting habitats in structures	**Potential flight-paths and foraging habitats**
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible[a]	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions[b] and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats[c]).	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions[b] and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions[b] and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

a Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant'. This category may be used where there are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute).

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

c Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten *et al.*, 2016 and Jansen *et al.*, 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson, 2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.

Figure 3.1 – *BCT guidelines extract*

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

Figure 3.2 – *BCT extract on tree roost suitability criteria*

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

Figure 3.3 – *BCT extract on tree roost categorisation criteria*

Birds

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

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

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

Other terrestrial mammals

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

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

Otter

3.22 Survey methodology detailed within published criteria (CIEEM, 2017) and best practice guidelines; '*Monitoring the Otter*' (Chanin, 2003) was followed during the preliminary ecological appraisal. The preliminary check involved walking accessible areas of the Bradshaw Brook, checking for signs of otter including spraints, slides, runs, footprints, feeding remains, anal jelly, couches/ resting places and holts.

Water Vole

3.23 Any ditches and / or watercourses were assessed relative to their potential to offer suitable habitat for water vole, which includes a preliminary search for:

- Sightings – confirmed sighting of a water vole during the survey,
- Latrines – collections of droppings,
- Burrows – holes along the water's edge and in the bank above,
- Footprints – forefoot and hind foot,
- Pathways in vegetation – low runs or tunnels pushed through vegetation,
- Feeding remains – piles of chewed lengths of vegetation with 45-degree cuts to the ends,
- Cropped grass around tunnel entrances – grazed vegetation to form a 'lawn' around burrow.

3.24 The methodology and impact assessment for water voles followed guidance within the Water Vole Conservation Handbook, 3rd Edition (Strachan & Moorhouse, 2011) and the Water Vole Mitigation Handbook – The Mammal Society Mitigation Guidance Series (2016).

3.25 The water vole habitat suitability assessment has been designed by Harris et al. (2009). The method grades sites by a simple scoring index with each character scoring 1 if present and 0 if absent. These scores are then applied to habitat categories of: <3: Unsuitable, 3-5: Sub-optimal, >5 Optimal. The criteria are as follows:

- Well-developed (>60%) bank-side and emergent vegetation to provide cover;
- Year-round availability of food sources;
- Suitable refuge areas above extremes in water levels;
- Steep banks suitable for burrowing;
- Permanent open water;
- Presence of berm (ledge at water level);
- Lack of disturbance through poaching, grazing and/or recent management; and
- Nest building opportunities in vegetation above water level.

Herpetofauna

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

NB: *Ponds within 500m of a proposed development site should be considered for their potential to support GCN, however, in some instances this distance may be reduced to 250m due to the presence of physical barriers and obstructions or based on the likely magnitude of impacts arising from the proposed development.*

3.27 Where access was granted, ponds within 250m of the development site were subject to a Habitat Suitability Index (HSI) assessment for GCN.

Applying the GCN HSI

The GCN Habitat Suitability Index (HSI) is a quantitative measure of habitat quality evaluating the suitability of habitat for the GCN. 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.

3.28 In order to quantify risks to GCN in a PEA, a range of factors need to be considered (see below and **Table 3.2**):

- 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, to be affected by works,
- Presence of significant barriers between ponds and site,

- Area of site habitat loss and permanence of that loss.

Table 3.2 – Factors that can increase/decrease risk of committing an offence

Increases risk to GCN	Decreases risk to GCN
Large population size	Small population size
High local pond density	Low local pond density
Good terrestrial habitat	Poor terrestrial habitat
Low pre-existing habitat fragmentation	Substantial pre-existing dispersal barriers
Large development footprint	Small development footprint
Long construction period	Short construction period

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

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

- Common lizard (*Zootoca vivipara*) use a variety of habitats from woodland glades to heaths, walls and pastures, as well as brownfield sites,
- Slow worm (*Anguis fragilis*) use a variety of habitats, similar to the common lizard, however are more associated with gardens and brownfield sites.

3.31 In assessment of a site for reptiles several important habitat characteristics are considered, outlined in **Table 3.3** below, as derived from the Reptile Habitat Management Handbook (Edgar, 2010).

Table 3.3 – Important habitat characteristics for reptiles

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

Invertebrates

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

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

Quality Assurance (QA)

3.33 The results, conclusions and recommendations of this report are based on a number of factors i.e.

- Skills and experience of the surveyor,
- Knowledge of flora and fauna relevant to the site location and geographical range,
- Nature of the immediate and surrounding habitat in relation to shelter, foraging and commuting opportunities.

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

4.0 Limitations

4.1 This report does not contain a comprehensive list entailing the totality of botanical taxa on site. Species listed within **Appendix III** are recorded from a combination of the seasonal timing that the survey took place and botanical identification skills of the surveyors. Many plant species are only evident at certain times of the year; consequently, it is possible that some plant species may have gone undetected.

4.2 The optimal time of the year to carry out a preliminary ecological appraisal / UK Habitats survey is April to October; the survey was therefore carried out within the optimal period.

4.3 The survey took place outside of the bat active season (broadly acknowledged to be May – September), therefore, there was a lower probability of encountering direct evidence of bats, such as through droppings. However, potential roost features and suitability of potential roost features can still be judged as effectively and conclusively as within the active season of bats. Therefore, whilst suboptimal, survey timing is not considered a limitation in this instance.

4.4 The survey was conducted early within the breeding bird season, typically considered to be March – August, at a time when only some species have begun to construct nests. Nonetheless, suitability for breeding birds is readily identifiable all year round and nesting material from the recent summer can often attest to the presence of breeding birds; as such, timing is not considered a constraint.

4.5 It was identified that B1 contains a small loft cavity/roof space (being part-vaulted from the interior), although no access was achieved as no access hatch was identified. However, a further dusk survey has been recommended for the building, which will mitigate this constraint on the daytime survey.

4.6 At the time of the survey, the grass lawn of the property had been recently mown, hampering identification of the species present, although it is considered that identification of the species present in the un-mown margins provides a reasonable assessment of the grassland.

4.7 In considering all potential survey constraints, no significant limitations were experienced that might adversely influence the results, conclusions, and recommendations of this report.

5.0 Desk Study Results

5.1 The application site is located to the west of Rhyn lane, approximately 2.0km east of Chirk town centre. The site is comprised of a single-storey former chapel, along with a timber shed and amenity garden space, including a single pond., with a total area of 0.05ha (see **Figure 5.1** below for location of the site within the surrounding landscape).



Figure 5.1 – *Location of red line boundary within surrounding landscape © Google Earth Pro 2025*

5.2 The site is located within the rural outskirts of Chirk, with the surrounding landscape comprising predominantly arable farmland, but also hosting large, interconnected parcels of deciduous woodland. The land directly bordering the site is a grazed grassland, with individual mature trees and rough margins to the north, east and west, whilst the land to the south is bordered by Rhyn Lane which then gives way to the riparian margins of the River Ceiriog.

Relevant Planning History

5.3 A search of the Gwynedd Council planning portal found no planning applications which pertain to the Former Methodist Chapel at LL14 5BH within the last 10 years, however, multiple applications were returned from within the postcode, none of which contained any accessible ecological documentation.

Designated Sites

5.4 Four statutory designated sites for nature conservation are present within a 2.0km search radius of the site (see **Table 5.1** overleaf for information and **Figure 5.2** overleaf for a visual aid).

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

Site name	Designation type	Interest features
River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (England and Wales) *0.02km south-east*	Special Area of Conservation (SAC) Site of Special Scientific Interest (SSSI)	The River Dee SSSI & SAC extends from the outflow of Llyn Tegid SSSI downstream to where it flows into the Dee Estuary SSSI. In its slower, more mature reaches the river is characteristic of a floodplain river with meanders, oxbows and other river-formed landscape features. The River Dee is heavily regulated, with its flow controlled by the reservoirs of Tegid, Celyn and Brenig. The site includes the Ceiriog, Meloch, Tryweryn, and Mynach tributaries. The River is of special important for migratory fish, including Atlantic salmon (*Salmo salar*), for populations of club-tailed dragonfly (*Gomphus vulgatissimus*) and European otter (*Lutra lutra*) and for its fluvial geomorphology.
Nant-y-Belan and Prynela Woods *1.8km north*	SSSI	A site of interest for its botanical assemblage, being the largest and one of the best examples of a woodland type largely restricted to Wales and south-west England but also found in the Midlands and north-east England.
Ifton Meadows *0.5km south-east*	Local Nature Reserve (LNR)	A 20.00ha site upon historic colliery spoil which now features steams, ponds and rough grassland.

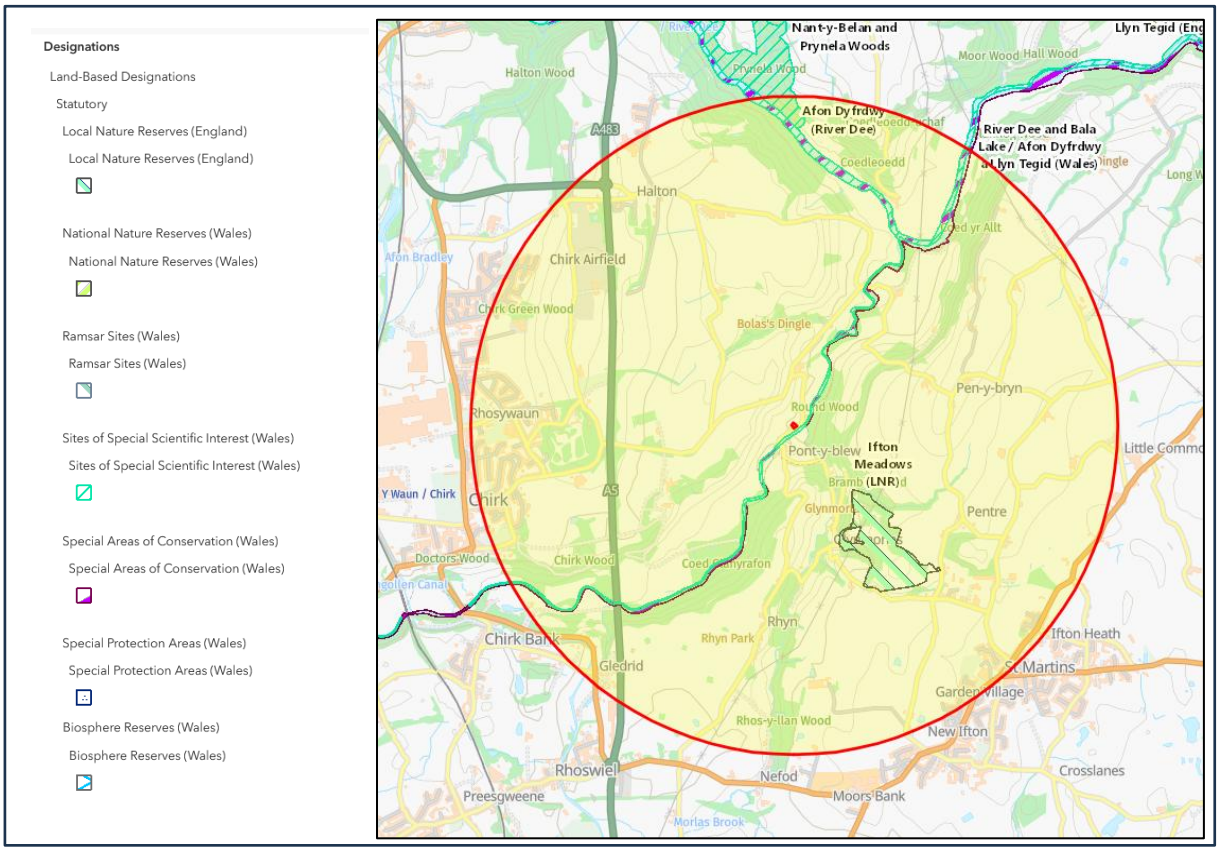


Figure 5.2 – *Designated site data for the area within 2.0km of application site © MAGiC Maps 2025*

Habitats

5.5 An online search of DataMapWales identified the following priority habitats within the 2.0km search radius, though none are present within the site boundary (see **Table 5.2**).

Table 5.2 – Priority habitats located within 2.0km buffer

Habitat Type	Designation
Wood Pasture and Parkland	NRW Priority Habitat
Purple moor grass and rush pastures	NRW Priority Habitat
Lowland dry acid grassland	NRW Priority Habitat

Bats

5.6 The application site is located directly adjacent to the riparian corridor of the River Ceiriog, which provides high quality foraging and commuting conditions, especially for Daubenton's bat, which specialises in foraging over water. Further suitable foraging habitat, with potential to support a range of bat species, is present within the woodland networks, individual trees and, to a lesser extent within the agricultural grasslands. The rural location of the site implies a low level of light pollution, and the likelihood that unlit roads and track within minimal traffic are also present, which would provide high quality commuting links throughout the landscape, alongside hedgerows and individual trees. It is considered that a range of bat species could be supported by these habitats, but that the species most likely to exist within proximity to the site is the common pipistrelle (*Pipistrellus pipistrellus*), which is more typically associated with roosting within dwellings and utilise a wide range of habitats.

Birds

5.7 The location of the site, within expansive open, agricultural land and within close proximity to the River Ceiriog indicates a range of habitats which could support birds associated with watercourses, such as grey wagtail (*Motacilla cinerea*) and dipper (*Cinclus cinclus*) and with agricultural land, including raptors such as barn owl (*Tyto alba*) and ground nesting species such as curlew (*Numenius arquata*) and lapwing (*Vanellus vanellus*). The combination of riverine and agricultural landscapes surrounding the site likely support a high diversity of bird species.

5.8 The aforementioned linear and area features suitable for bats would also afford connective habitat for bird species in the wider landscape.

Otter and Water Vole

5.9 Given the proximity of the site to the River Cieriog, and the presence of riparian woodlands and agricultural grasslands within the area, it is considered possible that Eurasian otter (*Lutra lutra*) and water vole (*Arvicola amphibius*) are occasionally present within the locality and given the presence of an identified waterbody within the site, it is further considered possible that otter could occasionally access the site itself to forage.

Other Terrestrial Mammals

5.10 Given the rural location and prevalence of agricultural land within the immediate landscape, it is considered likely that badger and hedgehog are supported within the immediate landscape and may occasionally utilise the site.

Herpetofauna

5.11 Based on the desktop assessment, a single standing waterbody was identified within the site itself, and a single additional waterbody was identified from within 250m of the application site, specifically from approximately 25m west of the site boundary (See **Figure 5.3**, below). There is no identified 'Potential Habitat for Great Crested Newts' within 250m based on the 'Potential Habitat for Great Crested Newts' DataMapWales layer, with the closest identified areas located approximately 500m north. Additionally, it was identified that the site is located within proximity to the River Ceiriog, which runs approximately south-west to north-east, 75m south-east of the site at the closest point and likely forms a barrier to dispersal.

5.12 Based on the presence of an identified waterbody within the application site, and the potential for further unidentified water bodies to be present within the immediate vicinity, coupled with the presence of suitable terrestrial habitat identified during the desktop study, but considering the potential dispersal barrier presented by the River Ceiriog, it is considered possible that great crested newt would be present in proximity to the site. Further, opportunities for generalist amphibians are likely to exist within these same waterbodies, woodlands and grasslands and are considered likely to be present.

5.13 The mosaic of agricultural grazing grassland, small woodland blocks, riparian woodlands and small domestic dwellings provides a limited level of suitable habitat for reptiles, however, generalist reptiles such as grass snake (*Natrix helvetica*), which are adaptable to a range of habitats and conditions could viably be present within the landscape and within the site itself, especially given the aforementioned waterbodies.

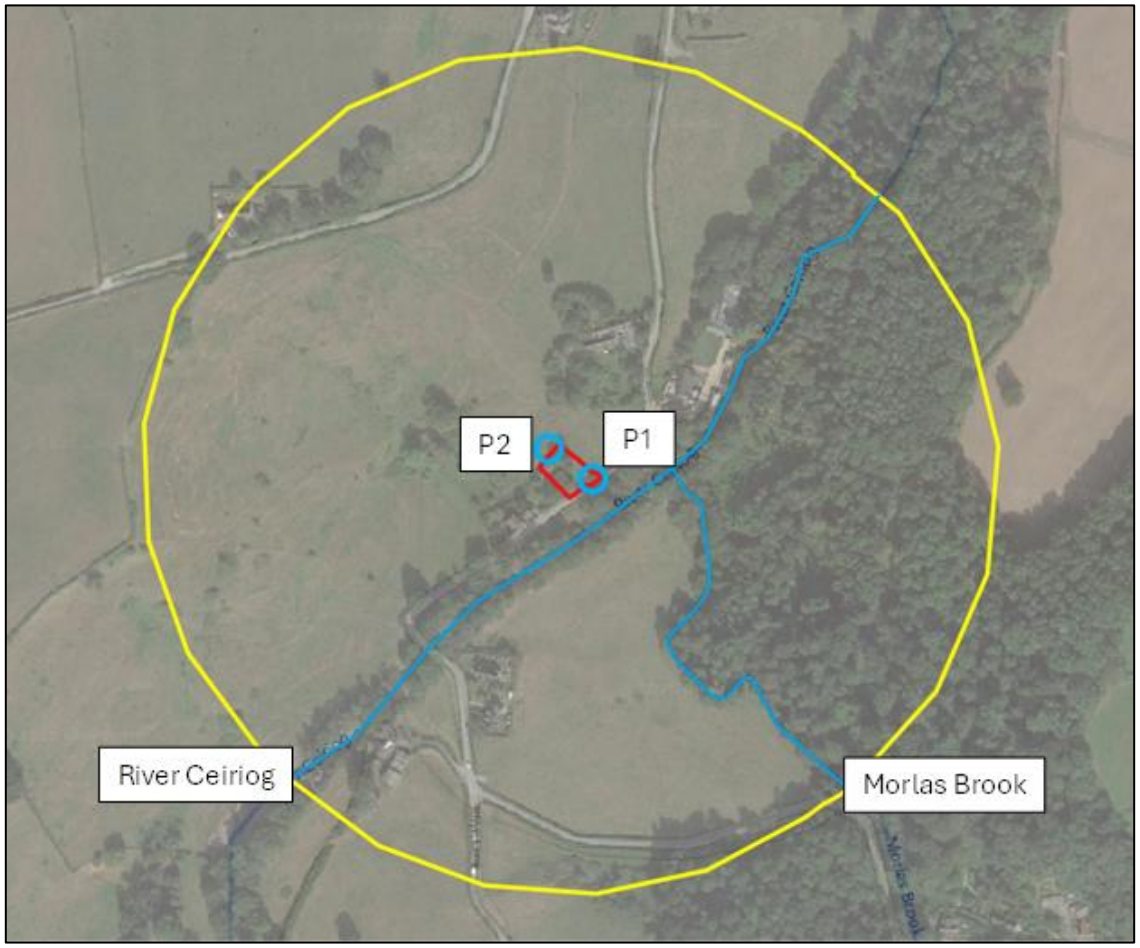


Figure 5.3 – *Location of ponds and watercourses within 250m of the site boundary.*

Invertebrates

5.14 Whilst the habitats notified within the designated sites in the surrounding area, including within the River Ceiriog which forms part of the River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (England and Wales) SAC and SSSI and is designated in part for populations of club-tailed dragonfly, have the potential to support nationally significant populations of rare or protected invertebrates, it is unlikely that the site has comparable value for these species, being formed predominantly of less-suitable, semi-natural habitat and not forming a continuity link. The open farmland which dominates the surrounding terrestrial area is also unlikely to host nationally significant populations of invertebrates.

6.0 Field Survey Results

6.1 Habitat Survey & Green Infrastructure

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

Table 6.1.1 – UK Habitat types within the survey area

Area habitat	Sec. Codes	Description
g4 Modified grassland	**16** Tall forbs **107** Mown and collected **510** Bare ground **828** Vegetated garden	The majority of the site is dominated by a modified grassland lawn, which surrounds the chapel building. The lawn appeared to have been recently cut and collected at the time of the survey (which may have impacted the number of species recorded), with some longer vegetation present in the margins. Species present include graminoids such as perennial rye-grass (*Lolium perenne*) but likely includes further unidentified grass species. Forb species present include common nettle (*Urtica dioica*), dandelion (*Taraxacum* agg.), common ivy (*Hedera helix*), common ragwort (*Jacobaea vulgaris*), creeping cinquefoil (*Potentilla reptans*), herb-Robert (*Geranium robertianum*), ground-ivy (*Glechoma hederacea*), daisy (*Bellis perennis*), common dog violet (*Viola riviniana*), clover (*Trifolium* spp.), curled-dock (*Rumex* crispus), hogweed (*Heracleum sphondylium*), common columbine (*Aquilegia vulgaris*), male fern (*Dryopteris filix-mas*), ribwort-plantain (*Plantago lanceolata*), cow parsley (*Anthriscus* sylvestris), common butterbur (*Petasites hybridus*), cuckoo-flower (*Cardamine pratensis*), green alkanet (*Pentaglottis sempervirens*), wavy bittercress (*Cardamine flexuosa*) and ivy-leaved speedwell (*Veronica hederifolia*).
r1g 42 Other standing water	**42** Pond	A small garden pond present in the easternmost extent of the site. The pond is small and features a heavily vegetated area (forming a floating matt) and an area of open water and is situated adjacent to a hedgerow (H1) and the aforementioned modified grassland. Vegetated species within the pond include yellow iris (*Iris pseudacorus*), marsh marigold (*Caltha palustris*), hornwort (*Ceratophyllum sp.*) and duckweed (*Lemna sp.*).
u1 847 Introduced shrub	**524** Invasive non-native species	An area of tall growth against the southern aspect of the chapel building, formed predominantly of the non-native species rhododendron (*Rhododendron ponticum*) and of common ivy (*Hedera helix*) but also including hazel (*Corylus avellana*), dog's mercury (*Mercurialis perennis*), lords-and-ladies (*Arum maculatum*) and hybrid bluebell (*Hyacinthoides x massartiana*).
u1b Developed land; sealed surface	**-**	A small area of the lane to the south-east which is included within the redline boundary. This area if formed of sealed tarmac.

Area habitat	Sec. Codes	Description
u1b5 Buildings	-	Three buildings located within the site boundary, comprising an ex-methodist chapel, a small stables/shed and a small brick coop. Further building descriptions are presented in **Section 6.3.**
Individual trees	**Sec. Codes**	**Description**
Individual trees	**203** Mature tree	Six individual trees were recorded across the site. These trees were a mix of walnut (*Juglans regia*) and spruce (*Picea spp.*). Further information on individual trees is presented in **Section 6.3.25**.
Linear habitat	**Sec. Codes**	**Description**
h2a6 (H1) Other native hedgerow	-	A hedgerow bounding the north-eastern site boundary. Woody species consist solely of hawthorn (*Crataegus monogyna*) whilst the ground flora includes bramble (*Rubus fruticosus* agg.), common ivy (*Hedera helix*), dog's mercury, lords-and-ladies, ramsons (*Allium ursinum*), cleavers (*Galium aparine*), common nettle (*Urtica dioica*), colt's foot (*Tussilago farfara*) and bluebell.
h2b (H2) Non-native and ornamental hedgerow	-	A hedgerow bounding the south-western site boundary. Woody species consist solely of cypress (*Cupressus spp.*) whilst the ground flora included dog's mercury, lords-and-ladies, clover, cleavers, broad-leaved dock, common nettle and common vetch.

6.1.2 The 'Other native hedgerow' habitat present along the north-eastern site boundary of the site fits the description of the UKBAP/section 7 priority habitat (Hedgerow) which states:

"A hedgerow is defined as any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps between the trees or shrub species are less that 20m wide (Bickmore, 2002). Any bank, wall, ditch or tree within 2m of the centre of the hedgerow is considered to be part of the hedgerow habitat, as is the herbaceous vegetation within 2m of the centre of the hedgerow. All hedgerows consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species are covered by this priority habitat, where each UK country can define the list of woody species native to their respective country. Climbers such as honeysuckle and bramble are recognised as integral to many hedgerows, however they require other woody plants to be present to form a distinct woody boundary feature, as such they are not included in the definition of woody species. The definition is limited to boundary lines of trees or shrubs, and excludes banks or walls without woody shrubs on top of them."

6.1.3 Based upon the above, the site is not considered locally notable for its green infrastructure, being comprised of the buildings, and associated gardens, grass lawns, pond and scattered mature trees and hedgerows. Key green infrastructure present on site is therefore considered to be the scattered trees, pond and the native hedgerow priority habitat.

6.1.4 It is understood that the proposals entail the conversion of the chapel into a residential dwelling and the formation of two parking spaces in the location of the pond. It is also understood that whilst an area of the modified grassland, and the pond will be lost to the development, most of the site is to remain as the same broad habitat but will likely be subject to a more intense management regime for amenity use.

6.2 Vegetation

Notable species

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

Invasive non-native species (INNS)

6.2.2 A single INNS, listed under Schedule 9 (Part II) of the Wildlife and Countryside Act (1981) was observed within the red line boundary, namely rhododendron, which was located adjacent to the southern aspect of the chapel (see **Appendix IV** 'u1 847').

6.3 Bats

6.3.1 Three structures are present within the site boundary. See **Appendix IV** for the locations of these buildings in relation to the site boundary, see **Table 6.3.1** below for building descriptions in relation to their potential to host roosting bats.

Table 6.3.1 – Building descriptions in relation to bat roosting potential

Building 1 (B1)
B1 is a single-storey former methodist chapel which currently functions are storage for the client. The building is constructed of a timber frame with a corrugated steel external cladding and timber boarded internal cladding and includes a pitched corrugated steel roof. The building is of approximate maximum dimensions of 10m x 6.5m x 4m (length x width x height) and features components such as a brick pillar on the south-western orientation, timber-framed single-glazed windows, uPVC gutters and downspouts, timber double-doors on the south-eastern and north-western orientations. In respect of its condition, the surveyor is not qualified to assess structural state, however the building was considered to be in a relatively good condition with only minor areas of superficial age-related decline observed.  The internal space is part-vaulted, indicating that a small loft-cavity is likely present, and presents dimensions of approximately 1m width and 0.5m high. No loft hatch was identified within the internal timber cladding, and the loft was therefore not accessed for a full assessment. It was not possible to ascertain whether a roof membrane was present, although the character of the building would suggest that it is unlikely. The ground-floor internal space was open and bright owing to many windows, poorly insulated but well-sealed, with no obvious potential ingress opportunities. The building is therefore considered broadly unsuitable for the breeding requirements of loft-dwelling species such as brown long-eared bats (*Plecotus auritus*), which is a species that prefers spacious, dark voids with consistent thermal qualities, although this does not rule-out the potential presence of day roosts of this species within the building. No direct evidence of the presence of roosting bats (droppings, feeding remains, urine staining etc.) was observed within this space, although this does not rule out the potential presence of roosting bats within inaccessible areas. It was not possible to ascertain whether a roof liner is present. Where present, Bitumen 1F felt or other traditional roof linings can significantly increase the value of a building for crevice dwelling bats such as those of the *Pipistrellus* genus, whereby they roost between the lining and roofing materials. **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 maternity colony.

Externally, B1 was host to timber barge boards which sit against the corrugated steel cladding and form regular crevice opportunities to all aspects, in addition to a stone pillar abutting the south-western aspect which forms crevice opportunities where it sits against the cladding, leaving a small gap, and at a crack within the masonry close to the top of the pillar.

Taking into consideration the low number of low quality identified PRFs, alongside suitable foraging and commuting habitat within the immediate vicinity**,** B1 at Former Methodist Chapel, Pont-y-Blew is duly categorised as offering '**Low**' bat roost suitability in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2024) (BCT Guidelines).

Building 2 (B2)



B2 is a single storey garden shed of timber construction and featuring a corrugated tin roof to the approximate maximum dimensions of 4m x 2m x 2.5m. No guttering, barge boards, soffits or windows were present, although two sets of half-height doors are present on the western orientation.

Internally, the space is used for storage and open to the ridge. Climatic conditions were adjudged to be draughty and uninsulated, subject to frequent disturbance and with high light ingress openings above half-height doors.

Externally, although the building is host to minor PRFs, such as gaps between roof timbers and the corrugated steel roof and superficial timber crevices, these generally offer unfavourable conditions due to the open fronted nature of the building, which makes the space bright and draughty, and the corrugated steel roof, which provides poor thermal stability, and during certain weather conditions, a potentially hostile environment. As such, it is considered that these PRF's are highly unlikely to be utilised by bats.

Given the lack of suitable PRFs identified, but presence of low-suitability features, favourable habitat in proximity, B2 at Former Methodist Chapel, Pont-y-Blew is duly categorised as offering '**Negligible**' bat roost suitability in accordance with BCT Guidelines.

The submitted plans indicate the retention of B2.

Building 3 (B3)



B3 is a brick 'coop' style structure located adjacent to B2 and presents a structure of approximate maximum dimensions of 0.5m x 0.5m x 1.5m.

No crevice roosting opportunities exist because of its simple construction and the interior presents a small space which is draughty and bright. The building is considered entirely unsuitable for either crevice- or loft-dwelling bats.

Considering the above, B3 at Former Methodist Chapel, Pont-y-Blew is duly categorised as pertaining to a bat roost suitability of '**None**' in accordance with BCT Guidance.

Trees

6.3.2 During the GLTA of the various individual trees within the boundary tree line, numerous trees were identified and assessed. None of these trees were found to contain features which could be used roosting bats; as such, all trees are collectively categorised as pertaining to a roost potential of '**None**'.

6.3.3 From a habitat suitability assessment in relation to bat activity, the habitats onsite are likely of moderate value for bats, individual trees, scrub, hedges and shrubby gardens providing ample foraging and commuting habitat which connects well with the habitats within the nearby waterways and agricultural landscape. The presence of bats within the site boundary on a foraging and commuting basis is considered possible.

6.4 Birds

6.4.1 In relation to WCA Schedule 1 specially protected bird species such as barn owl (*Tyto alba*) the site provides no suitable nesting platforms, direct evidence, or evidence of historic nesting. It is considered unlikely that the site would be utilised by any specially protected bird species.

6.4.2 In relation to more common bird species, the shrub vegetation, individual trees and buildings onsite offer an abundance of suitable nesting platforms, which could support a variety of breeding passerine birds during the nesting bird season of March – August inclusive. This could include urbanised species such as swallow or house martin, or common garden bird species such as robin (*Erithacus rubecula*), wren (*Troglodytes troglodytes*) and blackbird (*Turdus merula*).

6.5 Other Terrestrial Mammals

Badger & hedgehog

6.5.1 No field signs of badger, such as latrines, pathways, hairs, footprints, or feeding signs, for example snuffle holes and scratched trees / logs, were located within the application site boundary. While habitats with potential suitability for this species are present within the extending environment, they are largely distant from the site and the habitats onsite are largely considered generally unsuitable for this species; given the site's location and character, impacts to this species can likely be conclusively ruled out.

6.5.2 Whilst no direct evidence of hedgehog was identified, the site habitats provide potentially suitable refuge with the hedgerows, providing suitably protected areas for rest, whilst the grassland provides a suitable foraging habitat. Their occasional presence within the site is therefore considered possible.

Otter and water vole

6.5.3 The River Ceiriog, located approximately 20m south of the site boundary at its closest point was assessed for evidence of and suitability for both water vole and otter from the northern bank, though limited access was available as this lies outside of the ownership of the client. No suitable habitat for otter and/or water vole was identified within the site boundary.

6.5.4 Inspection revealed that the nature of the river in this area is a shallow, fast flowing watercourse with a stoney base and where boulders regularly break the surface, causing eddies and areas of varying flow. The banks on either side have an initially very steep profile (circa 90°) before becoming almost completely flat, where lines of riparian trees are sited. Banksides appeared bare in minor areas, being predominantly covered with ivy and bramble along with exposed tree roots. Limited areas of exposed earth suitable for burrowing were observed, with dense vegetation being present more often. The northern bank gives way to a small grass verge leading to Rhyn Lane, which then border the application site, whilst the

southern border leads to an agricultural grassland. Disturbance in the area is likely to be limited, with a small number of dwellings close by and Rhyn Lane constituting a quiet, minor road. An assessment using the aforementioned habitat suitability assessment, designed by Harris et al. (2009), is provided below (see **Table 6.5.1**).

Table 6.5.1 – Habitat Suitability scoring for water vole

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

6.5.5 The conditions of the watercourse indicate that it is of sub-optimal suitability for water vole, being of a shallow nature and having a fast flow.

6.5.6 However, otter may occasionally utilise the watercourse for foraging or commuting, and are able to utilise a wider range of watercourse types. No holts, spraints, borrows, anal jelly, slides, lawns, droppings or other evidence of otter and/or water vole were identified.

6.5.7 Whilst no direct evidence of the presence of otter and/or water vole within the immediate vicinity of the survey area, the habitats present have suitable conditions to support otter on an occasional basis.

6.6 Herpetofauna

Great crested newt (GCN)

6.6.1 Important elements to consider when assessing likely impacts against GCN includes:

- The scale, nature and magnitude of proposals,
- Site proximity to a potential breeding pond and to any additional ponds,
- Habitat linkage / barriers between potential breeding ponds and the site,
- Nature and extent of available terrestrial habitat around the pond,
- Area of site habitat loss,
- Nature of habitat to be lost and potential value to GCN,
- Most up to date Government guidance considering EPS.

6.6.2 As derived from the desktop assessment, two standing waterbodies (P1 & P2) have been identified within 250m of the site boundary, one of which is located within the site itself (P1) and the second is located directly adjacent to the north-western site boundary (P2).

6.6.3 The GCN HSI was therefore applied for both waterbodies. See **Table 6.6.1** for waterbody description and **Tables 6.6.2 – 6.6.3** for detailed HSI results in line with current guidance. **Figure 6.6.1** showcases relative pond occupancy proportions.

Table 6.6.1 – Waterbody description within 250m radial buffer, with included HSI score

P1	
P1 has an estimated area of 50m^2, likely never dries, supports a moderate assemblage of invertebrates, is partially shaded 1m from shore, has no evidence of waterfowl and is unlikely to contain fish, and is surrounded by high quality terrestrial habitat with a moderate presence of macrophytes. Based on the above, the HSI value of the pond has been calculated as pertaining to **0.60 – Average**. See **Table 6.6.2** below for further information on the individual category scorings.	
P2	
P1 has an estimated area of 250m^2, likely occasionally dries, supports a moderate assemblage of invertebrates, is partially shaded 1m from shore, has no evidence of waterfowl and is unlikely to contain fish, and is surrounded by high quality terrestrial habitat with a high presence of macrophytes. Based on the above, the HSI value of the pond has been calculated as pertaining to **0.78 – Good**. See **Table 6.6.2** below for further information on the individual category scorings.	

Table 6.6.2 - HSI Quantitative Assessment of P1 & P2

HSI category	Pond 1	Summary of results	Pond 2	Summary of results
SI1 - Location	0.5	Area 'B'	0.5	Area 'B'
SI2 - Pond area	0.05	Below 50m^2	0.5	250m^2
SI3 - Pond drying	0.9	Unlikely to ever dry	1.0	Likely dries no more than two years in ten or only in drought
SI4 - Water quality	0.67	Moderate invertebrate diversity	0.67	Moderate invertebrate diversity
SI4 - Shade	1	Approximately 20% shaded	1	Approximately 60% shaded
SI6 - Fowl	1	No waterfowl observed, likely occasionally present (1)	1	No waterfowl observed, likely occasionally present (1)
SI7 - Fish	1	No evidence of fish, unlikely to be present	1	No evidence of fish, unlikely to be present
SI8 - Ponds	0.5	Two ponds within 1km	0.5	Two ponds within 1km
SI9 - Terrestrial habitat	1	High quality foraging habitat in the vicinity	1	High quality foraging habitat in the vicinity
SI10 - Macrophytes	0.8	Approximately 50% cover	1	Approximately 80% cover
HSI	**0.60**	**'Average' estimated 55% chance of use as a GCN breeding pond**	**0.78**	**'Good' estimated 79% chance of use as a GCN breeding pond**

Table 6.6.3 - 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

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

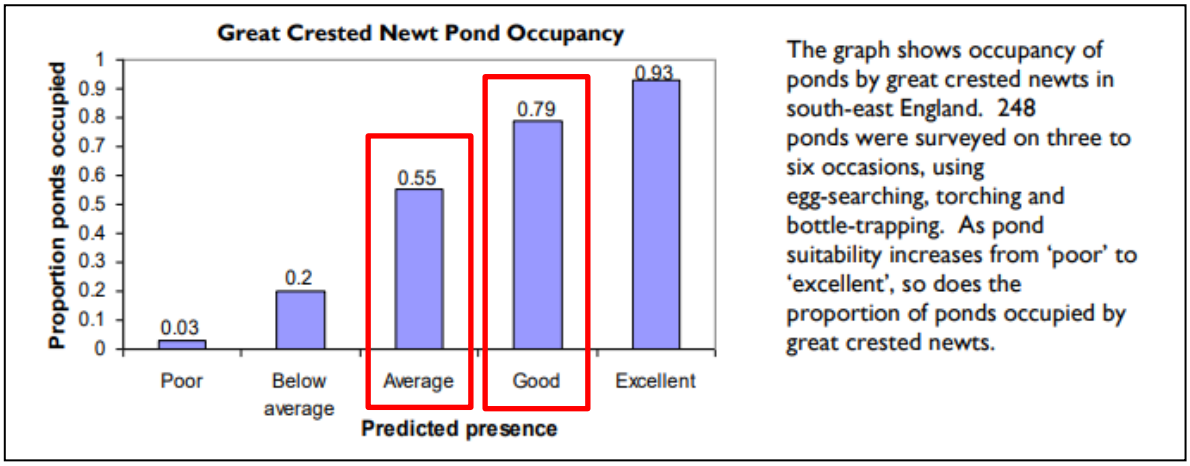


Figure 6.6.1 – *GCN pond occupancy © ARC UK*

6.6.4 The HSI result as above indicates that there is a moderate to high risk of GCN being present within the water bodies, however, this assessment does not take into account the terrestrial connectivity of habitats and what barriers to dispersal of newts may be present in the area. On balance, based in the HSI results and desktop study, it is considered possible that GCN may be present within the identified waterbodies.

6.6.5 In a terrestrial contextual assessment, the site provides some moderate value for GCN, with the dense introduced shrub, hedgerows and modified grassland margins, potentially offering suitable terrestrial foraging and commuting habitat and the building foundations and areas of stored garden materials providing potentially suitable hibernacula.

6.6.6 Connectivity within the local landscape is limited by various features which likely form significant barriers to the dispersal of GCN within the locality. Features such as the River Ceiriog (20m south-east), Morlas Brook (65m east), the River Dee (1.35km north) and the A5 corridor (1.1km west) likely form significant dispersal barriers from the wider landscape, but do not exclude the chance of a population being present within this area.

Other amphibians

6.6.7 Owing to the presence of two waterbodies close to or within the application site, and the identification of frog spawn within the on-site pond, along with the high-quality terrestrial habitat within the surrounding area and to a lesser degree, within the site, it is considered that common amphibians are confirmed to be supported locally and to be present within the site.

Reptiles

6.6.8 Similarly, the riparian marginal woodlands and grasslands along with local waterbodies and agricultural margins offer suitable habitat to support common reptiles, such as grass snake, and the presence of the waterbodies and frogspawn within, indicates that amphibian are be available for this species. It is considered that grass snake may occasionally be present within the site.

6.7 Invertebrates

6.7.1 Despite the presence of known populations of rare and important invertebrate species within 2.0km, within the River Dee SSSI/SAC, the site is considered to be of a character which does not support suitable habitat for these species. The site walkover did not identify any evidence of protected or important invertebrate species or habitats which could support them.

7.0 Conclusions & Recommendations

Designated sites

7.1 Although the site is located within very close proximity (0.02km) of the River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid SAC/SSSI, the proposals are of a minor nature, consisting of internal conversion of the chapel and formation of a small hardstanding parking area in the existing gardens. It is considered unlikely that the works will impact the designated sites.

Habitats

7.2 Native hedgerow, which is classified as a priority habitat under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, was identified within along the north-eastern site boundary.

7.3 Although the post-development plans indicate that the hedgerow will be retained through the development, the area will subsequently be located within a small private garden and may be lost going forwards to domestic garden practices.

7.4 It is therefore recommended that a habitat management and monitoring plan (HMMP) is commissioned to detail the ongoing management of the priority habitat.

7.5 Any landscaping should look to incorporate native species as discussed in **Appendix II**.

7.6 It is recommended that, where possible, mature trees present across the site are retained. Should this not be possible, it is recommended that the step-wise approach provided in **Figure 2.1** is followed; impacts upon these areas of higher quality habitat should be avoided, or minimized, or mitigated, and as a last resort compensated for; enhancement must be secured wherever possible.

Vegetation

7.7 No priority vegetative species were identified on the site by the surveyors during the diurnal appraisal to warrant any specific intervention measures.

7.8 A single INNS listed on either Schedule 9 of the WCA was recorded on site, namely rhododendron. Given the location within the dense garden shrubberies which cover the front door of the chapel, it is considered that construction works, inclusive of all vegetation clearance and demolition, could feasibly spread this species further.

7.9 Whilst it is not illegal to host any species designated as such within a site, it is an offence, under current legislature, to knowingly permit the spread of INNS beyond the confines of your site, either via allowing it to grow unchecked or through the irresponsible removal and dumping of waste / plant matter.

7.10 To prevent further spread of these species from within the site, it is recommended that all invasive species are eradicated from the site prior to development. A Method Statement should be collated by a suitably qualified ecologist or invasive species specialist outlining how these species will be removed pre-works, including details regarding site biosecurity protocols. This Method Statement should be enacted prior to commencement of the development and throughout the construction phase; as a part of the Method Statement the full extent of the INNS should be mapped through a dedicated Invasive Species check, undertaken by a suitably qualified ecologist, botanist or invasive species contractor, at an appropriate time of year.

Bats

7.11 Based upon the findings of the DBW and associated GLTA, covered through sections 5.0 – 6.0 of the report and supported by **Appendix I,** B1 at Former Methodist Church, Pont-y-Blew is categorised as pertaining to a bat roost suitability of '**Low**', in accordance with Bat Conservation Trust – Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th ed. (2023) (see **Figure 7.1, below**).

7.12 It is recommended that **a single dusk / emergence survey** is conducted during the active season of bats (May – August, extending into September), in order to establish if / how the building is being used by bats, and if so, identify the species present, abundance, roost locations and flight lines around the site following emergence surveys. A total of **2 surveyors** would be required to cover all elevations host to roost potential.

Table 7.2. Recommended minimum number of survey visits for presence/absence surveys to give confidence in a negative result for structures (also recommended for trees but unlikely to give confidence in a negative result).

Low roost suitability or PRF-I	Moderate roost suitability	High roost suitability or PRF-M
One survey visit. One dusk emergence survey[a] (structures). No further surveys required (trees).	Two separate dusk emergence survey visits[b].	Three separate dusk emergence survey visits[b].

Figure 7.1 – *BCT extract on 'Moderate' & 'Low' suitability survey implications*

7.13 B2 is categorised as pertaining to a bat roost suitability of '**Negligible**', in accordance with BCT guidance (see **Figure 7.2** below). B2 is understood to be retained without significant works for the purposes of this application and will require no further surveys, however, if works to this building is required, it is recommended that a pre-commencement check for roosting bats is completed by a suitably qualified ecologist prior to the commencement of works. Further, any demolition or deconstruction of features which could support roosting bats should be undertaken by hand, under a 'soft strip' technique and under the supervision of the suitably qualified ecologist.

7.14 **B3** is categorised as pertaining to a bat roost suitability of '**None**', and no further surveys or recommendations are therefore required.

Figure 7.2 - *BCT extract on 'None' and 'Negligible' suitability.*

Table 4.1. Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.

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

7.15 However, bats are 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 to B3, 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 7.3** for indicative evidence of bats.



Figure 7.3 – *Evidence of bats – droppings on the left / a common pipistrelle bat on the right – indicative*

7.16 All of the individual trees on site, have all been determined to relate to a bat roost suitability of '**None'** in line with current BCT guidance (see **Figure 7.4** below). As such, there are no further recommendations in regard to bats related to these trees.

Table 4.2. Guidelines for assessing the suitability of trees on proposed development sites for bats, to be applied using professional judgement.

Suitability	Description
NONE	Either no PRFs in the tree or highly unlikely to be any
FAR	Further assessment required to establish if PRFs are present in the tree

Figure 7.4 – *BCT extract on tree roost suitability criteria*

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

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

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

Birds

7.18 No impacts are applicable in relation to any Sch.1 (WCA) specially protected bird species such as barn owl, and no further surveys or recommendations are necessary in relation to specially protected birds, with no evidence of nesting within the site boundary.

7.19 Regarding wider breeding bird species, no direct evidence of breeding birds was encountered within the site, however, vegetation across the site, especially individual trees, hedges and garden shrubs, presents a plethora of potential nesting platforms for a wide range of bird species within the nesting bird season of March – August, inclusive.

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

7.20 Any vegetation clearance should be carried out outside of the breeding bird season. For works within the breeding bird season, any areas that can support nesting birds should be checked by a professional Ecologist for nesting birds within 48 hours or less prior to works commencing.

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

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

Other terrestrial mammals

Badger & hedgehog

7.22 The results of the desktop and field study indicate that impacts to badger by the proposals can be conclusively ruled out; no further recommendations are necessary.

7.23 The presence of hedgehog onsite, however, is considered possible. As such, it is recommended that Reasonable Avoidance Measures (RAMs) are enacted at the site to avoid any impacts to this species. RAMs to minimise construction impacts and prevent harm or injury to hedgehog should include, as a minimum:

- All working hours should be limited to daylight (dawn – sunset, or dawn – 6pm in winter) to avoid disturbing any hedgehog in vicinity of the development area.
- A pre-commencement check of the site, any stored materials and the immediate vicinity of development footprint will be carried out prior to any works each morning in order to check for the presence of hedgehog.
- Materials that may cause entrapment such as plastic / metal fencing, as well as those which could be potentially harmful to terrestrial mammals such as chemicals, should not be left around the site following the cessation of daytime work.
- No bulky equipment / general construction aggregates should be left around the development area, instead leave them on bare ground away from the risk zone.
- Stock piling of spoil material MUST be left un-compacted and not allowed to grass over, as if grassed over and compacted, terrestrial mammals may be encouraged to excavate new areas for refuge.
- Fires must not be used as a means of the disposing of waste materials.
- Any trenches or excavations must either be covered at the end of each working day, or a low angle (no more than 45°) sloping board of approximately 300mm width should be provisioned within any uncovered excavations to provide a means of escape for any terrestrial mammals.

Otter and water vole

7.24 The inspected section of the River Ceiriog was perceived to have suitability to support otter on an occasional basis, impacts to otter due to the proposed works are considered to be unlikely, however possible. No evidence of this species was identified by the surveyors, and the scope of works entail internal conversion of a single building, parking construction and limited ground works which will be of a temporary nature, occurring 20 meters north-west of the river. It is therefore assessed that any there is a limited chance that otter could be impacted

by the works, and as such, it is recommended that RAMs are enacted at the site with specific reference to otter, to include as a minimum:

- Implementing suitable pollution prevention measures in-line with Guidance for Pollution Prevention1 (GPP), specifically GPP2, GPP4, GPP5, GPP8, GPP13, GPP22 & GPP26.
- Working hours – otter movement up and downstream for foraging and commuting is more likely to be undertaken during the hours of darkness. Works will be restricted to daylight hours wherever possible, and only be undertaken between the hours of 07:00 and 20:00 in order to minimise disturbance.
- Site compounds, storage or waste dumping should be located away from all potential otter habitat – this will avoid disturbance to otters' routine and minimise pollution risks.
- Otters are inquisitive animals and may be attracted to investigate spoil heaps or machinery – these should not be left on the bankside to avoid potential impacts.
- 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,
- Not leaving any bulky equipment / general construction aggregates around the development area, instead leave them on bare ground away from the risk zone.
- Artificial lighting controls – some additional lighting may be required during the construction. Directional lights will be discussed with the ecologist to minimise any risk of disturbance on any fauna that may potentially be present in the working area.

7.25 The watercourse was assessed to have sub-optimal habitat for water vole, with no evidence of this species encountered. No further surveys therefore apply, though the above RAMs in relation to otter will provide protection to populations of water vole occurring downstream, subject to their presence.

Herpetofauna

Great crested newt (GCN)

7.26 Regarding GCN, the results of both the desktop and field study suggest that the presence of this species within the extended surroundings of the site is likely and that their presence within the immediate surroundings is possible. Although barriers to dispersal are present within the wider area, connectivity is still viable and a small pond network was found within 250m of the site, including a single small pond identified within the site boundary along with good terrestrial connectivity to the north and west which spreads is predominantly continuous within the local area. The occasional presence of GCN within the site, and use of the identified ponds (P1 & 2), is therefore deemed possible.

7.27 As such, the proposals could present a kill / injury / disturbance risk, should GCN be present on site during any construction activity, especially as the proposals include the loss of the on-site pond (P1), but also including the possibility for opportunistic use of areas for shelter and / or once the area becomes a construction site. This would constitute an offence under the legislation protecting this species. The habitats onsite offer moderate value terrestrial habitat and 'average' value aquatic habitat; while the site occupies a location within a limited pond network, it lies within further connected areas of high value foraging habitat, which may enhance the distance which GCN will travel from breeding ponds. These metapopulations could thus be impacted on significantly by the works subject to their presence.

7.28 To this end, it is considered that an Environmental DNA (eDNA) survey should be undertaken at **P1 & P2** to reasonably ascertain presence / absence of GCN within the on-site pond and

the site adjacent pond. The results could scope in a wider assessment and allow a more robust impact assessment and suite of subsequent recommendations to be arrived at.

7.29 Any eDNA approach would need to be carried out from **mid-April to June 30th** when local planning authorities will accept data as part of a planning application. The information gathered will help provide an initial impact assessment. Following the eDNA survey, depending on the results, a development license may or may not be required; further surveys to reinforce the license may also be required.

7.30 Where GCN would be impacted, a development license informed by survey data and a mitigation strategy may be required to legally proceed with the works. In some cases, a licence may not be necessary where risks can be avoided, minimised, or mitigated for through Reasonable Avoidance Measures (RAMs), if the consultant Ecologist, on the basis of survey information and specialist knowledge of the species concerned, considers that on balance the proposed activity is reasonably unlikely to result in an offence being committed.

Other herpetofauna

7.31 The presence of generalist amphibians is considered confirmed. Any works on site should therefore have due regard to local wildlife as discussed, and the RAMs detailed previously for terrestrial mammals should be extended to cover common amphibians.

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

7.33 Impacts to reptiles are considered unlikely given the site's disconnect from any potentially suitable habitats, however, as a precautionary measure, the aforementioned RAMs should be extended to include consideration for common reptiles.

Invertebrates

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

8.0 Green Infrastructure Statement

8.1 As discussed in section 6.0, the key green infrastructure present on site is considered to be the individual trees and native hedgerow. The post-development plans indicate the intended loss of the group of non-native spruce trees, but also include the planting of two native field maple. Recommendations for appropriate native species for inclusion within soft landscaping are made in **Appendix III**.

8.2 In accordance with the step-wise approach to be adopted by authorities in Wales, it is therefore recommended that the scheme **avoids** impacting upon the individual trees, exploring options for retention wherever possible. Should this not be possible, impacts to these areas should be **minimised**, or as a final resort, any removal of or negative impacts upon these habitats should be effectively **mitigated / restored**, potentially through the planting of further native trees within the landscaping of the site.

8.3 It is considered that, by following the above approach, the scheme will not have an adverse impact on the diversity, extent, condition, connectivity or the adaptability of the green infrastructure on site.

8.4 In addition to the above, as a means of enhancement and aiding the design of the scheme in keeping with local and national planning policy considering biodiversity net-gain principles, the proposals may consider incorporating wildlife friendly provisions in addition to those described. Further recommendations, regarding birds, native botanical species and invertebrates are provided within **Appendix III**.

9.0 Bibliography

- **Amphibian and Reptile Groups of the United Kingdom (ARG UK)**. 2010. *ARG UK Advice Note 5 - Great Crested Newt Habitat Suitability Index*.
- **Baker, J., Beebee, T., Buckley, J., Gent, T. and Orchard, D.** 2011. *Amphibian Habitat Management Handbook*. Amphibian & Reptile Conservation, Bournemouth.
- **Bat Conservation Trust (BCT),** 2023. *Bats and Artificial Lighting at Night, Guidance Note GN08/23.* Available from: https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/
- **Beebee, T. & Griffiths, R**. 2000. *Amphibians and Reptiles.* Collins
- **British Standards Institution (BSI)**. 2012. *Trees in relation to design, demolition and construction - recommendations*. BS 5837:2012. ISBN 978 0 580 69917 7.
- **BSBI**, 2020. *BSBI Online Plant Atlas*. Available from: https://plantatlas2020.org/atlas
- **CIEEM**, 2018. *Guidelines for Ecological Impact Assessment in the UK and Ireland*, 2nd edition. Available from: www.cieem.net/data/files/Publications/EcIA_Guidelines_Terrestrial_Freshwater_and_Coastal_Jan_2016.pdf
- **CIEEM**. 2020. *Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK*. 2nd Edition. Chartered Institute of Ecology and Environmental Management. Winchester, UK
- **CIEEM**, 2017. *Guidelines for Preliminary Ecological Appraisal*, 2nd edition. Available from: www.cieem.net/data/files/Publications/Guidelines_for_Preliminary_Ecological_Appraisal_Jan2018_1.pdf
- **CIEEM**, 2019. *Biodiversity Net Gain: Good practice principles for development*. Available from: www.cieem.net/data/files/Publications/Biodiversity_Net_Gain_Principles.pdf
- **CIEEM**, 2019. *ON THE LIFESPAN OF ECOLOGICAL REPORTS & SURVEYS*. Available from: https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf
- **Collins, J** (ed.) 2023. *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edition). The Bat Conservation Trust, London.
- **Communities & Local Government (C&LG)**, 2023. *National Planning Policy Framework*. Available from: https://assets.publishing.service.gov.uk/media/65a11af7e8f5ec000f1f8c46/NPPF_December_2023.pdf
- **Dean, M., Strachen, R., Gow, D. and Andrews, R.**, 2016. *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series).* The Mammal Society, London.
- **DEFRA**, 2018. *Net gain: Consultation Proposals*. Available from: https://consult.defra.gov.uk/land-use/net-gain/supporting_documents/netgainconsultationdocument.pdf
- **DEFRA**, 2022. *Keepers of time: ancient and native woodland and trees policy in England*. Available from: https://www.gov.uk/government/publications/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england/keepers-of-time-ancient-and-native-woodland-and-trees-policy-in-england
- **Drake, C. M., Lott, D. A., Alexander, K. N. A. and Webb, J.**, 2007. *Surveying terrestrial and freshwater invertebrates for conservation evaluation*. Natural England. Available from: https://publications.naturalengland.org.uk/file/63016
- **Edgar, P., Foster, J. and Baker, J**. 2010. *Reptile Habitat Management Handbook*. Amphibian & Reptile Conservation. Bournemouth.
- **English Nature**, 2001. *Great Crested Newt Guidelines. Version Aug 2001.*

- **Froglife**, 2015. *Surveying for reptiles*. Available from: https://www.froglife.org/wp-content/uploads/2013/06/Reptile-survey-booklet-3mm-bleed.pdf
- **Global Biodiversity Information Facility (GBIF)**, 2019. Available from: https://www.gbif.org/.
- **GOV.UK**. 2015. *Reptiles: surveys and mitigation for development projects.* Available online www.gov.uk/guidance/reptiles-protection-surveys-and-licences.
- **Gunnell, K. Grant, G. and Williams, C.**, 2012. '*Landscape and urban design for bats and biodiversity*'. Bat Conservation Trust.
- **Harris, J. E., Markwell, H. J., and Raybould, B. R.**, 2009. *A method for assessing water vole habitat suitability*. In Practice: Bulletin of the Institute of Ecology and Environmental Management. 65: 28 – 31.
- **Hodgetts, N.** 2011. *A revised Red List of bryophytes in Britain*. Field Bryology 103: 40-48.
- **Joint Nature Conservancy Council (JNCC)**, 2010. *Handbook for Phase 1 habitat survey.* Available from: http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitatsurvey.pdf
- **Magic Maps Application**, 2024. Available from: www.natureonthemap.naturalengland.org.uk/MagicMap.aspx
- **Mitchell-Jones, A. J. (ed.)**, 1987. *The bat worker's manual*. Dept. BWM, Nature Conservancy Council, Northminster House, Peterborough, PE1 1UA
- **Natural England**, 2015. *Great Crested Newts: Surveys and mitigation for developments and projects.* Available from: https://www.gov.uk/guidance/great-crested-newts-surveys-and-mitigation-for-development-projects.
- **North West Biodiversity Audit Group (NWBAG)**, 1999. *A biodiversity audit of north-west England.*
- **Oldham R.S.; Keeble J.; Swan M.J.S.; Jeffcote M**., 2000. *Evaluating the suitability of habitat for the Great Crested Newt* (*Triturus cristatus*). Herpetological Journal 10 (4), 143-155.
- **Reason, P.F. & Wray, S.** 2023**.** *UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats*. Chartered Institute of Ecology and Environmental Management, Ampfield
- **Rose, F, 1999.** *Indicators of ancient woodland: The use of vascular plants in evaluating ancient woods for nature conservation.* Available from: http://pad.basingstoke.gov.uk/documents/4753/01/02/76/01027625.PDF
- **Sewell, D., Griffiths, R. A., Beebee, T. J., Foster, J., and Wilkinson, J. W.**, 2013. *Survey protocols for the British herpetofauna*. Available from: http://www.narrs.org.uk/documents/Survey_protocols_for_the_British_herpetofauna.pdf
- **Stace, C**. 2019. *New Flora of the British Isles*, 4th edition. Cambridge University Press, The Edinburgh Building, Cambridge, CB2 2RU.
- **Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., Win, I**., 2021. *The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain*, British Birds 114, 723 – 747.
- **Strachen. R; Moorhouse. T.**, 2011. *The Water Vole Conservation Handbook*, 3rd ed. Wildlife Conservation Research Unit, University of Oxford.
- **Stroh. P. A; Leach. S. J; August. T. A; Walker. T. J; Pearman. D. A; Rumsey. F. J; Harrower. C. A; Fay. M. F; Martin. J. P; Pankhurst. T; Preston. C. D; Taylor. I**., 2014. *A Vascular Plant Red-List for England*, 2nd edition. Trollius Publications.
- **UKHab Ltd.**, 2023. *UK Habitat Classification Version 2.0*. Available from: https://ukhab.org/

Appendix I: Site Photographs



Plate 1 – *General character of the site, including the south-eastern orientation of B1.*



Plate 2 – *Further character of the north-eastern elevation of B1 and of the modified grassland.*

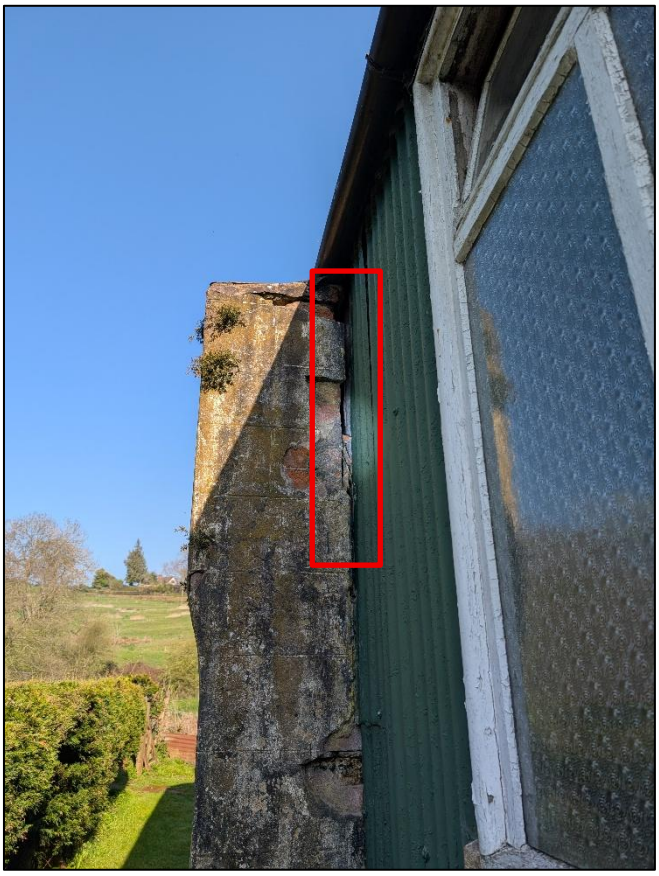


Plate 3 – *Stone pillar at the south-western orientation of B1 – note the PRFs behind the pillar.*



Plate 4 – *Internal conditions of B1.*



Plate 5 – *General character of B2*



Plate 6 – *General character of B2 and B3 (background)*



Plate 7 – *Character of P1*



Plate 8 – *Frogspawn/tadpoles present within P1*



Plate 9 – *Character of P2*



Plate 10 – *Further character of P2, including suitable GCN egg laying vegetation*



Plate 11 – *A hawthorn hedge on the north-eastern site boundary.*



Plate 12 – *A view of the River Ceiriog from the roadside.*

Appendix II: Botanical Species List

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

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

Taxon	Common Name	Scientific Name
Anthophyta	Bluebell	*Hyacinthoides non-scripta*
	Bramble	*Rubus fruticosus* agg.
	Broad-leaved dock	*Rumex obtusifolius*
	Cleavers	*Galium aparine*
	Clover	*Trifolium spp.*
	Colt's-foot	*Tussilago farfara*
	Common butterbur	*Petasites hybridus*
	Common columbine	*Aquilegia vulgaris*
	Common dog violet	*Viola riviniana*
	Common ivy	*Hedera helix*
	Common nettle	*Urtica dioica*
	Common ragwort	*Jacobaea vulgaris*
	Common vetch	*Vicia sativa*
	Cow parsley	*Anthriscus sylvestris*
	Creeping cinquefoil	*Potentilla reptans*
	Cuckoo-flower	*Cardamine pratensis*
	Curled dock	*Rumex crispus*
	Daisy	*Bellis perennis*
	Dandelion	*Taraxacum* agg.
	Dog's mercury	*Mercurialis perennis*
	Duckweed	*Lemna spp.*
	Green alkanet	*Pentaglottis sempervirens*
	Ground-ivy	*Glechoma hederacea*
	Hawthorn	*Crataegus monogyna*
	Hazel	*Corylus avellana*
	Herb-Robert	*Geranium robertianum*
	Hogweed	*Heracleum sphondylium*
	Hornwort	*Ceratophyllum spp.*
	Ivy-leaved speedwell	*Veronica hederifolia*
	Lords-and-ladies	*Arum maculatum*
	Male fern	*Dryopteris filix-mas*
	Marsh marigold	*Caltha palustris*
	Perennial rye-grass	*Lolium perenne*
	Ramsons	*Allium ursinum*
	Rhododendron (**INNS**)	*Rhododendron ponticum*
	Ribwort plantain	*Plantago lanceolata*
	Walnut	*Juglans regia*
	Wavy bittercress	*Cardamine flexuosa*
	Yellow iris	*Iris pseudacorus*

Taxon	Common Name	Scientific Name
Pinophyta	Cypress	*Cupressus sp.*
	Spruce	*Picea sp.*

Appendix III: Biodiversity Enhancement: General Recommendations

Bats

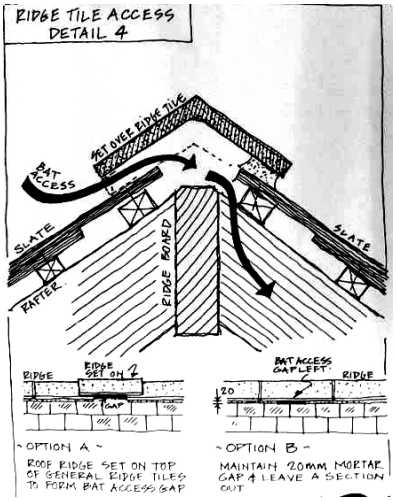
Integrated bat box

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.



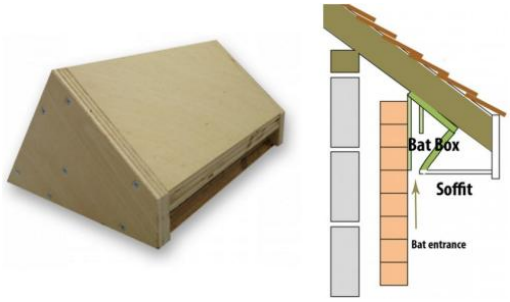
Ridge access

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.



Breeding Birds – House Sparrow



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

Breeding Birds – Other



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

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

Hedgehog Home

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

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





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

Amphibians – Hibernacula

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

You will need:

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

How to make your hibernaculum yourself:

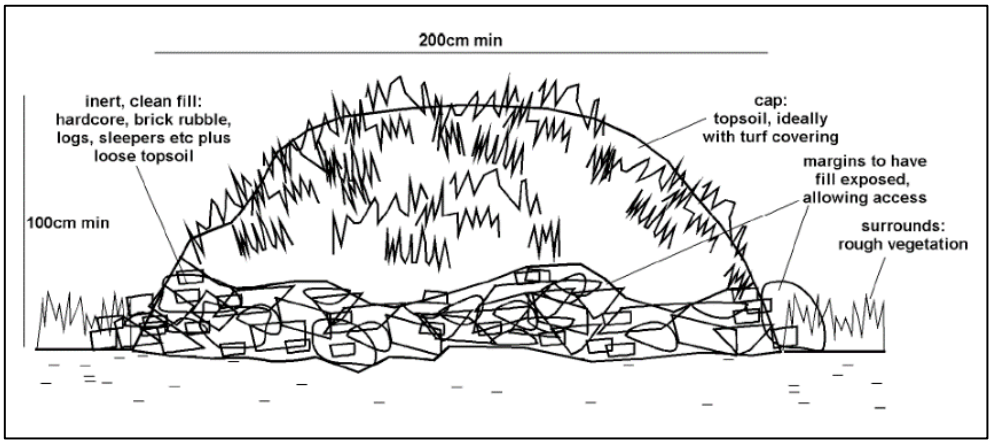
- In a sunny spot, dig a hole about 50cm deep and 1.5 metres across.
- Fill with logs, branches, bricks and rocks, leaving plenty of gaps in between.

- Insert entrance tubes (drainpipes) at ground level into the hole.
- Cover the pile with soil (to about 50cm high).
- Plant meadow seeds or long grasses over the mound to create a feast for summer pollinators.

To construct a hibernaculum to Natural England standard:

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

Illustrative aid for hibernaculum:





Invertebrates – Insect Hotels



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

Invertebrates – Bee bricks



The Bee Brick can be used in place of a standard brick or block in construction to create habitat for solitary bees. Alternatively, it can be used as a standalone bee house in your garden or wild patch. It will provide much needed nesting space for solitary bee species such as red mason bees and leafcutter bees, both of which are non-aggressive.

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

Specification

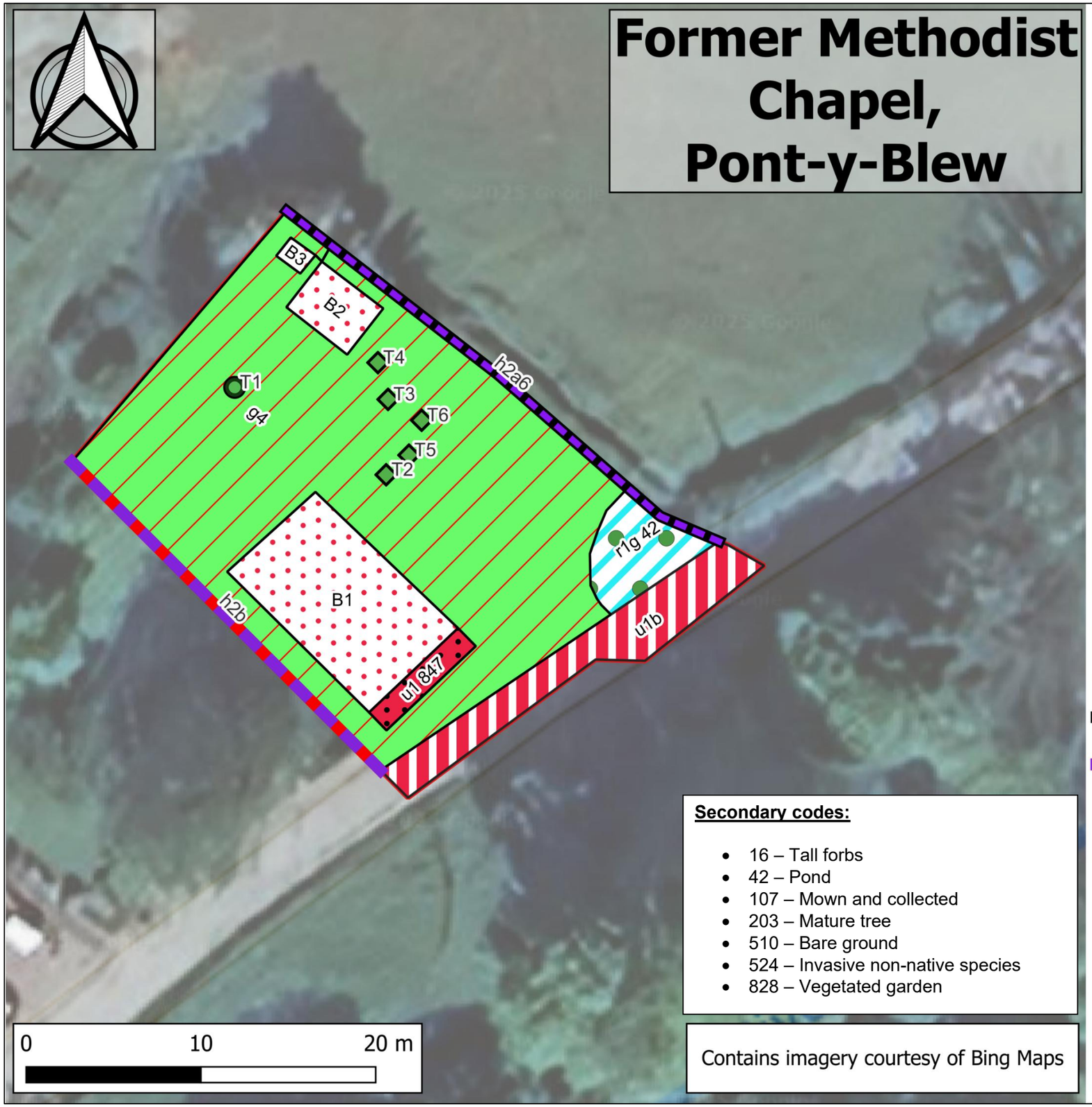
* Material: Concrete
* Dimensions: W 215mm x D 105mm x H 65mm
* Weight: 2.9kg
* Colours: White grey, yellow, dark grey and red

Native Planting and/or Landscaping

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

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

Appendix IV: UK Habs map



Tyrer Ecological Consultants Ltd
Specialists in Protected Species

UK Habitats Key

- Red line boundary
- g4 - Modified grassland (16, 107, 510, 828)
- r1g 42 - Other standing water; Pond (42)
- u1 847 - Built-up areas and gardens; Introduced shrub (524)
- u1b - Developed land. sealed surface
- u1b5 - Buildings
- Scattered tree - deciduous, medium (203)
- Scattered tree - coniferous, medium (203)
- h2a6 - Other native hedgerow
- h2b - Non-native and ornamental hedgerow

Survey Date: 09/04/2025
Drawn: Mr. J. Hark
Date Drawn: 26/06/2025
Checked & Approved: Mrs. K. Wilding
Size: A3
Scale: 1:300

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