





The Market House

Erbistock

Preliminary Ecological Assessment

Prepared For: Mr N. Lloyd

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The content of this document has been prepared in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Code of Professional Conduct and is compliant with British Standard BS42020:2013 Biodiversity Code of Practice for Planning and Development.

The conclusions and recommendations contained in this document are based upon information gathered by TEP and provided by third parties. Information provided by third parties and referred to herein has not been independently verified by TEP, unless otherwise expressly stated in the document.

Nothing in this report constitutes legal opinion. If legal opinion is required, the advice of a qualified legal professional should be secured.

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Executive Summary

Site Details	The site is located at land known as The Market House, Hampton Crescent, Wrexham, LL13 0DL.
Proposals	The assessment is required to support a planning application for the removal of the existing market garden buildings and greenhouses and for the construction of a single residential dwelling on the site known as The Market House.
Designated wildlife sites	■ No direct or indirect impacts on any statutory or non-statutory designated sites are anticipated as a result of the proposals.
Important Ecological Features present within or adjacent to the site	■ The site predominantly consists of introduced shrub, scattered trees, scrub and grassland with associated garden outbuildings. ■ Two ponds are present within the site. Ponds are listed on the Wrexham LBAP as a priority habitat.
Recommendations	The following recommendations are made to ensure that delivery of the project remains compliant with relevant legislation and policy: ■ Standard pollution prevention and dust control measures should be set out in a contractors Construction Environmental Management Plan (CEMP) and implemented during site clearance and construction works. ■ A Precautionary Working Method Statement (PWMS) should be produced to ensure no harm or injury to protected/priority species if present on site. ■ Further survey of the two onsite ponds to establish presence/absence of great crested newts. ■ Further survey of any building impacted by the development, categorised as having bat roosting suitability. ■ All retained trees adjacent to the site should be protected from incidental damage and disturbance during construction in accordance with current standards (BS5837:2012). ■ A Sensitive Lighting Strategy should also be incorporated within proposals to avoid impacts of lighting on nocturnal species, primarily bats. ■ Works should be completed outside of the nesting period (typically taken to be March to August inclusive). If clearance works, are necessary during the core breeding bird season, or at any time when bird nesting is suspected, a nesting bird check of the area by an experienced ecologist will be required. ■ Biodiversity enhancement could include the use of native species in new landscaping and the installation of bat and bird boxes.
Conclusions	There are constraints associated with the proposed development. Further surveys will be required before planning permission is granted.

This Executive Summary is not a substitute for the full report. Refer to the full text of this report for further detail.

1.0 Introduction

1.1 The Environment Partnership (TEP) was commissioned by Mr N Lloyd in September 2023, to complete a Preliminary Ecological Assessment of The Market House, Erbistock (hereafter referred to as 'the site'). The proposals are for the removal of the existing market garden buildings and greenhouses and for the construction of a single residential dwelling on the site known as The Market House. This Preliminary Ecological Assessment (PEA) seeks to outline any ecological constraints and recommendations in relation to the proposed development of the site.

1.2 An Ecological Desk Study has been produced to support this Preliminary Ecological Assessment, reported under separate cover (TEP Ref: 10163.001). This report should read in conjunction with the Desk Study.

1.3 The objectives of this assessment are:

- To describe the existing vegetation and give an overview of the habitats present on the site;
- To identify whether there are any features of conservation value such as legally protected species or habitats of biodiversity importance;
- To advise of further surveys or mitigation requirements that may be needed prior to development of the site; and
- To outline opportunities to provide biodiversity enhancement within possible future site redevelopment.

Site Location

1.4 The site is located at the site known as the Market House, Erbistock. The location of the site is depicted by the red line shown in Figure 1 and the approximate central grid reference of the site is SJ 35465 41427.

1.5 The site is approximately 1.1ha in area. Formerly commercial gardens, the site consists of introduced shrub with tall ruderal, hedgerows, ponds, hardstanding and associated garden buildings.

1.6 The wider landscape is predominantly rural and comprises arable and grazing pastures with associated hedgerows and deciduous woodland. The river Dee is situated approx. 60m south and the large town of Wrexham is situated approx. 9km to the north.



Figure 1: Site location

Planning Context

1.7 Relevant information regarding local planning policy is provided in the Ecological Desk Study (TEP Ref 10163.001).

1.8 The following policies in the Wrexham Unitary Development Plan 1996 - 2011 (adopted 2005) of relevance to biodiversity include:

- Policy PS11 - Biodiversity
- Policy GDP1 - Development Objectives
- Policy EC2 - Agricultural Land
- Policy EC4 - Hedgerows, Trees and Woodland
- Policy EC5 – Special Landscape Areas
- Policy EC6 - Biodiversity Conservation

Wrexham Local Development Plan 2 (LDP2) 2013 to 2028

1.9 The Wrexham Local Development Plan 2 (LDP2) will be a long-term land use and development strategy that will focus on achieving sustainable development.

1.10 This plan is currently being prepared and will eventually replace the Unitary Development Plan. WCBC has decided not to adopt the plan at this stage, however

it remains a material consideration with significant weight, as it has been found sound by a Planning Inspector.

1.11 The following policies relate to biodiversity and nature conservation:

- Draft Policy SP15 - Natural Environment;
- Draft Policy NE1 - International and Nationally Designated Nature Conservation Sites
- Draft Policy NE2 - Locally Designated Sites of Nature Conservation and Geological Importance
- Draft Policy NE3 - Trees, Woodlands and Hedgerows;
- Draft Policy NE6 - Waste Water Treatment and River Water Quality

1.12 The progress of the LDP2 can be viewed at the following link: *Wrexham Local Development Plan 2 (LDP2) 2013 to 2028 | Wrexham County Borough Council*

2.0 Methods

Ecology Desk Study

2.1 In line with current best practice (CIEEM, 2016[1], 2017b[2]), information regarding designated sites, notable habitats and existing protected and notable species records of the past decade, within a 2km minimum radius of the site was collated and reviewed to inform this ecological assessment. Further detail regarding ecological zones of influence (EZOI) applied for different ecological features and the sources of information included are presented in the Ecological Desk Study (TEP Ref 10163.001).

2.2 In brief, key data sources included Natural Resources Wales (open-source data), Environment Agency (open-source data); the Wrexham Unitary Development Plan and other relevant planning documentation, North Wales Environmental Information Service (COFNOD) and a review of relevant (within the past ten years) species records.

2.3 Statutory designated wildlife sites were searched for as follows (EZOI applied for each is indicated in brackets):

- Ramsar sites (10km);
- National Sites Network (10km), includes Special Areas of Conservation (SAC) and Special Protection Areas (SPA);
- Site of Special Scientific Interest (SSSI) (5km);
- National Nature Reserve (NNR) (5km); and
- Marine Nature Reserve (MNR) (5km);
- Local Nature Reserves (LNR) (2km).

2.4 Non-statutory designated wildlife sites were searched for within 2km of the site including Local Wildlife Sites (LWS).

2.5 Notable habitats were searched for within 500m of the site. Notable habitats may include those listed under any of the following:

- Ancient woodland;
- Main rivers;
- Habitats of principal importance (HPI) as listed by the requirements of Section 7 (S7) of the Natural Environment and Rural Communities (NERC) Act 2006[3]; and
- Local Biodiversity Action Plan Habitats (LBAP).

[1] CIEEM (2016) Guidelines for Accessing and Using Biodiversity Data. Chartered Institute of Ecology & Environmental Management

[2] CIEEM (2017b) Guidelines for Preliminary Ecological Appraisal, 2nd Edition. Chartered Institute of Ecology & Environmental Management

[3] Section 41 of the Natural Environment and Rural Communities Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England.

2.6 Pre-existing records for notable species were reviewed from the combined data sources, where found from within approximately 2km of the site. Notable species include those listed under any of the following:

- Protected animal species under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (EPS);
- Protected bird species under Schedule 1 of the Wildlife and Countryside Act 1981, as amended (WCA1);
- Protected animal species under Schedule 5 of the Wildlife and Countryside Act 1981, as amended (WCA5);
- Protected plant species under Schedule 8 of the Wildlife and Countryside Act 1981, as amended (WCA8);
- Invasive non-native plant species under Schedule 9 of the Wildlife and Countryside Act 1981, as amended (WCA9);
- Invasive non-native species under the Invasive Alien Species (Enforcement and Permitting) Order 2019 (IAS);
- Species of principal importance (SPI) as listed by the requirements of S7 Environment (Wales) Act 2016;
- Protection of Badgers Act 1992 (PBA);
- Red and Amber listed Birds of Conservation Concern (BRd/BAm); and
- Wrexham Biodiversity Action Plan Species (LBAP).

Limitations

2.7 Species records can provide a useful indication of the species present within the search area, although the absence of a given species from the dataset cannot be taken to represent actual absence.

Habitats and Flora

Phase 1 Habitat Survey

2.8 An extended Phase 1 habitat survey was undertaken on the site on 25th September 2023 by TEP ecologist Alun Evans. The survey was carried out in accordance with the Phase 1 habitat assessment methods (JNCC, 2010[4]) and Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017b[4]). The method records the habitat types present, within the survey route, based on the JNCC descriptions. Plant species were identified in accordance with the New Flora of the British Isles (Stace, 2019[5]) and recorded as target notes using the DAFOR[6] scale, where relevant.

[4] JNCC (2010) Handbook for Phase 1 Habitat Survey – a technique for environmental audit

[5] Clive Stace (2019) New Flora of the British Isles

[6] DAFOR = Dominant, Abundant, Frequent, Occasional & Rare

Limitations

2.9 The Phase 1 habitat survey was undertaken within the optimum survey period of April to mid-October.

2.10 Any ecological survey represents a snapshot of ecological conditions at the time of survey; ecological conditions may change over time. Efforts to identify dominant plant species for the purposes of characterising broad habitat types do not constitute a detailed botanical survey.

Fauna

2.11 Ordnance Survey maps and aerials were reviewed to identify potentially suitable habitats offsite within influence (e.g., dispersal distances for mobile species) of the site. The Ecological Desk Study (TEP Ref 10163.001) identified any pre-existing records for protected and notable species within at least 2km of the site.

2.12 The habitat survey included an extended assessment of the habitats present for their potential to support notable or protected wildlife species, as described at paragraph 2.6. Any signs indicating the presence of these species were recorded.

Amphibians

2.13 A Habitat Suitability Index (HSI) of the two ponds on site was carried out to assess suitability to support great crested newts.

2.14 HSI is a standard measure of calculating the suitability of a pond to support breeding great crested newts, based on an assessment of 10 characteristics (indices), including size, shading, depth, and vegetation profile. The assessment generates a number between 0 and 1 for each of the indices which are combined to provide an overall assessment of a pond's suitability to support GCN on a categorical scale, as presented in Table 1. The assessment has not been designed for or tested on other waterbodies such as ditches.

Table 1: HSI Suitability Scores

HSI Score	Suitability	Predicted GCN Occupancy of Ponds in each Category
<0.5	Poor	3%
0.5 to 0.59	Below Average	20%
0.6 to 0.69	Average	55%
0.7 to 0.79	Good	79%
>0.8	Excellent	93%

Bats

Ground Level Tree Assessment

2.15 A Ground Level Tree Assessment (GLTA) of trees within and immediately adjacent to the site was carried out to determine their suitability to provide bat roost habitat. The habitats on site and the surrounding area were also assessed for potential to support

roosting, foraging and commuting bats. The GLTA was undertaken at the same time as the Phase 1 Habitat Survey.

2.16 The GLTA involved the surveyor using close focussing binoculars to search from the ground for any Potential Roost Features (PRFs), which may be used by bats. Most tree roosts are created by one or a combination of the following:

- Old woodpecker holes;
- Splits in trunk, bough or large branches;
- Rot holes in trunk, bough or large branches;
- Holes formed by two boughs or branches growing in contact;
- Loose or lifting bark; and
- Underneath a covering of dense latticed creeper, usually ivy (*Hedera helix*).

2.17 Following the GLTA, the structures and trees within the site were categorised in accordance with the criteria for roost habitat assessments identified in the Bat Conservation Trust (BCT) 2023 Good Practice Guidelines (Collins)[7]. Bat roost habitat suitability categorisation details are described in Table 2. Roost habitat suitability categorisation takes into consideration parameters such as location, habitat connectivity, materials, condition and aspect of trees.

Table 2: Roost assessment criteria from Table 4.1 of BCT Guidelines 2023

Roost Suitability	Description of roosting habitat	Commuting 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 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	No obvious habitat features on site likely to be used by roosting bats.	No obvious habitat features on site likely to be used by commuting and foraging bats.
Low	A tree/structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions 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 materninty and not a classic cool/stable hibernation site, but could be used by individual bats).	Habitat that could be used by small numbers of commuting bats (e.g. a gappy hedgerow or an un-vegetated stream) or foraging bats (e.g. a lone tree or small patch of scrub) but which is isolated from the surrounding countryside by other habitat.

[7] Collins, J. (ed.) (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines. (4th edn). The Bat Conservation Trust, London.

Moderate	A tree/structure with one or more potential roost features that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat, but which is unlikely to support a roost of high conservation status (maternity or hibernation).	Continuous habitat connected to the wider landscape that could be used by bats for commuting (e.g. lines of trees or scrub or linked back gardens), or foraging bats (e.g. trees, scrub, water, grassland).
High Potential	A tree/structure with one or more potential roost features that are suitable for use by larger numbers of bats on a regular basis and potentially for longer periods of time, due to their size, shelter, protection, conditions 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 strongly connected with the wider landscape that is likely to be used regularly by commuting bats (e.g. river valley, vegetated stream, woodland edge, hedgerows with trees) or foraging bats (e.g. broad-leaved woodland, grazed parkland, tree-lined watercourses or ponds). Site is close to and connected to known roosts.

Limitations

2.18 There are no seasonal constraints for undertaking preliminary bat roost assessments of trees. However, the optimal period to undertake this survey of trees is between December and March when trees are out of leaf. This survey was undertaken outside of the optimal period, in April when some leaf cover is present. Where visibility was obscured, a precautionary assessment was made.

3.0 Results

Ecology Desk Study

Planning Context

3.1 Natural Resources Wales have developed seven Area Statements covering different areas of Wales. These statements are seen as a collaborative response to the Natural Resources Policy, published by the Welsh Government in 2017.

3.2 The Area Statement for Northeast Wales can be viewed by following the link: *https://naturalresources.wales/about-us/area-statements/?lang=en*

3.3 The following sections of the Area Statement relate to biodiversity and nature conservation:

- Develop and improve urban/rural green infrastructure;
- Increasing woodland cover for social, environmental and economic benefits; and
- Promoting the resilience of ecosystems in maintaining and enhancing biodiversity.

3.4 The Wrexham Unitary Development Plan 1996 - 2011, (adopted February 2005) outlines the Council's broad intention for development in the area and provides a framework for the more specific policies and proposals. Relevant extracts of local planning policy are provided in the Ecological Desk Study (TEP Ref 10163.001). The following policies relate to biodiversity and nature conservation:

- Policy PS11 - Biodiversity
- Policy GDP1 - Development Objectives
- Policy EC2 - Agricultural Land
- Policy EC4 - Hedgerows, Trees and Woodland
- Policy EC5 – Special Landscape Areas
- Policy EC6 - Biodiversity Conservation.

Wrexham Local Development Plan 2 (LDP2) 2013 to 2028

3.5 The Wrexham Local Development Plan 2 (LDP2) will be a long-term land use and development strategy that will focus on achieving sustainable development.

3.6 This plan is currently being prepared and will eventually replace the Unitary Development Plan. WCBC has decided not to adopt the plan at this stage, however it remains a material consideration with significant weight, as it has been found sound by a Planning Inspector.

3.7 The following policies relate to biodiversity and nature conservation:

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- Draft Policy NE2 - Locally Designated Sites of Nature Conservation and Geological Importance
- Draft Policy NE3 - Trees, Woodlands and Hedgerows;
- Draft Policy NE6 - Waste Water Treatment and River Water Quality

3.8 The progress of the LDP2 can be viewed at the following link: *Wrexham Local Development Plan 2 (LDP2) 2013 to 2028 | Wrexham County Borough Council*

Statutory Wildlife Sites

3.9 Full details regarding designated sites are provided within the Ecological Desk Study (TEP Ref 10163. 001).

3.10 There are three statutory designated sites of international importance within 10km of the site. These are:

- Midland Meres and Mosses Phase 2 RAMSAR, which is located approximately 9.8km southeast;
- Afon Dyfrdwy a Llyn Tegid - River Dee and Lake Bala SAC, which is located approximately 60m south; and
- Johnstown Newt Sites SAC, which is located approximately 5.9km northwest.

3.11 There are four statutory designated sites of national importance within 5km of the site. These are:

- Afon Dyfrdwy (River Dee) SSSI, which is located approximately 60m south;
- Cloy Brook Pastures SSSI, which is located approximately 3.8km east;
- Nant-Y-Belan and Prynela SSSI, which is located approximately 4.1km east; and
- Shell Brook Pastures SSSI, which is located approximately 1.8km south.

3.12 There are no statutory designated sites of regional or local importance within 2km of the site.

3.13 SSSI Impact Risk Zones (IRZ) highlight the potential for effects on a SSSI if certain types of development are planned within a specified radius of it. The site lies within the SSSI Impact Risk Zone (IRZ) for The River Dee SSSI, as determined by Natural England to identify likely impacts upon SSSIs, SACs, SPAs or Ramsar sites that may result from planned development. The proposals do not meet any of the risk parameters identified for this IRZ.

Non-Statutory Wildlife Sites

3.14 There are eight non-statutory wildlife sites identified within 2km of the site, the closest of which is, Llan Y Cefn which is situated approximately 100m to the southern boundary of the site.

Notable Habitats

3.15 The Desk Study identified Improved grassland, mosaic and ancient woodland habitats as identified on Natural Resources Wales's priority habitat inventory, present within 500m of the site.

Notable Flora and Fauna

3.16 A number of species over a 2km search radius were identified through the data from the North Wales Environmental Information Service (Cofnod). These records are detailed in the relevant species sections below.

Habitats and Flora

Phase 1 Habitat Survey

3.17 Habitats of ecological value present in and around the site are described below and illustrated in Drawing G10163.007. Target notes (TN) are provided in Appendix A.

3.18 Habitats Present within the site include:

- Introduced Shrub;
- Native Species-rich Hedgerow;
- Other Hedgerow;
- Amenity Grassland;
- Species-poor Modified Neutral Grassland[8];
- Tall Ruderal;
- Ephemeral/Short Perennial;
- Bare Ground with Ephemeral/short perennial;
- Standing Water;
- Scattered Trees;
- Buildings; and
- Hardstanding/walls

Introduced Shrub

3.19 Introduced shrub and native scattered scrub are present at TN7. Species here include box *Buxus sempervirens,* lilac *Syringa vulgaris* and buddleia *Buddleja davidii.* Trees here include hazel *Corylus avellana,* alder *Alnus glutinosa,* Eucalyptus *eucalyptus globulus* and yew *Taxus baccata*.

[8] The neutral grassland categories detailed within the Phase 1 Habitat Survey Handbook are concentrated on grassland associated with rural situations (pastures and meadows), as such it was agreed with JNCC in 2005 (P. Gateley, pers.comm.) that neutral grassland habitats that don't easily fit within these categories, usually within urban or industrial areas, can be referred to as modified neutral grassland.

3.20 A large portion of the eastern side of the site at TN8 and TN9 is dominated with introduced shrub and ornamental plants including Hydrangea *Hydrangea macrophylla*, Autumn Joy *Sedum spectabile* and berberis red leaf *Berberis Ottawensis x auricoma* with Himalayan birch *Betula utilis* throughout.



Figure 2: Introduced ornamental shrub



Figure 3: Introduced shrub at TN8 and TN9

Native Species-rich Hedgerow

3.21 TN5 on the western boundary of the site, is a native species-rich hedgerow at approximately 4m high, with occasional trees. Hawthorn *Crataegus monogyna* is the most frequently occurring species with occasional holly *Ilex aquifolium*, elder and hazel. Other tree species here are walnut *Juglans regia*, English oak *Quercus robor*, ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus*, blackthorn *Prunus spinosa* and field maple *Acer campestre*. Some recent underplanting/gapping up has taken place.

Other Hedgerows

3.22 Species poor hedgerow made up of planted hornbeam ***Carpinus betulus,*** beech *Fagus sylvatica* and yew divide the site.

3.23 Other hedgerows on site consist of coniferous hedgerow *Cupressus × leylandii* and ornamental hedgerow made from box *Buxus sempervirens*. These hedgerows act as divisions within the garden.



Figure 4: Hedgerow at TN5



Figure 5: Planted hedgerow

Amenity Grassland

3.24 There is a walkway strip of amenity grassland at the eastern and southeastern aspect of the site. This is surrounded with introduced ornamental shrub and scattered trees.

Species-poor Modified Neutral Grassland

3.25 Species-poor modified neutral grassland exists at TN2 (Figure 6) in the southwest of the site. This area is mostly grass species to a sward height of <15cm, with scattered herbs. Yorkshire fog *Holcus lanatus* is abundant here with false oat-grass *Arrhenatherum elatius* appearing occasionally. Herb species such as scarlet pimpernel *Anagallis arvensis,* selfheal *Prunella vulgaris,* black medick *Medicago lupulina* and white clover *Trifolium repens* are also present.

Tall Ruderal

3.26 Tall Ruderal with scattered scrub is present at TN3. The tall ruderal consists mainly of nettle *Urtica dioca*, bramble *Rubus fruiticosus* and cleavers *Galium aparine* with other species such as foxglove *Digitalis purpurea,* Italian arum *Arum italicum,* and lesser burdock *Arctium minus.*



Figure 6: Species-poor modified neutral grassland at TN2



Figure 7: Ephemeral/short perennial vegetation at TN1

Ephemeral/Short Perennial – Bare ground with Ephemeral Short Perennial

3.27 TN1 is an area of ephemeral/short perennial vegetation (Figure 7) with remnants of a bonfire in a corner. This area has frequent broad-leaved willowherb *Epilobium montanum* with wood avens *Geum urbanum* and sun spurge *Euphorbia helioscopia* occurring occasionally. Other species at TN1 include groundsel *Senecio vulgaris*, cocksfoot *Dactylis glomerata* and ragwort *Senecio jacobaea*.

3.28 TN4 in the northwest corner of the site is also an area of bare ground with ephemeral/short perennial with occasional sun spurge and knotgrass *Polygonum aviculare,* small flowered cranesbill *Geranium pusillum* and annual meadow grass a *Poa annua* appearing rarely. This area also has the remnants of a bonfire and a pile of woodchip.



Figure 8: Ephemeral/Short Perennial at TN4



Figure 9: Bonfire remains at TN4

Standing Water

3.29 The site contains two good sized mature ponds. HSI (Habitat Suitability Index) surveys were undertaken at both ponds. P1 is a small, stone lined pond measuring approximately 10x5m, towards the north of the site. Hornwort Sp. *Ceratophyllum demersum* is occasional alongside water soldier *Stratiotes aloides*, soft rush *Juncus effusus* and water figwort *Scrophularia auriculata*.

3.30 P2 is the larger pond of the two. The invasive non-native plant, New Zealand Pygmyweed *Crassula helmsii* is present with white water lily *Nymphaea alba,* great reedmace *Typha latifolia* with elephant's ears *Bergenia cordifolia* surrounding the pond. P2 has an island in the middle covered in scrub including bramble *Rubus fruticosus* and dog rose *Rosa canina*.



Figure 10: Pond One



Figure 11: Pond Two

Scattered Trees

3.31 There are a good number of planted scattered trees around the site including avenues of ornamental trees such as Himalayan birch *Betula utilis*, rowan species *Sorbus* sp. silver birch *Betula pendula* and cherry *Prunus avium* (Figures 12 and 13).



Figure 12: Scattered Trees



Figure 13: Scattered Trees

Hardstanding/walls

3.32 Hardstanding gravelled areas surround the garden buildings in the north of the site. Brick walls form boundaries around part of the northern section of the site.

Notable or Invasive Flora

3.33 In addition to New Zealand Pygmyweed in P2 WCA9 invasive non-native species wall cotoneaster *Cotoneaster horizontalis* and montbretia *Crocosmia pottsii x aurea = C. x crocosmiiflora* were identified on the site. No protected (WCA8) species were identified on site.

Habitat Connectivity

3.34 The habitat surrounding the site is open countryside and agricultural fields with associated hedgerows. The River Dee is also approx. 60m to the south. Habitat connectivity between the site and the immediate landscape is good for all species as there is unrestricted movement. The ancient woodland along the River Dee provides good connectivity for bats and birds to the wider landscape. There is some housing in the surrounding area, which is mostly detached stone or brick buildings, each plot has a substantial green space. There is also a church and a few agricultural buildings with associated barns and outbuildings.

Fauna

3.35 The potential for the site to support legally protected and notable species has been assessed using the results of the desk study and observations of habitats within and immediately surrounding the site made during the site survey. The habitats present within the site are suitable for the following species:

- Amphibians;
- Bats;
- Birds;
- Badgers:
- Hedgehogs;
- Brown Hare:
- Otter:
- Reptiles: and
- Invertebrates.

3.36 Further consideration is given below to the likelihood for these species to be present within the site:

Amphibians

3.37 There are two ponds on site. There are no ponds within 250metres within the surrounding landscape.

3.38 No records were returned for GCN for within 2km of the site.

3.39 The HSI assessments were undertaken at both ponds. The survey results for pond P1 showed that the pond had a HSI score of 0.72 which assessed the waterbody of being "good" GCN habitat to breed. Pond P2 had a HSI score of 0.89 which assessed the waterbody as being “excellent” GCN habitat to breed.

3.40 The grassland, introduced shrub, scattered scrub, and woodchip piles within the site provide suitable habitat for foraging and ranging common amphibians. The root balls of trees and hedgerows, tall ruderal, building bases, piles of woodchip and scrub provide suitable habitat for hibernating amphibians.

Bats

3.41 The desk study returned records for bats within 2km of the site boundary, including records of:

- Bats *Chiroptera* (EPS, S7, WCA5, LBAP, UKBAP)
- Soprano Pipistrelle *Pipistrellus pygmaeus* (EPS, S7, WCA5, LBAP, UKBAP)

Ground Level Tree Assessment

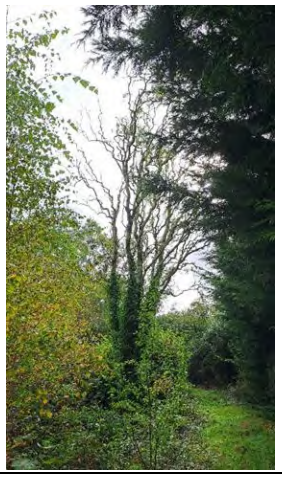
3.42 Most trees within the site were considered to be unsuitable for roosting bats. These trees are relatively young with narrow stems and lack any suitable PRF’s and were not individually mapped.

3.43 The location of the more mature trees is shown on Drawing G10163.007. Except for T1, these trees lacked any obvious roosting features and were therefore categorised as ‘None’ suitability for roosting bats.

3.44 Tree T1 was assessed as required Further Assessment for bat roost suitability as it could not be fully viewed from within the site.

Table 3: Tree Descriptions and Bat Roost Categorisation

Tree ref.	Description	Photograph	Roost Suitability Categorisation

T1	Beech tree approx. 20m+. No obvious features but 50% is offsite		FAR - Further assessment required
T2	Corkscrew Willow. Light ivy cover on trunk but no obvious features		None
T3	Corkscrew Willow. Multi stemmed. No obvious features		None

T4	Beech tree, young and multi stemmed. No features.		None
T5	Alder approx. 20m+ tall, light ivy cover on trunk but no obvious features.		None
T6	Alder. Light ivy cover on trunk but no obvious features.		None

Buildings

3.45 All buildings on site were categorised for their suitability to support roosting bats. The glasshouses/ buildings and metal water tanks (B1,5-11) are all considered to be of negligible suitability.

3.46 Buildings B2 and B4 were assessed as moderate suitability – confirmed roost with evidence of bats feeding found in both of these buildings. B3 was assessed as having low suitability.

Table 4: Building Descriptions and Bat Roost Categorisation

Building ref.	Description	Photograph	Roost Suitability Categorisation
B1	Medium sized glasshouse		None
B2	A former stable type building that has been converted into a toilet block with cool storage to one side. Has a wooden roof with felt, some is ripped/missing. There is a potential void in the roof above the cool storage area with a gap in the wood panelling. Bat droppings and feeding remains (orange underwing moth wings) found. Probable bat feeding perch.	 	Moderate – confirmed roost
B3	Buildings made from breezeblock and timber with a perspex roof and breezeblock supporting columns. The breezeblocks have 3x3cm holes in and there are gaps present in the roof throughout the buildings.		Low

B4	Metal framed building with breezeblock and brick walls and a metal roof. Currently used as car storage. Bat droppings and feeding remains (orange underwing moth wings) found. Probable bat feeding perch.	 	Moderate – confirmed roost
B5	A long glasshouse		Negligible
B6	An open timber construction with a Perspex roof		Negligible

B7	A corrugated open topped metal water tank with willow growing out of it.		Negligible
B8	Second metal open topped water tank.		Negligible
B9	A large glasshouse currently used as a log store. Some glass missing.		Negligible
B10	An open lean-to with a Perspex roof attached to building B9.		Negligible
B11	Medium sized glasshouse		Negligible

Commuting and Foraging

3.47 The grassland, hedgerows, scattered scrub, tall ruderal, introduced shrub and scattered trees within the site provide suitable foraging and commuting habitat for bats. The site has good connectivity to the wider landscape via the hedgerows and arable and grazing fields surrounding the site and into the wider landscape. It is therefore considered that the site has good commuting and foraging suitability for bats in the wider landscape.

Birds

3.48 The desk study identified records of notable bird species within 2km of the site boundary, full details of which are provided in the Ecological Desk Study (TEP Ref 10163.001).

3.49 Records of Schedule 1 bird species were returned from within 2km of the site. These are:

- Barn Owl *Tyto alba* (WCA1, LBAP)
- Goshawk *Accipiter gentilis* (WCA1, BAm)
- Kingfisher *Alcedo atthis* (WCA1)
- Osprey *Pandion haliaetus* (WCA1, BAm)
- Red Kite *Milvus milvus* (WCA1); and
- Redwing *Turdus iliacus* (WCA1)

3.50 Bird Species of Principal Importance recorded within 2km of the site include:

- Black-headed Gull *Chroicocephalus ridibundus* (S7 BRd)
- Dunnock *Prunella modularis* (S7, BAm)
- House Sparrow *Passer domesticus* (S7, BAm, UKBAP)
- Kestrel *Falco tinnunculus* (S7, BRd)
- Marsh Tit *Poecile palustris* (S41, BRd, UKBAP); and
- Starling *Sturnus vulgaris* (S41, BAm, UKBAP, LBAP)

3.51 The grassland, scattered scrub, tall ruderal, introduced shrub and scattered trees within the site provide opportunities for foraging and nesting bird species. Buildings B2, B3, B4 and B6 could also be used for nesting.

Badger

3.52 [redacted]

3.53 [redacted]

3.54 [redacted]

[redacted]

Hedgehog

3.55 The desk study identified four records of hedgehog *Erinaceus europaeus* (SPI) within 2km of the site.

3.56 No evidence of hedgehog was identified on site during the survey. However, the introduced shrub and tall ruderal habitats within the site provide potential sheltering and hibernating habitat for hedgehog and the grassland, hedgerow and introduced shrub habitats within the site are suitable to support foraging and ranging hedgehog.

Brown Hare

3.57 The desk study identified one record for brown hare within 2km of the site.

3.58 No evidence of brown hare was identified on the site during the survey, however, the hedgerows and introduced shrub habitats within the site provide potential sheltering opportunities and the grassland habitats are suitable for foraging hare.

Otter

3.59 The desk study identified six records for otter for within 2km of the site, the nearest was 65m to the south on the River Dee.

3.60 Otters require riparian habitats for foraging and commuting with wetlands or woodland in close proximity for shelter. As no fish were observed in the onsite ponds and therefore it is considered unlikely that otter would venture into the site given there are more suitable habitats along the river Dee. Therefore, no further consideration is required in respect of this species.

Reptiles

3.61 The desk study did not identify any records of reptiles for within 2km of the site.

3.62 No evidence of reptiles was found on site during the survey, however, the areas of scrub and tall ruderal, particularly those bordering the waterbodies, provide suitable sheltering and foraging habitat for reptiles.

Invertebrates

3.63 The desk study identified one record for a S7 and UKBAP invertebrate for within 2km of the site.

3.64 The scattered broadleaved trees, woodchip mounds, scrub, tall ruderal, ponds and grasslands, on the site provide potential habitat for a range of invertebrate species.

4.0 Conclusions

4.1 This section concludes the potential impacts on ecological features associated with the proposed development described in Section 1.0.

4.2 Consideration is given to the 'mitigation hierarchy', i.e. that impacts are first avoided or where this is not practicable, mitigated and as a final resort, compensated (off-set).

Relevant Planning Policies and Guidance

4.3 Proposed development should take into consideration current Local Policies and draft policies, to address potential ecological issues with regard to proposed development and aim to maintain, protect and enhance biodiversity and the ecological network in the local and wider area.

Wildlife Sites

Statutory Designated Sites

4.4 There are three internationally designated sites for nature conservation within 10km of the proposed development site and no statutory designated sites of regional or local importance within 2km of the site. There are four statutory designated sites of national importance within 5km of the site.

4.5 The River Dee SAC/SSSI is located approx. 60m from the site. Given the distance of this designated site from the development boundaries, there may be indirect impacts as a result of development proposals dependent on how foul/waste water is treated.

The site is located within SSSI IRZ for the River Dee SSSI; the nature of the project does not match any of the potential risk criteria, however, consultation with Natural Resources Wales (NRW) and WCBC is advised with regard to impacts of the development proposals on the phosphate levels in the River Dee.

Non-statutory Designated Sites

4.6 There are eight non-statutory locally designated sites within 2km of the proposed development site. The nearest is Llan y Cefn LWS which is located approximately 100m south of the site, on the southern bank of the River Dee.

4.7 Given the small scale of the development proposals and the lack of hydrological connection to any non-statutory locally designated sites, no direct or indirect impacts are anticipated as a result of the development proposals.

Habitats and Flora

Notable Habitats

4.8 Ancient Woodland habitats as identified on Natural Resources Wales priority habitat inventory are present within 500m of the site. The closest area of this habitat is located approximated 90 metres to the south of the site but separated from the site by the

River Dee. No direct or indirect impacts on ancient woodland habitat are therefore anticipated as a result of the development.

4.9 The native species-poor hedgerow (TN5) on the western site boundary qualifies as the S7 priority hedgerow habitat. Hedgerows form ecological linkages and corridors within the landscape and are important at a local level. The native hedgerow on the western boundary of the site is considered to be of high value to several species. Any loss of hedgerow within the site would have an impact on the ecological value of the site.

4.10 Several trees are present within the perimeters of the site. Appropriate tree protection measures will need to be put in place to ensure an adequate habitat buffer from retained trees is maintained from the proposed development during construction of the site. Adequate replacement planting is recommended for any trees lost to the development.

Notable or Invasive Flora

4.11 The invasive (WCA9) non-native invasive species New Zealand Pygmyweed, wall cotoneaster and montbretia were identified during the extended Phase 1 habitat survey. Appropriate measures should be put in place to ensure these species do not spread off site.

Fauna

Amphibians

4.12 GCN and their habitats are fully protected under the Habitats Regulations, the Wildlife & Countryside Act 1981 (as amended) and the LBAP for Wrexham.

4.13 There are two ponds present on site and therefore there may be implications for the development proposals with regard to amphibian breeding habitat.

4.14 There is also suitable hibernating, foraging and commuting habitat on site. Therefore, there will be implications for the development with regard to amphibians.

Bats

4.15 All British bats are European protected species, afforded full protection under the Habitats Regulations and the Wildlife & Countryside Act 1981 (as amended). Bats are protected from killing or injury, and from disturbance at the place of rest. Bat roosts are also protected from obstruction, damage or destruction (whether or not a bat is in occupation at the time). Several species are also SPI, and the lesser horseshoe bat is listed on the Wrexham LBAP.

4.16 One tree on the southern boundary of the site required further assessment if impacted as a result of the development proposals.

4.17 Three of the buildings (B2, B3, B4) on site have suitability for roosting bats. Buildings B2 and B4 were assessed as moderate suitability – confirmed roost with evidence of bats feeding found in both of these buildings. B3 was assessed as having low

suitability. If these buildings are to be impacted by the development, there will be implications for roosting bats in buildings.

4.18 The grassland, introduced scrub, tall ruderal, hedgerow and scattered trees on site provide good commuting and foraging habitat for bats. If these are retained during development, then connectivity with habitats for commuting and foraging bats will be retained and no significant loss of foraging and commuting habitat would be directly anticipated. However, if these habitats are to be lost under development proposals, this would directly impact connectivity with surrounding habitats for commuting and foraging bats.

Birds

4.19 Native nesting birds, their nests and eggs are protected under the Wildlife & Countryside Act 1981 (as amended) from damage and destruction, from the time of nest construction to fledging of the young.

4.20 The habitats within the site, including the grassland, introduced shrub, tall ruderal with scattered scrub and scattered trees, and some of the buildings provide potential to support foraging and nesting birds. There may be implications with regards to nesting birds if any vegetation clearance is proposed during the nesting period (typically taken to be March to August inclusive).

Badger

4.21 Badgers are protected under the Protection of Badgers Act 1992 from killing, injury and certain acts of cruelty. Their setts are also protected from damage, obstruction or destruction.

4.22 [redacted]

Hedgehogs

4.23 Hedgehogs are a species of principal importance. The grassland, tall ruderal with scattered scrub and introduced shrub within the site provide suitable foraging, commuting, sheltering and hibernating habitat for hedgehogs. Therefore, there may be implications for the proposed development with regards to hedgehogs.

Brown Hare

4.24 Brown hare are a species of principal importance. The grassland, hedgerows, introduced shrub habitats and tall ruderal habitat within the site provide suitable foraging, commuting and sheltering habitat for brown hare. Therefore, there may be implications for the proposed development with regards to this species.

Reptiles

4.25 Common lizard, slow-worm, grass snake and adder are protected under the Wildlife and Countryside Act 1981 (as amended) from killing and injury and are all S41 species of principal importance (SPI).

4.26 Reptiles favour a range of habitat types and varying topography to provide a combination of necessary conditions required for shelter, foraging and basking. As the habitats within the site provide potential to support foraging reptiles there may be implications with regards to these species, in particular slow worm, if any vegetation clearance is proposed.

Invertebrates

4.27 The habitats within the sites are suitable to support a range of invertebrate species. Suitable invertebrate habitat will be lost as a result of development proposals. Therefore, there may be implications for the proposed development with regard to invertebrates.

5.0 Recommendations

5.1 This section describes appropriate and proportionate measures for impact avoidance, mitigation and enhancement required or recommended to address the potential ecological effects described in Section 4.0.

Wildlife Sites

Statutory Designated Sites

5.2 The River Dee SAC/SSSI is located approx. 60m from the site boundary. Given the proximity there may be indirect impacts as a result of development proposals dependent on how foul/waste water is treated. Consultation with Natural Resources Wales (NRW) and WCBC is advised with regard to impacts of the development proposals on the phosphate levels in the River Dee.

5.3 Standard pollution prevention and dust control measures should be set out in a contractors Construction Environmental Management Plan (CEMP) and implemented during site clearance and construction works. The CEMP will identify measures to ensure the potential for indirect impacts on retained habitats within and adjacent to the site.

Habitats and Flora

5.4 All retained trees and native hedgerows within and adjacent to the site should be suitably protected in accordance with BS5837:2012, to ensure no damage to the canopy or root zone during site clearance and construction works. A Root Protection Zone (RPZ) should be implemented around retained trees adjacent to the site if development is likely to affect the trees, their roots and overhanging canopies.

5.5 Replacement planting of trees and/or scrub within the site is recommended to mitigate for any loss of these habitats to the development. All tree and/or scrub loss is replaced with native, locally stocked species.

5.6 Invasive plant species New Zealand pygmyweed, wall cotoneaster and montbretia are present within the site and will need to be controlled under an Invasive Species Management Plan to ensure none are spread during the works.

Fauna

Amphibians

5.7 GCN require both aquatic and terrestrial habitat for breeding. Both habitats are present on site. It is recommended that further assessment of the two water bodies on site is undertaken. Environmental DNA (eDNA) surveys should be undertaken of the two onsite waterbodies in order to confirm the presence/absence of GCN and inform any future planning application. eDNA samples can only be taken between mid-April to June (inclusive).

5.8 Should a positive eDNA result be returned, subsequent population estimate surveys may be required to inform a future protected species mitigation licence application to NRW. This will consist of six survey visits to the waterbody between the months of mid-March to mid-June, with at least three surveys undertaken in peak season, between mid-April and mid-May. Should the presence of great crested newt be confirmed, a mitigation licence is likely to be required.

5.9 If GCN are confirmed as likely absent from the site, precautionary working measures should be adopted to minimise the risk of harm or injury to amphibian species during site clearance, vegetation clearance and construction works. Measures should be outlined within a Precautionary Working Method Statement (PWMS) to inform the contractors CEMP to ensure no harm or injury to common amphibians.

Bats

5.10 The results of the ground level tree assessment are valid for two surveys seasons. If works do not proceed within this time, further ecological assessment will be required.

5.11 If the tree on the southern boundary of the site is to be impacted further survey will be required including inspection from third party land.

5.12 Additional survey will be required on buildings with moderate or low bat roost suitability which will be directly impacted by the development. This would include dusk emergence bat surveys to watch, listen for and record bats exiting or entering the buildings. In accordance with BCT Guidelines, two survey visits will be required for moderate suitability buildings, with one survey visit for low suitability buildings. The surveys must be completed between May and September, with at least one visit between May and August.

5.13 Following nocturnal roost survey, if bats are confirmed roosting within any buildings, there will be a requirement to obtain a European Protected Species (EPS) Mitigation Licence from Natural Resources Wales prior to felling. A total of three nocturnal roost surveys will also be required to undertake roost characterisation. Following submission of a licence application, NRW aim to return the outcome of the licence application within 6 weeks. This should be taken into consideration in line with the proposed programme of works.

5.14 To minimise impacts on commuting and foraging bats existing vegetation should be retained. If significant vegetation removal is required bat activity surveys in the form of walked transects or deployment of static detectors may be required.

5.15 A Sensitive Lighting Strategy should be implemented to avoid adverse impacts on bats and maintain dark corridors. This is of particular relevance to construction during the autumn and spring when bats are active, and when working hours fall within an hour of dusk or dawn and artificial lighting is required.

Birds

5.16 It is recommended that all vegetation clearance/building demolition within the site avoids the core breeding bird season, March to August inclusive; although, it should be noted that bird nesting can take place outside this period.

5.17 If clearance works are necessary during the core breeding bird season, or at any time when bird nesting is suspected, a nesting bird check of the area by an experienced ecologist will be required. The nesting bird check will take place no more than 24 hours prior to the clearance works. In the event that an active nest is found the ecologist will provide advice on setting up a suitable protection area around the nest until the young have fledged. The extent of the exclusion zone will depend upon the bird species concerned and its location within the development.

5.18 Extensive clearance of potential bird nesting habitat is not recommended during the core breeding season, which could have a fragmentation impact for suitable breeding habitat and development programmes will take this constraint into account.

Badger

5.19 A badger survey of the land adjoining the site is recommended following the standard approach detailed in Surveying Badgers (Harris et al., 1989) and used during the National Badger Survey (Cresswell et al., 1990). If there are any badger setts present adjacent to the site and an appropriate buffer cannot be maintained, then further survey may be required to establish activity. If an active sett is discovered that cannot be retained or an appropriate buffer cannot be retained, then mitigation would need to be agreed by the ecologist with NRW and a licence would likely be required before works could lawfully proceed.

5.20 If no badger setts are identified during the initial badger survey a pre-construction check for badgers will be required prior to works commencing to confirm that no new setts have been excavated within or immediately adjacent to the site which may be impacted by the proposals. In the event that a potential sett is uncovered during the preconstruction check or vegetation clearance, then works would be delayed or stopped immediately and the protocol described above should be followed.

5.21 There is also potential for impacts on badgers during site clearance and construction works. Standard precautionary working measures will need to be implemented to ensure no harm or disturbance to foraging or ranging badgers as a result of the development. These measures should be set out within the PWMS.

Hedgehogs

5.22 Precautionary working measures should be adopted to minimise the risk of harm or injury to hedgehogs during vegetation clearance and construction works. Measures should be outlined within a protected/priority species Precautionary Working Method Statement (PWMS) to ensure no harm or injury to hedgehogs, if present on site.

5.23 Work likely to cause disturbance during hibernation – for example removal of hibernation habitats such as hedgerows – should not take place during November to March.

5.24 One of the factors contributing to the decline of hedgehogs in the UK is habitat fragmentation, caused in part by garden boundaries becoming more secure. Consideration could be given to hedgehog-friendly features in the development

through providing links between garden areas and provision of hedgehog boxes in retained habitats.

Brown Hare

5.25 Precautionary working measures should be adopted to minimise the risk of harm or injury to brown hare during vegetation clearance and construction works. Measures should be outlined within a protected/priority species Precautionary Working Method Statement (PWMS) to ensure no harm or injury to brown hare, if present on site.

Reptiles

5.26 It is recommended that a Precautionary Working Method Statement (PWMS) for reptiles is produced and implemented during the site clearance and development works, due to the risk of reptiles using the site for commuting and/or foraging. The PWMS will set out the working methods that will need to be adhered to avoid impacts on any reptiles that may be encountered during the works. The measures are similar to those required for common amphibians, as above.

Invertebrates

5.27 A 'bug hotel' could be mounted near to new or existing woodland or scrub planting to mitigate for any habitat losses. Any deadwood and brash that may arise from tree pruning and scrub clearance could also be retained to create habitat piles within the wider site.

Biodiversity Enhancement

5.28 Under Planning Policy Wales (2021), developments should aim to minimise impacts on biodiversity and provide a net benefit for biodiversity. This is clarified by the Welsh Government's Chief Planner guidance to heads of planning in local authorities[9].

5.29 Landscape planting should aim to utilise native species appropriate to the local area and should maximise berry-bearing and nectar and pollen rich species. These can provide a valuable foraging resource for a range of pollinators and other invertebrates, which in turn benefits wildlife such as bats, small mammals and many bird species. Native wildflower seed mixes, suitable to the soil type at the application site, are available commercially and could be planted on site. This would also be beneficial to invertebrates such as bees and butterflies. Planting should focus on enhancing the small area of modified neutral grassland that is being retained in current proposals.

5.30 A bat box and/or a bird box could be incorporated onto retained trees to provide roosting opportunities for bat species and nesting opportunities for birds. Nest boxes should be appropriate to species that occur locally. Bat and bird boxes should be located at an appropriate height and aspect, with suitable lighting levels and close to vegetation.

[9] https://www.gov.wales/sites/default/files/publications/2019-11/securing-biodiversity-enhancements.pdf

Appendix A

Target Notes

Target Notes Report
Survey 10163-1

Target Note TN01

Epilobium montanum	Broad-leaved Willowherb	F
Euphorbia helioscopia	Sun Spurge	O
Geum urbanum	Wood Avens	O
Agrostis stolonifera	Creeping Bent	R
Dactylis glomerata	Cock's-foot	R
Hedera helix	Ivy	R
Holcus lanatus	Yorkshire-fog	R
Jacobaea vulgaris	Common Ragwort	R
Prunella vulgaris	Selfheal	R
Senecio vulgaris	Groundsel	R
Sonchus asper	Prickly Sow-thistle	R
Urtica dioica	Nettle	R

Target Note TN02

Holcus lanatus	Yorkshire-fog	A
Arrhenatherum elatius	False Oat-grass	O
Alchemilla species	Lady's-mantle species	R
Cirsium arvense	Creeping Thistle	R
Cirsium vulgare	Spear Thistle	R
Epilobium sp.	Willowherb species	R
Galium aparine	Cleavers	R
Geranium molle	Dove's-foot Cranesbill	R
Geum urbanum	Wood Avens	R
Heracleum sphondylium	Hogweed	R
Jacobaea vulgaris	Common Ragwort	R
Lysimachia arvensis	Scarlet Pimpernel	R
Medicago lupulina	Black Medick	R
Moss sp.	Moss species	R
Plantago lanceolata	Ribwort Plantain	R
Prunella vulgaris	Selfheal	R
Quercus sp.	Oak species	R
Ranunculus repens	Creeping Buttercup	R
Rosa sp.	Rose species	R
Rubus fruticosus agg.	Bramble	R
Taraxacum officinale agg.	Dandelion	R
Trifolium repens	White Clover	R
Urtica dioica	Nettle	R

Target Note TN03

Urtica dioica	Nettle	A
Galium aparine	Cleavers	O
Rubus fruticosus agg.	Bramble	O
Alliaria petiolata	Garlic Mustard	R
Arctium minus	Lesser Burdock	R
Arum italicum	Italian Lords-and-Ladies	R
Corylus avellana	Hazel	R
Crataegus monogyna	Hawthorn	R
Digitalis purpurea	Foxglove	R
Dryopteris filix-mas	Male-fern	R

KEY - D = Dominant, A = Abundant, F = Frequent, O = Occasional, R =

Epilobium sp.	Willowherb species	R
Fraxinus excelsior	Ash	R
Glechoma hederacea	Ground-ivy	R
Heracleum sphondylium	Hogweed	R
Moss sp.	Moss species	R
Pteridium aquilinum	Bracken	R
Rosa sp.	Rose species	R
Salix species	Willow species	R
Sambucus nigra	Elder	R

Target Note TN04

Crepis capillaris	Smooth Hawk's-beard	R
Moss sp.	Moss species	R
Plantago major	Greater Plantain	R
Poa annua	Annual Meadow-grass	R
Polygonum aviculare	Knotgrass	R
Taraxacum officinale agg.	Dandelion	R
Trifolium repens	White Clover	R

Target Note TN05

Crataegus monogyna	Hawthorn	F
Corylus avellana	Hazel	O
Hedera helix	Ivy	O
Ilex aquifolium	Holly	O
Prunus spinosa	Blackthorn	O
Rubus fruticosus agg.	Bramble	O
Sambucus nigra	Elder	O
Urtica dioica	Nettle	O
Acer campestre	Field Maple	R
Acer pseudoplatanus	Sycamore	R
Cornus sanguinea	Dogwood	R
Fraxinus excelsior	Ash	R
Juglans regia	Walnut	R
Mercurialis perennis	Dog's Mercury	R
Quercus robur	English Oak	R
Rosa canina agg.	Dog Rose	R

Target Note TN06

[redacted]

Target Note TN07

Hedera helix	Ivy	A
Rubus fruticosus agg.	Bramble	O
Salix species	Willow species	O
Acer pseudoplatanus	Sycamore	R
Alnus glutinosa	Alder	R
Bergenia cordifolia		R
Buddleja davidii	Buddleia	R
Buxus sempervirens	Box	R
Carex pendula	Pendulous Sedge	R
Clematis vitalba	Traveller's-joy	R
Cornus sanguinea	Dogwood	R
Corylus avellana	Hazel	R
Crataegus monogyna	Hawthorn	R
Crocosmia x crocosmiiflora	Montbretia	R

KEY - D = Dominant, A = Abundant, F = Frequent, O = Occasional, R =

Cupressus × leylandii	Leyland Cypress	R
Dryopteris filix-mas	Male-fern	R
Epilobium sp.	Willowherb species	R
Eucalyptus sp.		R
Fagus sylvatica	Beech	R
Lonicera periclymenum	Honeysuckle	R
Lonicera sp.	Honeysuckle species	R
Moss sp.	Moss species	R
Rosa canina agg.	Dog Rose	R
Rubus idaeus	Raspberry	R
Salix caprea	Goat Willow	R
Syringa vulgaris	Lilac	R
Taxus baccata	Yew	R
Urtica dioica	Nettle	R

Target Note TN08

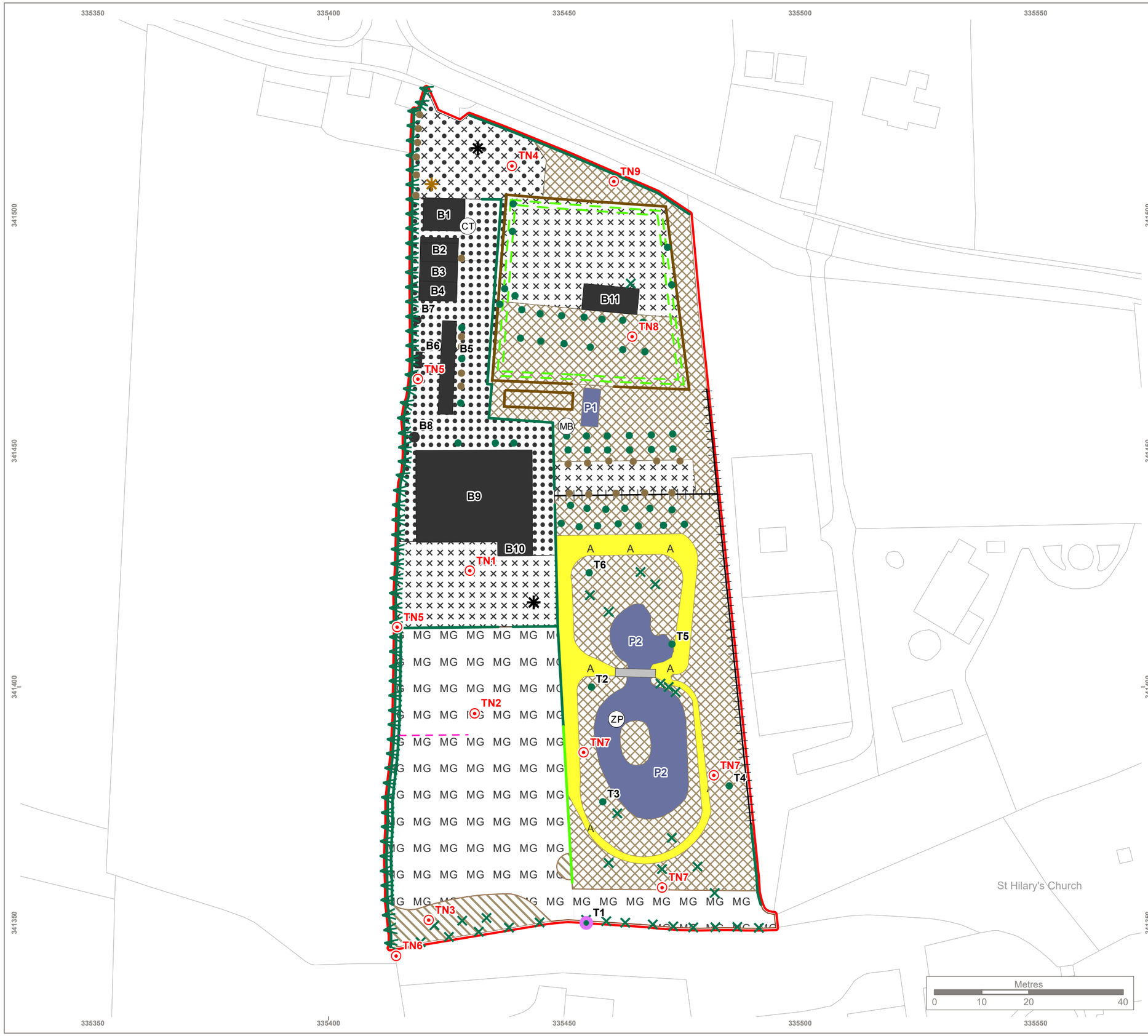
Bergenia cordifolia		F
Betula sp.	Birch species	F
Epilobium sp.	Willowherb species	R
Geum urbanum	Wood Avens	R
Quercus sp.	Oak species	R
Ribes sanguineum	Flowering Currant	R
Rubus fruticosus agg.	Bramble	R

Target Note TN09

Hedera helix	Ivy	O
Acer pseudoplatanus	Sycamore	R
Cirsium arvense	Creeping Thistle	R
Juniperus communis	Juniper	R
Quercus sp.	Oak species	R
Rubus fruticosus agg.	Bramble	R
Taxus baccata	Yew	R
Urtica dioica	Nettle	R

Drawings

Phase 1 Habitat Survey Drawing G10140.007

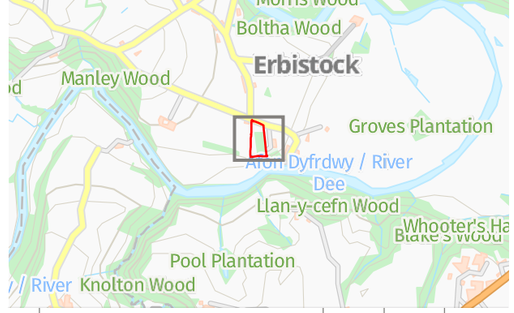


KEY

- Site boundary
- Target note
- Cotoneaster (CT)
- Montbretia (MB)
- New Zealand pygmyweed (ZP)
- Scattered scrub
- Scattered broad-leaved tree
- Tree requiring further assessment for bat roost suitability
- Scattered introduced shrub
- Log pile/brash
- Bonfire remains
- Species-poor intact hedge
- Conifer hedge
- Box hedge
- Native species-rich hedge and trees
- Fence
- Wall
- Mammal tracks
- Species-poor modified neutral grassland (MG, MC)
- Tall ruderal
- Standing water
- Amenity grassland (A)
- Dense/continuous ephemeral/short perennial
- Bare ground with ephemeral/short perennial
- Introduced shrub
- Building
- Bare ground
- Hardstanding

Note:
The locations of habitats and habitat features are indicative.

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Rev	Description	Drawn	Approved	Date

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Project: The Market House

Title: Phase 1 Habitat Survey

Drawing Number: G10163.007

Drawn	Checked	Approved	Scale	Date
OH	##	AE	1:800 @ A3	01/11/2023

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