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The evaluation and assessment provided in this report is specific to the iteration of the proposal detailed in *Section 1*. It would no longer be valid should the layout be changed in anyway, should the report be used for a different proposal at the same site or should it be used a maximum of 12 months after the date of issue.

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Figure 1 – Extended Phase 1 Habitat Survey

1 INTRODUCTION

1.1 Project Background

1.1.1 Marches Ecology was commissioned by Wrexham County Borough Council (WCBC) to undertake a Preliminary Ecological Appraisal of two parcels of land off Derwent Crescent, Wrexham (approximate OS Grid Refs. SJ 337 515 and SJ 338 515). This Preliminary Ecological Appraisal (PEA) comprised an Extended Phase 1 Habitat Survey. This report is provided as supporting information to a planning application for a small residential housing development.

1.1.2 This report has three key aims:

- to provide an initial appraisal of the ecological value of the site and local ecological resource and thereby identify ecological constraints relevant to the proposal;
- to identify further surveys that may be required; and
- to identify potential mitigation/ compensation measures where possible along with opportunities to deliver ecological enhancement.

The structure of this Preliminary Ecological Appraisal Report (PEAR) is based on the guidance provided in the Chartered Institute of Ecology and Environmental Management (CIEEM) documents CIEEM (2017a) and CIEEM (2017b).

1.2 Report Author

1.2.1 This report was produced by Tom Knight of Marches Ecology. Tom Knight is an ecologist with over twenty-one years of consultancy experience and has undertaken Extended Phase 1 Habitat Surveys on a wide range of sites. His relevant academic qualifications and professional memberships are as follows:

- Chartered Environmentalist (Society for the Environment).
- Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).
- PgDip Conservation Management.
- BSc (Hons) Environmental Studies.
- C&G Biological Surveying.

1.3 Site Description and Context

1.3.1 The survey site is divided into two small parcels of land, henceforth referred to as Site A (westernmost) and Site B (easternmost).

1.3.2 Site A extends to approximately 0.08 acres. It largely comprises an area of hard-standing with some amenity grassland and ornamental trees. The southern and western boundaries are formed by walls and or fences.

1.3.3 Site B extends to approximately 0.15 acres. It comprises an area of hard-standing with some garages.

1.3.4 The survey site is located in Acton, just to the north of the centre of Wrexham. Site A is directly bordered to the west and south by residential housing. To the north it is bordered by Acton Park Way and the east by Derwent Crescent, on the opposite side of which there is further residential housing. Site B is directly bordered to the west, east and south by

residential housing. To the north it is bordered by Derwent Crescent, on the opposite side of which there is further residential housing.

1.4 The Development

- 1.4.1 No plans showing the proposed development or other information have been provided. It is understood that a 5-bedroom, 2-storey dormer property is being considered for Site A. Three dormer bungalows are being considered for Site B.

1.5 Planning Policy

Introduction

- 1.5.1 This section provides a brief summary of key national and local planning policies. It is not a comprehensive review of all such planning policy, the intention being to identify those considered to be of most relevance to ecology and provide context for the proposal.

Wales

Planning Policy Wales

- 1.5.2 Planning Policy Wales (PPW) sets out national land use planning policies (Welsh Government 2021). Chapter 6 is of particular relevance (though it is complementary to other themes within the document) and is entitled 'Distinctive and Natural Places'.

With specific reference to development proposal the following key statement is made:

'Development plan strategies, policies and development proposals must consider the need to:

- support the conservation of biodiversity, in particular the conservation of wildlife and habitats;*
- ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;*
- ensure statutorily and non-statutorily designated sites are properly protected and managed;*
- safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil, including peat; and*
- secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks'.*

Furthermore, it states that:

'It is important that biodiversity and resilience considerations are taken into account at an early stage in both development plan preparation and when proposing or considering development proposals'.

'All reasonable steps must be taken to maintain and enhance biodiversity and promote the resilience of ecosystems and these should be balanced with the wider economic and social needs of business and local communities. Where adverse effects on the environment cannot be avoided or mitigated, it will be necessary to refuse planning permission'.

Use of the mitigation hierarchy is emphasised:

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

- 1.5.3 Areas that Chapter 6 covers include biodiversity and resilience of ecosystems duty, designated sites, maintaining and enhancing biodiversity, protected species, specific habitats/ areas, sustainable drainage systems (SuDS), green infrastructure, air quality, lighting, and de-risking development.

Technical Advice Note 5

- 1.5.4 PPW is supplemented by a series of Technical Advice Notes (TAN). TAN 5 covers 'Nature Conservation and Planning' (Welsh Government 2009). It provides advice to local planning authorities on how the land use planning system should contribute to protecting and enhancing biodiversity and geological conservation. It includes chapters covering the key principles of planning for nature conservation; the preparation and review of development plans; nature conservation in development control procedures; the conservation of internationally and nationally designated sites, habitats and local sites; and the conservation of protected and priority habitats and species.

- 1.5.5 In paragraph 2.4 it states that *'...when deciding planning applications that may affect nature conservation, local planning authorities should:*
- pay particular attention to the principles of sustainable development, including respect for environmental limits, applying the precautionary principle, using scientific knowledge to aid decision making and taking account of the full range of costs and benefits in a long term perspective (PPW 2.2.1¹);*
 - contribute to the protection and improvement of the environment, so as to improve the quality of life and protect local and global ecosystems, seeking to avoid irreversible harmful effects on the natural environment (PPW 2.3.2);*
 - promote the conservation and enhancement of statutorily designated areas and undeveloped coast (PPW 2.3.2);*
 - ensure that appropriate weight is attached to designated sites of international, national and local importance (PPW 5.3.2);*
 - protect wildlife and natural features in the wider environment, with appropriate weight attached to priority habitats and species in Biodiversity Action Plans (PPW 5.2);*
 - ensure that all material considerations are taken into account and decisions are informed by adequate information about the potential effects of development on nature conservation (PPW paragraphs 5.5.1 and 5.5.2);*
 - ensure that the range and population of protected species is sustained (PPW 5.2.3, 5.5.11 and 5.5.12);*
 - adopt a step-wise approach to avoid harm to nature conservation, minimise unavoidable harm by mitigation measures, offset residual harm by compensation measures and look for new opportunities to enhance nature conservation; where there may be significant harmful effects local planning authorities will need to be satisfied that any reasonable alternative sites that would result in less or no harm have been fully considered (PPW 5.2.2, 5.2.7 and 5.5.2).*

¹ References to the relevant part of PPW.

Wrexham

- 1.5.6 Local planning authorities will consider biodiversity/ nature conservation issues in accordance with adopted policies and plans. The following are considered of particular relevance to the proposal.

Wrexham Unitary Development Plan

- 1.5.7 The Wrexham Unitary Development Plan (UDP) was adopted in February 2005. It will be replaced by the Local Development Plan. The UDP '*...provides a framework for local decision making and the reconciliation of development and conservation interests...*'.

Relevant strategic and general development policies include:

- *Policy PS2. Development must not materially detrimentally affect countryside, landscape/townscape character, open space, or the quality of the natural environment.*
- *Policy PS11. Encouragement will be given to proposals which improve the biodiversity value of sites and to the establishment of local nature reserves where the nature conservation and landscape interest of the land will be protected and enhanced.*
- *Policy GDP1f). Ensure the safety and amenity of the public and safeguard the environment from the adverse effects of pollution of water, land or air, hazards from industry and quarrying, and associated noise, odour or vibration arising from development.*
- *Policy GDP1h). Safeguard sites and areas of nature conservation and wildlife interest, and to provide new habitats where there is an unavoidable loss of existing habitats and areas of wildlife interest.*

Section 5 of the UDP concerns 'Environment and Conservation'. The relevant policies listed are as follows:

- *Policy EC4. Development proposals should provide for the conservation and management of hedgerows, trees, orchards, woodland, wildlife and other natural landscape and water features, and include new planting in order to enhance the character of the landscape and townscape. Development which results in the loss or significant damage to valuable trees, important hedgerows or ancient woodland sites will not be permitted.*
- *Policy EC6. Development either within or close to sites of biodiversity interest will only be permitted where it can be clearly demonstrated that the need for the development outweighs the need to safeguard the intrinsic nature conservation value of the site. Where such development is permitted, damage should be kept to a minimum, and compensatory measures should be provided. Measures to improve the biodiversity value of sites and enhance their natural conservation interest and landscape quality including the establishment of local nature reserves, will be supported.*
- *Policy EC13. Development which would result in an unacceptable adverse impact on the water environment due to additional surface water run-off will not be permitted.*
- *Policy EC14. Development which would have an unacceptable adverse impact upon the capacity, flow, quality or availability of controlled waters and associated land will not be permitted.*

Local Planning Guidance

- 1.5.8 Wrexham County Borough Council (WCBC) has produced a series of supplementary planning guidance documents which set out detailed advice on the way in which Development Plan policies will be applied. Supplementary planning guidance is a material consideration in the determination of planning applications for development. The following Local Planning Guidance (LPG) note is of particular relevance:

- LPG 32 Biodiversity and Development. Adopted March 2011. Provides further advice in relation to UDP policies PS2, PS11, EC4 and EC6. Of particular importance it details the requirements for ecological survey and reporting.

1.6 Legislation

Introduction

- 1.6.1 This sub-section provides a brief summary of key legislation relevant to ecology/ nature conservation and the development. It should not be considered a comprehensive review and is not meant to be so. It is provided here for information only and is not intended to replace specialised legal advice. It does not replace the text of the legislation but summarises the salient points. Further information on how this legislation affects the protection of particular species is provided in *Appendix 1*.
- 1.6.2 The UK exited the EU on 31st January 2020 followed by a transition period until the end of that year during which EU legislation and policy was followed². *'EU legislation which applied directly or indirectly to the UK before 11.00 pm on 31st December 2020 has been retained in UK law as a form of domestic legislation known as 'retained EU legislation'. This is set out in Sections 2 and 3 of the European Union (Withdrawal) Act 2018'*³.

The Conservation of Habitats and Species Regulations 2017 (The Regulations)

- 1.6.3 Transposes the *EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora 1992* into UK law. The Regulations provide for the protection of sites in the UK that support habitats and species of European importance (e.g. Special Protection Areas (SPAs) and Special Areas of Conservation (SACs)). The Regulations also provide full protection for certain species which are frequently referred to as European Protected Species (EPS). EPS of potential relevance to the site include bats and Great Crested Newt (*Triturus cristatus*).

The Wildlife and Countryside Act 1981, as amended (WCA)

- 1.6.4 The WCA strengthened protection for nature conservation sites of at least national importance and provides varying levels of protection for a number of species within the UK. This protection may include prohibition of some or all of: killing, injuring, disturbing, taking, sale/barter or possession of species and also protection of breeding/ sheltering places. The following species/ species groups that receive some level of protection under the WCA and are of potential relevance to the proposal include bats, Great Crested Newts and birds. The WCA also prohibits the spread of certain non-native invasive species.

² <https://cieem.net/referencing-environmental-eu-legislation-post-brexit/>

³ <https://www.legislation.gov.uk/eu-legislation-and-uk-law#:~:text=The%20UK%20is%20no%20longer,on%20legislation.gov.uk>

The Countryside and Rights of Way Act 2000 (The CRoW Act)

- 1.6.5 The CRoW Act includes legislation in relation to the Biodiversity Action Plan; more stringent management, protection and consenting measures for SSSIs; greater penalties for wildlife crime; and greater protection for species listed in the WCA. Some of this legislation was superseded by the NERC Act.

The Natural Environment and Rural Communities Act 2006 (The NERC Act)

- 1.6.6 *Sections 40 to 42 of the NERC Act replace Section 74 of the CRoW Act. Section 40 of the NERC Act extends to all public authorities (including local planning authorities) the existing Section 74 duty to have regard to biodiversity as far as is consistent with the proper exercise of their functions. In addition, Sections 41 (England) and 42 (Wales) provide a list of species and habitats of principal importance for conservation of biological diversity. Government has a statutory duty to promote steps “to further the conservation” of habitats and species listed in Sections 41 and 42.*

Environment (Wales) Act 2016

- 1.6.7 The Environment Act enhances and replaces the current NERC Act (*Section 40*) duty to require all public authorities, when carrying out their functions in Wales, to seek to ‘maintain and enhance biodiversity’ where it is within the proper exercise of their functions. In doing so, public authorities must also seek to ‘promote the resilience of ecosystems’. *Section 7* of the Environment Act provides a list of the living organisms and habitats of principal importance for the purpose of maintaining and enhancing biodiversity in Wales. This list replaces that previously provided in *Section 42* of the NERC Act.

The Protection of Badgers Act 1992 (The Badgers Act)

- 1.6.8 The Badgers Act provides for the protection of Badgers and their setts. This legal protection is provided for welfare rather than the conservation value of the species.

2 METHODOLOGY

2.1 Field Survey

Extended Phase 1 Habitat Survey

2.1.1 The Extended Phase 1 Habitat Survey was carried out on 15th July 2021 by Tom Knight of Marches Ecology. The Extended Phase 1 Habitat plan is provided as *Figure 1*. The survey focussed on land within the site boundary (the 'survey site', refer to *Figure 1*). The survey site is divided into Site A and Site B. Immediately adjacent habitat was considered where deemed appropriate and viewed from the survey site boundary where possible. The weather during the survey was 90% white cloud cover with a light breeze.

2.1.2 Phase 1 Habitat Survey involves identifying areas or features of particular interest either in terms of their botanical interest, and/or habitat potential for protected or other notable species that are likely to occur in the region and within the survey site. The Phase 1 Habitat Survey has been adapted in this instance as an 'extended' Phase 1 Habitat Survey, where more information has been obtained to inform site assessment. The methods used centre on the Phase 1 Habitat Survey approach (JNCC 2010) as extended for use in Environmental Impact Assessment (Institute of Environmental Assessment 1995). Extended Phase 1 Habitat Survey involves the following elements:

- Habitat mapping using a set of standard colour codes to indicate habitat types on a Phase 1 Habitat map.
- Description of features of ecological or nature conservation interest in notes relating to numbered locations on the Phase 1 Habitat map, called target notes.

2.1.3 In addition to the habitat map and target notes, a plant species list was compiled (provided in *Table 1, Section 8*). Plant nomenclature in this report follows Stace (2010). July is within the accepted survey period for Extended Phase 1 Habitat Surveys. It is unrealistic to suppose that walk-through surveys can generate completely exhaustive species lists at any time of year. It is considered that the list in this report indicates the character of the vegetation and the ecological value of the area inspected.

2.1.4 Further information describing the assessment conducted during the Extended Phase 1 Habitat Survey for particular species of relevance to the survey site is provided briefly below:

- Bats. The potential value of the habitat for foraging/ commuting and roosting was assessed in accordance with *Table 4.1* provided in Collins (2016).
- Great Crested Newts. The quality of terrestrial and aquatic habitat for Great Crested Newts was assessed. The assessment of aquatic habitat was based on the Habitat Suitability Index (Oldham, *et al.* 2000).
- Birds. The habitat within the survey site was assessed for its potential value for breeding birds based on guidance provided in e.g. JNCC (2004).

2.2 Survey Limitations

2.2.1 The following may be considered survey limitations:

- It was not possible to view the eastern elevation of the garages at *Target Note 5* (Site B) and the western elevation of the garages at *Target Note 6* (Site B). There was no internal access to these garages.
- No access to areas outside the survey site boundary was provided.

None of the survey limitations listed above significantly affected the findings of the survey and therefore the conclusions and prescribed mitigation measures. The survey was conducted in accordance with a Covid-19 Risk Assessment. This did not give rise to any limitations at this site.

2.3 Evaluation

- 2.3.1 The ecological importance (value) of habitats and/or species is often assessed according to a number of widely used criteria of which perhaps the most frequently used are naturalness, extent, rarity, and diversity. For the purpose of this report the ecological importance of the habitat and species present on the site has been determined using the approach detailed in CIEEM (2018). Geographical context is used as a frame of reference for identifying the importance of ecological features. The frame of reference has the following categories: International/ European - National - Regional - Metropolitan/County/Vice-county/ other local-authority wide area - Local. Within this report Local is defined as relating to district or parish; less than local refers to features of value at a Site level.
- 2.3.2 Broadly speaking habitat importance should be determined by identifying designated sites, 'priority habitats' (as defined in CIEEM, 2017a) or by using published, ideally local, site selection criteria. The ecological importance of a species considers its distribution and legal or conservation status, the latter is mostly due to inherent rarity. 'Priority species' are also defined in CIEEM (2017a) and include legally protected species as well as those identified on various conservation lists.

3 BASELINE ECOLOGICAL CONDITIONS

3.1 Statutory Protected Sites

3.1.1 There are no statutory designated sites within 1 km of the survey site. The closest such site is Gatewen Marsh Site of Special Scientific Interest (SSSI). The closest part of this designated site is located approximately 1.68 km to the southwest at the nearest part of its boundary.

3.1.2 Information has not been collected on non-statutory protected sites.

3.2 Habitats and Flora

Introduction

3.2.1 The Extended Phase 1 Habitat map is provided as *Figure 1*. The Target Notes (numbered 1 to 4, Site A, and 1 to 6, Site B) are provided in *Section 6* and shown on *Figure 1*.

Site A

3.2.2 Most of Site A is characterised by hard-standing currently used as a car park. Ephemeral/ short perennial vegetation is scattered around the edge of the hard-standing, particularly along the southern edge where there is also a small amount of *Rubus fruticosus* agg. (Bramble).

3.2.3 There is a small area of amenity grassland (that is part of a larger resource) towards the northeast corner (*Target Note 2*). This amenity grassland is dominated by *Lolium perenne* (Perennial Rye-grass) with abundant *Trifolium repens* (White Clover), frequent *Taraxacum officinale* (Dandelion), locally frequent *Festuca rubra* (Red Fescue), occasional *Agrostis capillaris* (Common Bent) and *Ranunculus repens* (Creeping Buttercup).

3.2.4 There are five young/ semi-mature trees located on the north-eastern boundary of the survey site (*Target Note 3*) and just outside the survey site (*Target Note 4/ 4a/ 4b*). These trees are further described below under 'bats'.



Part of Site A with the amenity grassland (*Target Note 2*) on the right.



The southern end of Site A.



The trees at *Target Notes 3 and 4/ 4a/ 4b.*

Site B

- 3.2.5 Most of Site B is characterised by hard-standing and two rows of garages. Ephemeral/ short perennial vegetation is scattered around the edges of the hard-standing. This included a small amount of *Vulpia myuros* (Rat's-tail Fescue) at *Target Note 1*. A *Cotoneaster* sp. seedling was recorded at *Target Note 3*. The garages at *Target Notes 5 and 6* are further described below under 'bats'.
- 3.2.6 There is a young *Acer pseudoplatanus* (Sycamore) tree located in a short section of hedge characterised by ornamental shrubs in the southwest corner (*Target Note 2*). A cluster of trees is also located at *Target Note 4*, just outside the survey site. These trees are further described below under 'bats'.



Part of Site B and the garages at *Target Note 5*.



View towards the garages at *Target Note 6*.



The young tree at *Target Note 2*.

3.3 Species/ Species Groups

Bats

Site A

- 3.3.1 There are two trees located within the survey site, on the boundary (*Target Note 3*). These trees are a young *Sorbus aucuparia* (Rowan) tree with an approximate diameter at breast height (dbh) of 0.15 m and a young *Salix* sp. (Willow) tree with an approximate dbh of 0.2 m. The Rowan does not contain any features of potential value for roosting bats. The Willow contains some small rotholes that do not extend very far and some fused minor limbs. It is not of any value for roosting bats.
- 3.3.2 There are three further Willow trees in the same group, located just outside the survey site boundary (*Target Notes 4/ 4a/ 4b*). The tree at *Target Note 4a* has an approximate dbh of 0.3 m with the main stem fused to a second stem. It contains four small splits in minor limbs, a small split in the main stem and some rot in minor limbs. It is of limited potential value for roosting bats at most.



One of the splits recorded in a limb of the tree at *Target Note 4a*.

- 3.3.3 The tree at *Target Note 4b* has an approximate dbh of 0.25 m. It contains a small split in a minor limb at 5 m height although it was not possible to view this in detail. It is of limited potential value for roosting bats at most but more likely to be of no value. The third tree in the group contains a small number of rotholes but none appear to be very big or extensive. No features of potential value for roosting bats were visible.



The trees at *Target Notes 4a* (right) and *4b* (left).

- 3.3.4 The *Fraxinus excelsior* (Ash) tree located just outside the survey site at *Target Note 1* does not appear to contain any features of potential value for roosting bats.
- 3.3.5 The hard-standing that characterises much of Site A is likely to be of negligible potential value for foraging/ commuting bats. The cluster of trees near the northeast corner may be of some value but are quite isolated. The value of Site A for bats may be limited by adjacent street lighting.

Site B

- 3.3.6 There is a multi-stemmed young/ semi-mature Sycamore tree at *Target Note 2*. It has five main stems ranging in size from 0.07 m to 0.15 m dbh. As it was located in dense ornamental shrubs it was not possible to view most of the main trunks but they are likely to be too small to contain any features of potential value for roosting bats. There is a Rowan sapling in the same hedge.
- 3.3.7 The trees at *Target Note 4* located just outside the survey site boundary do not contain any features of potential value for roosting bats.
- 3.3.8 There is a row of single garages (units 10-15) at *Target Note 5*. They are brick-built with flat-roofs covered in mineral roofing felt. It was not possible to access the eastern elevation and there was no internal access. It does not look like there would be any kind of roof space. The mortar work is generally in good condition and the roof is mostly well sealed. There is a 2 cm by 3 cm gap between the wall and roof of units 10 and 11. This was occupied by a Wasp nest. There is a similar gap between units 12 and 13. There are also some gaps around the fascia but these are generally too small for bats and are covered in cobwebs. On the southern elevation there is a 1 cm gap between the roof timber and the fascia. The extent of this gap is unknown. There may be a gap beneath the fascia on the eastern elevation.



Garage Unit 10, *Target Note 5*.



Typical gap between wall (of unit 10) and roof (of unit 11), *Target Note 5*.

This one was occupied by wasps.

- 3.3.9 The row of single garages (units 16-20) at *Target Note 6* is similar to that at *Target Note 5*. It was not possible to access the western elevation and there was no internal access. The southern end has a 1 cm gap between the roof timber and the fascia. It is well used by slugs and covered with cobwebs. This building contains similar minor gaps around the fascia and door panels as that at *Target Note 5*.



Gap between roof timber and wall, *Target Note 6*. Covered in cobwebs.



Gap between timber and wall, Target Note 6. Covered in cobwebs.

- 3.3.10 These garages (*Target Notes 5 and 6*) are considered to be of negligible potential value for roosting bats.
- 3.3.11 The hard-standing that characterises much of Site B is likely to be of negligible potential value for foraging/ commuting bats. The value of Site B for bats may be limited by adjacent street lighting.

Great Crested Newts

- 3.3.12 There is no aquatic habitat within the survey site.
- 3.3.13 An initial review of the OS map 1:25, 000 scale and relevant internet-based mapping including aerial photography indicates that there are no waterbodies within approximately 250 m of the survey site (excluding ditches). This area includes a large number of private gardens which could contain one or more waterbodies.
- 3.3.14 There appears to be one waterbody within 250-500 m of the survey site: a pond at Price's Lane allotments, approximately 360 m southwest of Site A. It is located on the opposite side of the A5152 road.
- 3.3.15 The potential presence of Great Crested Newts in terrestrial habitat is governed more by the proximity of a suitable breeding waterbody than by the quality of the terrestrial habitat. Given the apparent absence of waterbodies within 250 m of the survey site and the relative isolation of the survey site (due to roads and built development), it is considered unlikely that this species might access the survey site. This species will not be considered further in this report.

Birds

- 3.3.16 Seven species of bird were recorded during the Extended Phase 1 Habitat Survey either within the survey site or flying over it. The House Sparrow (*Passer domesticus*), Starling (*Sturnus vulgaris*) and Swift (*Apus apus*) are priority species⁴. The former species might find limited nesting opportunities within the garages on Site B, though no such evidence was recorded. The latter two species would not find any nesting opportunities within the survey site. The survey site provides very limited nesting opportunities for species of bird associated with the garages and young trees/ shrubs.

Other Species

- 3.3.17 The habitat within the survey site is not of particular value for the Hedgehog (*Erinaceus europaeus*) though the small area of amenity grassland in Site A may be used for foraging. However, several Hedgehog droppings (including one recent) were recorded at *Target Note 1*, Site B. The Hedgehog appears to have been attracted to food put out for birds.

⁴ As defined in CIEEM (2017a).

4 EVALUATION, ASSESSMENT AND RECOMMENDATIONS

4.1 Introduction

4.1.1 Brief details regarding the proposal are provided in *Section 1.4*. An assessment of ecological issues based on the information provided is detailed below and considers:

- potential ecological constraints relevant to the proposal;
- further survey requirements; and
- potential mitigation/ compensation measures along with opportunities for ecological enhancement.

These are dealt with in turn for habitats and flora, and specific species groups in the section below. Potential impacts have been considered with reference to the plan provided only. This assessment considers the proposed development site and immediately surrounding area.

4.2 Evaluation, Assessment and Recommendations

Designated Sites

4.2.1 No statutory designated sites would be directly or indirectly impacted by the proposed development.

Habitat

4.2.2 The survey site includes the following habitat resources:

- Amenity grassland;
- Ephemeral/ short perennial vegetation;
- Young trees;
- Native and ornamental shrubs;
- Hard-standing; and
- Buildings.

4.2.3 Due to the size, quality and geographical location of the habitat resources listed above they are considered to be of no more than site value⁵.

4.2.4 No further survey of the habitat within the survey site is currently considered necessary. The proposal is likely to result in the permanent loss of all of the existing vegetation/ habitat. The loss of this habitat would not result in any significant impacts.

4.2.5 It is assumed that the trees at *Target Note 3*, Site A may be felled or be the subject of some pruning. It is further assumed that the trees at *Target Notes 4/ 4a/ 4b*, Site A would be retained unaffected. Prior to the start of any preparatory or construction work, temporary tree protection should be installed around the trees at *Target Notes 4/ 4a/ 4b*, Site A. These protection measures should include exclusion barriers and signage and be in accordance with 'BS 5837:2012 Trees in Relation to Design, Demolition and Construction. Recommendations' and Local Planning Guidance Note 17: Trees and Development (WCBC 2012). The fence will be retained throughout the construction period. No access/ storage of materials/ construction work, etc should be allowed beyond this fence.

⁵ In accordance with CIEEM (2018).

- 4.2.6 Soft landscaping around the proposed buildings presents an opportunity to introduce planting of benefit to both wildlife and people. A small number of native trees/ shrubs of value for wildlife could be planted. These could include *Betula pendula* (Silver Birch), *Sorbus aucuparia* (Rowan), *Prunus avium* (Wild Cherry), *Corylus avellana* (Hazel), *Crataegus monogyna* (Hawthorn), *Ilex aquifolium* (Holly) and/ or *Acer campestre* (Field-maple). All shrubs/ trees used should be of ideally locally native provenance but as a minimum certified British native origin.
- 4.2.7 General best practice measures should be implemented during the construction phase to avoid any indirect impacts (e.g., dust, diffuse pollution, etc) on adjacent habitat. The general advice contained in the Guidance for Pollution Prevention (GPP) leaflets produced by SEPA, EA and the Environment and Heritage Service (Northern Ireland) will be adhered to, particularly the following:
- PPG1: Understanding Your Environmental Responsibilities - Good Environmental Practices.
 - PPG6: Working at Construction and Demolition Sites.
- 4.2.8 Assuming the appropriate installation and maintenance of the temporary protective fencing along with the adoption of best practice measures, no significant impact is anticipated on valued habitat resources located close to the proposed development site.

Flora

- 4.2.9 One notable plant was recorded from the survey site: Rat's-tail Fescue (*Target Note 1*, Site B). This grass is listed as Locally Scarce⁶ in Williams (2014)⁷. It is listed as being of Least Concern in Dines (2008). The author of this report has recorded this grass from several sites in Wrexham (county) and it is likely to be present elsewhere within Wrexham (town). It is likely to be lost from the site due to the proposed development. This is not considered to be a significant impact.
- 4.2.10 It is illegal to plant or otherwise cause to grow in the wild any plant listed in *Schedule 9* to the *Wildlife and Countryside Act 1981* (as amended). The *Schedule 9* list of animal and plant species has been amended by the *Wildlife and Countryside Act 1981 (Variation of Schedule 9)(England and Wales) Order 2010*⁸. *Section 14 (1)* covers spreading the species or transferring polluted ground material from one area to another.
- 4.2.11 The *Invasive Alien Species (Enforcement and Permitting) Order 2019* relates to the prevention and management of the introduction and spread of non-native species and the associated licensing/ permitting system.
- 4.2.12 One species of plant listed on *Schedule 9* was recorded from the survey site: Cotoneaster. A single Cotoneaster seedling was recorded at *Target Note 3*, Site B. Appropriate control measures should be implemented prior to the commencement of construction in order to avoid spreading this plant to any other site.

⁶ Found in 4-15 'Wells' sites in Denbighshire.

⁷ It is understood that this list is currently being reviewed.

⁸ <http://www.nonnativespecies.org/index.cfm?pageid=67>

Fauna

Bats

- 4.2.13 Most of the habitat within the proposed development site is considered to be of negligible potential value for foraging/ commuting bats. Based on the small-scale of the proposal it is considered unlikely that the loss of this habitat would result in a significant impact on foraging bats.
- 4.2.14 The Willow trees at *Target Notes 4a and 4b*, Site A are considered to be of limited potential value for roosting bats (at most). It is assumed that these trees would be unaffected by the proposed development and would be protected during the construction phase by temporary fencing. If it becomes necessary to fell these trees then further bat survey would be required. None of the other trees within the survey site contain features of potential value for roosting bats.
- 4.2.15 The garages at *Target Notes 5 and 6*, Site B, contain a small number of minor features that could be of potential value for roosting bats. However, many are too small for bats or are otherwise covered in cobwebs. Whilst they do contain some minor features of potential value, they are surrounded by habitat that is not of any particular value for foraging/ commuting bats. The site is also quite isolated in an urban environment. The garages are of negligible value for roosting bats.
- 4.2.16 No further survey of the garages is considered necessary. The demolition of these garages would not have a significant impact on bats.
- 4.2.17 The demolition works can be carried out at any time of year (subject to nesting bird restrictions). As a purely precautionary approach, and in order to protect bats in the unlikely event that any are present; and to avoid disturbance to bats during the works; Reasonable Avoidance Measures (RAMs) should be followed at all times during all works.
- 4.2.18 All site contractors should maintain a watching brief. If bats, or any evidence of bats, are encountered at any point during any works; all works must immediately stop and a licenced ecologist must be called. A licence will then be required from Natural Resources Wales before works can continue. This requirement should be detailed in all site inductions.
- 4.2.19 No information is currently available on external lighting with regards the proposal. The potential impact of lighting (both during construction and operation) on bats that may use the survey site/ adjacent habitat should be considered. Any external lighting at the proposed development site should follow guidance provided by The Bat Conservation Trust and Institution of Lighting Professionals (2018). Lighting that reduces vertical and horizontal light spillage should be used.
- 4.2.20 Assuming that RAMs are implemented and a sympathetic lighting arrangement is installed, no significant impact on potential foraging/ commuting resources close to the proposed development site is anticipated.

Birds

- 4.2.21 The proposal would result in the loss of a small number of young trees/ shrubs and the garages that could be used by nesting birds. Such nesting birds could include some species of conservation interest (e.g., House Sparrow). The proposal should include some tree and shrub planting that would offset the loss of these habitat features in the medium-term. The proposal would not give rise to a significant impact on local bird populations.

- 4.2.22 The proposal presents an opportunity to enhance the site for a priority species known to be present in the area; the House Sparrow. Nest-boxes specifically designed for this species (e.g., Vivara Pro Woodstone Single Chamber House Sparrow Nest-box⁹, Schwegler Brick Box No.24¹⁰ or EcoSurv Sparrow¹¹ nest-boxes) should be built into the new buildings ideally on north-east and or east elevations near planted shrubs/ trees. Three nest-boxes should be installed at Site A and six at Site B. These boxes should be installed within the wall. Full instructions for their installation are provided in Gunnell, Murphy & Williams (2013). These nest-boxes should ideally be installed at soffit/ eaves level (more than 2 m above ground level) out of direct sunlight, and at least 1 m apart. They should have unobstructed access and should not be located directly above any windows or doors. A suitably qualified ecologist should be consulted regarding appropriate locations for these nest-boxes.
- 4.2.23 Information on these nest-boxes and their value to House Sparrows should be provided to each of the new home-owners where they have been installed. Ideally each nest-box should be inspected annually and cleaned if necessary, outside the nesting season.
- 4.2.24 No further survey for birds is deemed necessary (other than a pre-work check should work be undertaken during the nesting season as detailed below).
- 4.2.25 The destruction of any bird nests that are in use is illegal. The simplest option to avoid issues arising from the presence of nesting birds is to schedule work that affects nesting habitat (e.g., clearance of trees/ shrubs, demolition of the garages) outside the nesting period (March to August inclusive). Should any occupied nests be found during the construction phase, a buffer zone (determined on the basis of the species concerned and the location of the nest in the context of the surrounding vegetation, but no less than 5 m) would be retained until it can be ascertained that the chicks have left the nest. The buffer zone will be appropriately fenced and signed.
- 4.2.26 If it is not possible to clear trees/ shrubs or undertake demolition outside the nesting season all such areas should be checked by a suitably qualified ecologist prior to commencement of works. If any active nests are found at this time a buffer zone as detailed above would be provided.

Other Species

- 4.2.27 New garden fences can prevent Hedgehogs from accessing gardens and traversing across built-up areas. To facilitate access to the gardens for Hedgehogs, if any boundary fences are installed, they should either incorporate a gap of 13 cm (in height) beneath them or otherwise a hole measuring 13 cm by 13 cm¹² should be cut into the base of the fence on each side of the gardens. To ensure that home-owners understand the reason for the holes in their fence each hole should be labelled on both sides with an appropriate sign, e.g. available from the British Hedgehog preservation Society¹³.

9

https://www.nhbs.com/equipment?q=&hPP=60&idx=titles&p=1&fR%5Bdoc_s%5D%5B0%5D=false&fR%5Bhide%5D%5B0%5D=false&fR%5Blive%5D%5B0%5D=true&hFR%5Bsubjects_equipment.lv1%5D%5B0%5D=Bird%20Boxes&qtview=217214

¹⁰ <http://www.nhbs.com/title/173236/schwegler-brick-nest-boxes>

¹¹ <http://www.ecosurv.co.uk/product/bird-box-range>

¹² <http://www.hedgehogstreet.org/pages/link-your-garden.html>

¹³ <https://www.britishhedgehogs.org.uk/shop/product/hedgehog-highway-sign/>

4.2.28 No significant impact on any other species of conservation interest is anticipated.

5 SUMMARY CONCLUSIONS

5.1.1 This report concludes the following with regards existing (on- and off-site) ecological resources:

- No statutory designated sites would be directly or indirectly impacted by the proposed development.
- A small area of amenity grassland, some young trees/ shrubs and the garages of no more than site value would be lost due to the proposed development.
- There is one locally notable plant within the proposed development site and this would be lost due to the proposal. One non-native invasive plant listed in *Schedule 9* was recorded from the proposed development site.
- Two trees of limited potential value (at most) for roosting bats are located outside the survey site and would be retained. The garages and other trees are of no/ negligible potential value for roosting bats.
- The habitat within the proposed development site is of negligible potential value for foraging/ commuting bats.
- Opportunities for breeding birds are very limited within the proposed development site and are associated with trees and the garages.

5.1.2 This report recommends the following avoidance/ mitigation measures:

- Temporary protective fencing should be installed to protect the trees at *Target Note 4/ 4a/ 4b*.
- The soft landscaping should include a small number of native trees/ shrubs.
- General best practice measures should be implemented during the construction phase to avoid any indirect impacts on adjacent habitat.
- Appropriate control measures for *Schedule 9* plants should be undertaken prior to the commencement of work on site.
- A watching brief for roosting bats should be maintained by site personnel throughout the demolition of the garages. The requirements of these RAMs should be detailed during all site inductions.
- Any external lighting provided as part of the proposed development should accord with best practice guidance to minimise impacts on foraging/ commuting bats.
- Removal of shrubs and trees/ demolition of the garages should be undertaken outside the bird nesting season. Should this not be possible then suitable habitat would need to be checked by a qualified ecologist prior to the commencement of work.
- All garden fences should include holes at the base to allow Hedgehogs to access the new gardens. These holes should be clearly identified.

5.1.3 This report recommends the following enhancement measure:

- Nine nest-boxes for House Sparrows should be incorporated into the new buildings.

6 TARGET NOTES

Site A

Target Note 1. Semi-mature *Fraxinus excelsior* (Ash) tree located just outside the survey site. Not able to view main trunk as located behind wall. No features of potential value for roosting bats visible.

Target Note 2. Amenity grassland dominated by *Lolium perenne* (Perennial Rye-grass) with abundant *Trifolium repens* (White Clover), frequent *Taraxacum officinale* (Dandelion), locally frequent *Festuca rubra* (Red Fescue), occasional *Agrostis capillaris* (Common Bent) and *Ranunculus repens* (Creeping Buttercup).

Target Note 3. A young *Sorbus aucuparia* (Rowan) tree with an approximate diameter at breast height (dbh) of 0.15 m and a young *Salix* sp. (Willow) tree with an approximate dbh of 0.2 m. The Rowan does not contain any features of potential value for roosting bats. The Willow contains some small rotholes that do not extend very far and some fused minor limbs. It is not of any value for roosting bats.

Target Note 4. A cluster of three semi-mature *Salix* sp. (Willow) trees.

The tree at *Target Note 4a* has an approximate dbh of 0.3 m with the main stem fused to a second stem. It contains four small splits in minor limbs, a small split in the main stem and some rot in minor limbs. It is of limited potential value for roosting bats at most.

The tree at *Target Note 4b* has an approximate dbh of 0.25 m. It contains a small split in a minor limb at 5 m height although it was not possible to view this in detail. It is of limited potential value for roosting bats at most but more likely to be of no value.

The third tree in the group contains a small number of rotholes but none appear to be very big or extensive. No features of potential value for roosting bats were visible.

Site B

Target Note 1. Seed/ grain that appears to have been put out to feed birds. Several Hedgehog droppings (including one recent) were present.

Target Note 2. A multi-stemmed young/ semi-mature *Acer pseudoplatanus* (Sycamore) tree. There are five main stems ranging in size from 0.07 m to 0.15 m dbh. As it was located in dense ornamental shrubs it was not possible to view most of the main trunks but they are likely to be too small to contain any features of potential value for roosting bats. There is a *Sorbus aucuparia* (Rowan) sapling in the same hedge.

Target Note 3. A *Cotoneaster* sp. seedling.

Target Note 4. Three young trees including two multi-stemmed *Acer pseudoplatanus* (Sycamore) trees and a *Sorbus aucuparia* (Rowan) located just outside the survey site. They have approximate dbh's of 0.1 m to 0.2 m. No features of potential value for roosting bats visible.

Target Note 5. A row of single garages (units 10-15). They are brick-built with flat-roofs covered in mineral roofing felt. It was not possible to access the eastern elevation and there was no internal access. It does not look like there would be any kind of roof space. The mortar work is generally in good condition and the roof is mostly well sealed. There is a 2 cm by 3 cm gap between the wall and roof of units 10 and 11. This was occupied by a Wasp nest. There is a similar gap between units 12 and 13. There are also some gaps around the fascia but these are generally too small for bats and are covered in cobwebs. On the southern elevation there is a 1 cm gap between the roof timber and the fascia. The extent of this gap is unknown. There may be a gap beneath the fascia on the eastern elevation.

Target Note 6. A row of single garages (units 16-20) similar to that at *Target Note 5*. It was not possible to access the western elevation and there was no internal access. The southern end has a 1 cm gap between the roof timber and the fascia. It is well used by slugs and covered with cobwebs. This building contains similar minor gaps around the fascia and door panels as that at *Target Note 5*.

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8 DATA

Table 1 – Vascular plant species recorded within the survey site

Plant Species	<i>Holcus lanatus</i> (Yorkshire-fog)
<i>Acer pseudoplatanus</i> (Sycamore)	<i>Hordeum murinum</i> (Wall Barley)
<i>Cotoneaster</i> sp.	<i>Hordeum vulgare</i> (Barley)
<i>Fraxinus excelsior</i> (Ash)	<i>Juncus bufonius</i> (Toad Rush)
<i>Prunus avium</i> (Wild Cherry)	<i>Lapsana communis</i> (Nipplewort)
<i>Salix</i> sp. (Willow)	<i>Lolium perenne</i> (Perennial Rye-grass)
<i>Sambucus nigra</i> (Elder)	<i>Lonicera</i> sp.
<i>Sorbus aucuparia</i> (Rowan)	<i>Matricaria discoidea</i> (Pineappleweed)
	<i>Medicago lupulina</i> (Black Medick)
<i>Agrostis capillaris</i> (Common Bent)	<i>Mycelis muralis</i> (Wall Lettuce)
<i>Agrostis stolonifera</i> (Creeping Bent)	<i>Pilosella</i> sp.
<i>Anisantha sterilis</i> (Barren Brome)	<i>Plantago lanceolata</i> (Ribwort Plantain)
<i>Arrhenatherum elatius</i> (False Oat-grass)	<i>Plantago major</i> (Greater Plantain)
<i>Asplenium ruta-muraria</i> (Wall-rue)	<i>Poa annua</i> (Annual Meadow-grass)
<i>Avena fatua</i> (Wild Oat)	<i>Polygonum aviculare</i> (Knotgrass)
<i>Bellis perennis</i> (Daisy)	<i>Polypogon viridis</i> (Water Bent0)
<i>Bromus hordaceus</i> (Soft-brome)	<i>Prunella vulgaris</i> (Selfheal)
<i>Capsella bursa-pastoris</i> (Shepherd's-purse)	<i>Pseudofumaria lutea</i> (Yellow Corydalis)
<i>Cardamine hirsuta</i> (Hairy Bitter-cress)	<i>Ranunculus repens</i> (Creeping Buttercup)
<i>Carex hirta</i> (Hairy Sedge)	<i>Rubus fruticosus</i> agg. (Bramble)
<i>Centaurea nigra</i> (Common Knapweed)	<i>Rumex obtusifolius</i> (Broad-leaved Dock)
<i>Cerastium fontanum</i> (Common Mouse-ear)	<i>Sagina procumbens</i> (Procumbent Pearlwort)
<i>Chamerion angustifolium</i> (Rosebay Willowherb)	<i>Sedum album</i> (White Stonecrop)
<i>Cirsium vulgare</i> (Spear Thistle)	<i>Senecio jacobaea</i> (Common Ragwort)
<i>Crepis capillaris</i> (Smooth Hawk's-beard)	<i>Senecio vulgaris</i> (Groundsel)
<i>Dactylis glomerata</i> (Cock's-foot)	<i>Sonchus oleraceus</i> (Smooth Sowthistle)
<i>Epilobium hirsutum</i> (Great Willowherb)	<i>Stellaria media</i> (Common Chickweed)
<i>Epilobium montanum</i> (Broad-leaved Willowherb)	<i>Taraxacum</i> sect. <i>Ruderalia</i> (Common Dandelion)
<i>Equisetum arvense</i> (Field Horsetail)	<i>Trifolium repens</i> (White Clover)
<i>Festuca rubra</i> (Red Fescue)	<i>Tripleurospermum inodorum</i> (Scentless Mayweed)
<i>Galium aparine</i> (Cleavers)	<i>Triticum</i> sp. (Wheat)
<i>Geranium molle</i> (Dove's-foot Crane's-bill)	<i>Veronica persica</i> (Common Field-speedwell)
<i>Geranium robertianum</i> (Herb-robert)	<i>Vulpia myuros</i> (Rat's-tail Fescue)
<i>Geum urbanum</i> (Wood Avens)	

9 APPENDIX 1 - SPECIES-SPECIFIC LEGISLATION

9.1 Introduction

- 9.1.1 The species-specific legislation below is presented here due either to the actual or suspected/ possible presence of each species on the site or within the zone of influence and is therefore considered to be relevant for this study.
- 9.1.2 This sub-section provides a brief summary of key relevant species legislation. It should not be considered a comprehensive review and is not meant to be so. It is provided here for information only and is not intended to replace specialised legal advice. It does not replace the text of the legislation, but summarises the salient points.

9.2 Bats

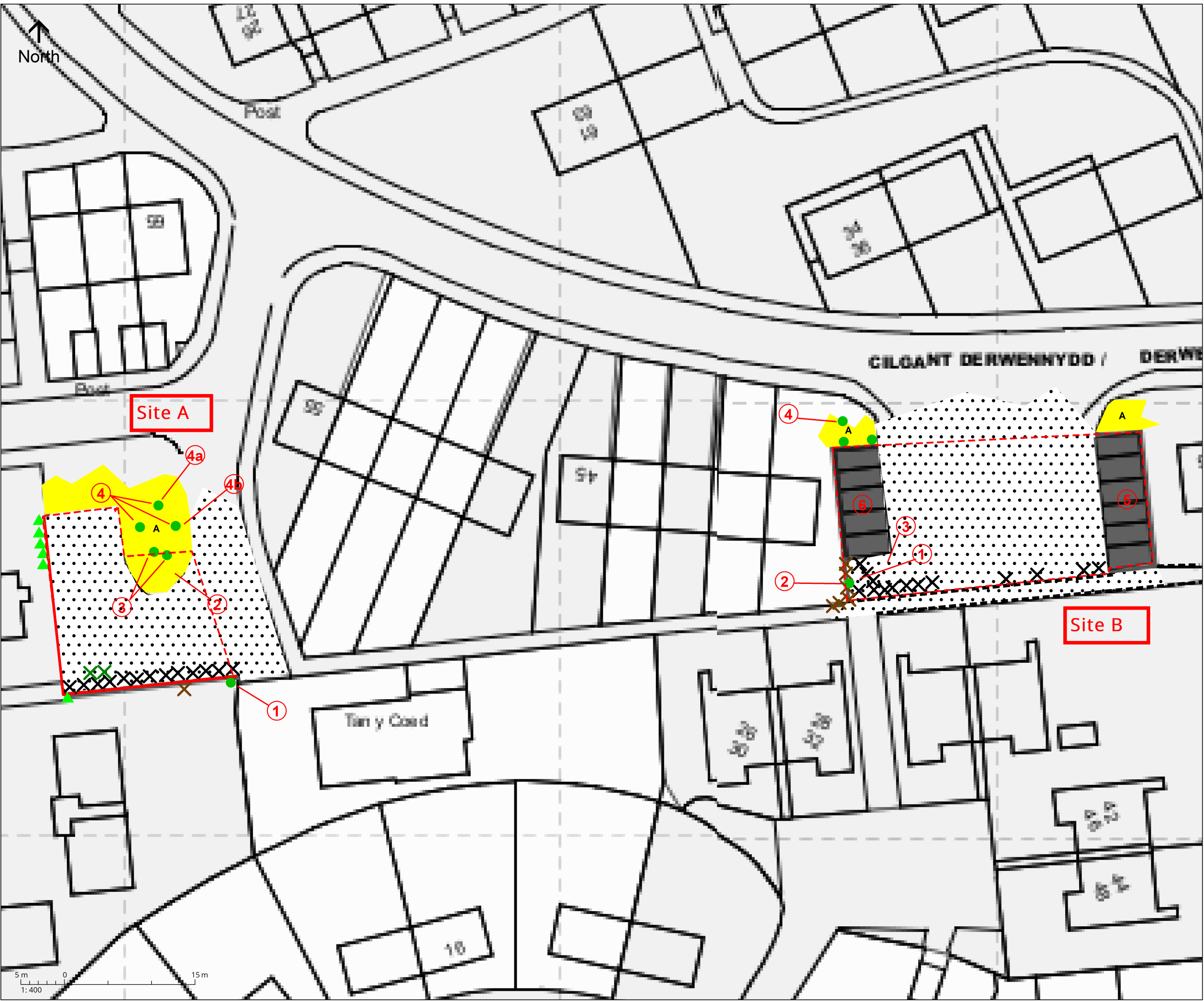
- 9.2.1 All species of British bat are listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receive full protection under *Section 9*. They are also listed as European Protected Species on *Schedule 2* of *The Conservation of Habitats and Species Regulations 2017* which gives them full protection under *Regulation 42(1)*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the *CRoW Act 2000*).
- 9.2.2 Under the above legislation it is an offence to intentionally or recklessly:
- kill, injure or take an individual of such a species;
 - possess any part of such species either alive or dead;
 - damage, destroy or obstruct access to any place or structure used by such species for shelter, rest, protection or breeding;
 - disturb such a species whilst using any place of shelter or protection; or
 - sell or attempt to sell any such species.
- 9.2.3 Several species of bat are included on *Section 7* of the *Environment Act 2016*.
- 9.2.4 All species of British bat are also protected under *Schedule 6* of the *Wildlife and Countryside Act 1981* (as amended). This protection relates specifically to trapping and direct pursuit of the species.

9.3 Birds

- 9.3.1 All species of bird are protected under *Section 1* of the *Wildlife and Countryside Act 1981* (as amended). The protection was extended by the *CRoW Act 2000*.
- 9.3.2 The legislation makes it an offence to intentionally or recklessly:
- kill, injure or take any wild bird;
 - take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
 - take or destroy an egg of any wild bird.
- 9.3.3 Certain species of bird are listed on *Schedule 1* of the *Wildlife and Countryside Act 1981* (as amended) and receive protection under *Sections 1(4)* and *1(5)* of the Act. The legislation confers special penalties where the above mentioned offences are committed for any such bird and also make it an offence to intentionally or recklessly:

- disturb any such bird, whilst building its nest or it is in or near a nest containing dependant young; or
- disturb the dependant young of such a bird.

9.3.4 Section 7 of the *Environment Act 2016* includes several birds.



- Individual broad-leaved tree
- ✕ Scattered scrub
- ▲ Individual coniferous tree
- A Amenity grassland
- ✕ Scattered introduced shrub
- ✕ Ephemeral/ short perennial
- ⋯ Hard-standing
- Building
- - - Fence
- Wall
- - - Survey site boundary
- Target Note

C454 Proposed Development, Derwent
Crescent, Wrexham - Preliminary
Ecological Appraisal

Figure 1 - Extended Phase 1 Habitat
Survey

Date: 23/07/2021

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