

Report Title	Proposed Residential Development, Land to the East of Bottom Road, Summerhill, Wrexham LL11 4TR – Ecological Appraisal
Date issued	21st January 2020
Author	Max Ellson
Report Version	C415/ 1.0
Client	Mr A.O. Jones
Contract Ref.	C415

this report was produced by



**Unit 23, The Malthouse Business Centre,
Regent Street, Llangollen, Denbighshire, LL20 8HS
01978 860889**

Marches Ecology is the trading name of Marches Ecology LLP, Partnership No. OC362423, Registered in England and Wales. Registered address: Unit 23, The Malthouse Business Centre, Regent Street, Llangollen, Denbighshire, LL20 8HS.

Quality Assurance

Survey/ Assessment Work Schedule		
Survey/Assessment Type	Surveyors	Date
Extended Phase 1 Habitat Survey	Max Ellson	15/11/19

Review Schedule				
Issue	Date	Author(s)	Reviewed by	Approved by
1.0	21/01/20	Max Ellson	Tom Knight	Tom Knight

This report has been prepared by Marches Ecology with all reasonable skill, care and diligence within the terms of the Contract with the client.

The terms of this Contract have been fulfilled by Marches Ecology in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

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

This report is confidential to the client and we accept no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

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.

CONTENTS

1	INTRODUCTION.....	4
1.1	PROJECT BACKGROUND	4
1.2	REPORT AUTHOR	4
1.3	SITE DESCRIPTION AND CONTEXT	4
1.4	THE PROPOSAL.....	5
1.5	PLANNING HISTORY AND PREVIOUS ECOLOGY REPORTS.....	5
1.6	PLANNING POLICY	6
1.7	LEGISLATION	10
2	METHODOLOGY.....	12
2.1	FIELD SURVEY	12
2.2	SURVEY LIMITATIONS.....	14
2.3	EVALUATION.....	14
3	BASELINE ECOLOGICAL CONDITIONS	15
3.1	PROTECTED SITES	15
3.2	HABITATS AND FLORA.....	15
3.3	SPECIES/ SPECIES GROUPS.....	18
4	EVALUATION, ASSESSMENT AND RECOMMENDATIONS	21
4.1	INTRODUCTION.....	21
4.2	EVALUATION, ASSESSMENT AND RECOMMENDATIONS.....	21
5	TARGET NOTES	28
6	REFERENCES.....	30
7	DATA.....	32
8	APPENDIX 1 – SPECIES-SPECIFIC LEGISLATION	33

Figure 1 – Extended Phase 1 Habitat Survey

1 INTRODUCTION

1.1 Project Background

- 1.1.1 Marches Ecology was commissioned by Mr A.O. Jones to undertake an Ecological Appraisal of land to the east of Bottom Road, Summerhill, Wrexham (Approximate Grid Ref: SJ 3103 5421). This Ecological Appraisal comprises an Extended Phase 1 Habitat Survey and a review of previous ecological reports relevant to the site¹.
- 1.1.2 This report is provided as supporting information to an (outline) planning application to Wrexham County Borough Council (WCBC) for a proposed residential development at the site. It has three principal aims:
- to provide an initial appraisal of the ecological value of the site and local ecological resource;
 - to detail further surveys that may be required; and
 - to identify potential development constraints relating to ecology and outline potential mitigation/ enhancement measures where possible.
- 1.1.3 The structure of this Ecological Appraisal 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 Max Ellson of Marches Ecology. Max Ellson is an ecologist with approximately twenty 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).
 - MSc Vegetation Survey and Assessment.
 - BSc (Hons) Environmental Biology.

1.3 Site Description and Context

- 1.3.1 The survey site is located to the immediate north of existing residential housing on the northern end of Summerhill, Wrexham. It extends to approximately 1.2 hectares and comprises part of a larger agricultural grassland field which extends to the north. The field comprises poor semi-improved grassland.
- 1.3.2 Bottom Road provides the western boundary of the survey site, from which it is largely separated by a roadside hedgerow; on the opposite side of the road another hedgerow is

¹ Consultation with Emma Broad (Ecologist, WCBC) (by 'phone on 10/12/19) concluded that an ecological background data search was not required in this instance.

located with an agricultural grassland field to the west. Moss Valley Golf Club lies further to the west.

- 1.3.3 The northern boundary is undefined. The eastern boundary also comprises a hedgerow, on the opposite side of which lie similar agricultural grassland fields which extend towards a railway line and main road. The southern boundary is largely fenced, separating the survey site from existing housing (locally there is an existing footpath adjacent to the southern boundary). A small part of the southern boundary extends into a private domestic garden associated with 'Greenacres'; this is separated from Bottom Road by a wall.

1.4 The Proposal

- 1.4.1 The proposal concerns the construction of 31 detached/ semi-detached houses with associated parking provisions, front and rear gardens and soft-landscaping. It is illustrated on a D.S. Jones & Co. plan entitled '*Proposed Residential Development on land to the east of Bottom Road, Summerhill, Wrexham, LL11 4TR – Suggested Site Layout Plan (2)*.' drawing no. 10083.05.dsj, dated Jan 2020.
- 1.4.2 The proposal also includes 5.5 m and 4.5 m wide central 'Adoptable Roadways', a shared private drive, pedestrian footways, and an area of 'Public Open Space/ SUDs²'. No details of the SUDs have been provided at this stage. A 5.0 m wide 'Habitat Corridor' is to be provided adjacent to the northern and western site boundaries, with a new hedge to be planted along the northern boundary (as well as around the Public Open Space (POS)). Access will be gained off Bottom Road, partly utilising an existing agricultural access point. A 'potential future access' point is also indicated on the eastern side of the site.
- 1.4.3 No further detailed information regarding the proposed development has been provided.

1.5 Planning History and Previous Ecology Reports

- 1.5.1 The proposed development site was included as part of a larger residential development proposal for which planning permission (ref P/2016/0738) was sought but dismissed (on appeal) in 2018. This previous scheme extended north of the proposed development site being currently considered.
- 1.5.2 *Paragraphs 31 and 32 of the Appeal Decision report (The Planning Inspectorate 2018) are as follows:*

31. A 'Bat Transect and Remote Detector Survey Report' was provided in October 2016. It noted there to be no statutory designated sites for bats within 10km of appeal site and there to be similar habitats to the appeal site around it (except to the south) and in the wider area. Foraging and commuting activity was observed over the site's hedgerows, but the report concluded that within context of the agricultural practices on the appeal site and countryside around it, the proposed development would be on land that is low value habitat for bats and it offers no roosting opportunities. Proposed mitigation would address lighting during and after construction, along with roosting, foraging and commuting habitat enhancement. Appeal stage documentation includes an 'Ecological Enhancement Plan' that provides

² Sustainable Urban Drainage System.

greater detail on these measures, along with mitigation and enhancements for nesting birds and important hedgerows, and mitigation for badgers.

32. Information submitted with the Grounds of Appeal have caused the Council to conclude that the proposed ecological mitigation is "...likely to result in a high standard of remediation of the site to cater for the development and absorb the impact of the built development...". The Council does not identify harm to protected species, and the evidence in this case confirms that none would occur and any impacts would be adequately mitigated. The Council has suggested a condition that would address this. For these reasons, no conflict with UDP Policy EC6 has been demonstrated.

1.5.3 Ecology reports prepared and submitted in support of this application (and available on the WCBC planning portal³) included⁴ the following:

- Delta-Simons (2016). *Extended Phase 1 Habitat Survey, Land North of Summerhill, Wrexham*. Delta-Simons Project No. 16-1267.01. Report prepared on behalf of Site Plan UK LLP.
- Delta-Simons (2016a). *Breeding Bird Survey Report, Land North of Summerhill, Wrexham*. Delta-Simons Project No. 16-1267.01. Report prepared on behalf of Site Plan UK LLP.
- Delta-Simons (2016b). *Bat Transect and Remote Detector Survey Report, Land North of Summerhill, Wrexham*. Delta-Simons Project No. 16-1267.01. Report prepared on behalf of Site Plan UK LLP.

Where deemed applicable to the current development proposal these reports have been reviewed and referenced within this report.

1.6 Planning Policy

Introduction

1.6.1 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

1.6.2 Planning Policy Wales (PPW) sets out national land use planning policies (Welsh Government 2018). 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 proposals 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;*

³ <http://planning.wrexham.gov.uk/Planning/lg/GFPlanningWelcome.page>

⁴ It has not been possible to source a copy of the 'Ecological Enhancement Plan' as mentioned in Paragraph 31 of the Appeal Decision report (The Planning Inspectorate 2018).

- *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'.*

1.6.3 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'.*
- *'The planning system has a key role to play in helping to reverse the decline in biodiversity and increasing resilience of ecosystems, at various scales, by ensuring appropriate mechanisms are in place to both protect against loss and to secure enhancement'.*
- *'Where adverse effects on the environment cannot be avoided or mitigated, it will be necessary to refuse planning permission'.*

1.6.4 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'.

1.6.5 Areas that Chapter 6 covers include statutory designations, protected species and specific habitats/ areas. National policy statements are listed at the end of the Chapter and cross-referenced to paragraphs.

Technical Advice Note 5

1.6.6 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.

1.6.7 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 2.2.1⁵);

- 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).*

Wrexham

- 1.6.8 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

- 1.6.9 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.*

⁵ References to the relevant part of PPW.

- *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 EC2. Development on agricultural land of grades 1, 2 or 3a will only be permitted if it does not lead to the irreversible loss of that land.*
- *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

- 1.6.10 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) notes are of particular relevance:
- LPG 17 Trees and Development. Adopted September 2000, Updated December 2012. Provides further advice in relation to UDP policy EC4.
 - 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.
- 1.6.11 The Wrexham Biodiversity Action Plan (WBAP) is also listed as supplementary planning guidance on the WCBC website. This reference is out-of-date, the WBAP has been archived and is no longer available.

1.7 Legislation

Introduction

- 1.7.1 This sub-section provides a brief summary of key legislation relevant to ecology/ nature conservation and the proposal. 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 of potential relevance to this proposal is provided in *Appendix 1*.

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

- 1.7.2 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 are limited to bats.

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

- 1.7.3 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 receive some level of protection under the WCA and are of relevance to the proposal; bats and birds. The WCA also prohibits the spread of certain non-native invasive species (e.g. Cotoneaster).

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

- 1.7.4 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)

- 1.7.5 *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

- 1.7.6 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)

- 1.7.7 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 November 2019 by Max Ellson of Marches Ecology. The Extended Phase 1 Habitat plan is provided as *Figure 1*. The survey focussed on the red-line boundary as indicated on drawing no. 10083.05.dsj; this is henceforth referred to as the 'survey site' (refer to *Figure 1*). It should however be noted that whilst no access permission was provided to the garden of 'Greenacres' (a very small part of which is located within the survey site), it could be adequately viewed from adjacent land. Immediately adjacent habitat was considered where appropriate and viewed from the survey site boundary where possible. The weather during the survey was cold, with variable cloud cover, and recent heavy rain (including overnight).
- 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. 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. Target notes are recorded for habitat and features of possible botanical interest and features relating to animals including protected/ notable vertebrates that are likely to occur in the region and within the survey site. Evidence of activity was noted when encountered. The Target Notes are provided in *Section 5* and shown on *Figure 1*.
- 2.1.3 In addition to the habitat map and target notes, a plant species list was compiled (provided in *Table 1, Section 7*). Plant nomenclature in this report follows Stace (2010). Although November is outside 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 is provided briefly below:
- Badger. Areas within the survey site that might be used by Badger (*Meles meles*) for foraging and sett building were assessed. Incidental foraging signs, tree scratching, paths, latrines and setts were recorded if found (Harris *et al.*, 1989).
 - Bats. The potential value of the habitat for roosting/ foraging/ commuting was assessed in accordance with *Table 4.1* provided in Collins (2016).

- Great Crested Newt. The quality of terrestrial habitat for Great Crested Newts (*Triturus cristatus*) was assessed.
- Reptiles. A qualitative assessment of the habitat for reptiles was undertaken. The survey involved identifying potential basking areas, hibernation sites and foraging habitat. English Nature (2004) provides further information on the distribution and ecology of the four widespread species. Habitat requirements differ between species but are summarised in Edgar *et al.* (2010).
- 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:

- November is outside the accepted period for undertaking an Extended Phase 1 Habitat Survey. However, considering the character of the habitat present this constraint is not considered to be significant.
- Dense boundary hedgerows may have obscured evidence of use of the survey site by protected/ notable species.
- No access was provided to the garden at 'Greenacres' (refer above).
- Some of the boundaries of the survey site are not physically marked.
- No background data search has been undertaken to inform the survey and this report. This approach was agreed as acceptable with Emma Broad (refer to footnote 1, page 4).

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 Protected Sites

- 3.1.1 Although no ecological background data search has been completed, a brief review of <https://magic.defra.gov.uk/> has been undertaken: this has concluded that there are no statutory protected sites within 1 km of the survey site. Data on non-statutory sites has not been obtained as part of this study. Delta-Simons (2016) included a data search however, and concluded that '*there will be no significant adverse affects upon anywildlife sites*'. Protected sites will not be mentioned further in this report.

3.2 Habitats and Flora

Introduction

- 3.2.1 The Extended Phase 1 Habitat map is provided as *Figure 1*. The Target Notes (no's 1 and 3-5 for the survey site, and 2, 6 and 7 for adjacent land) are provided in *Section 5/* shown on *Figure 1*.

Hedgerows

- 3.2.2 Two hedgerows are located within the survey site: a field hedge at *Target Note 3* on the eastern boundary of the survey site, and a roadside hedge at *Target Note 4* on the western boundary. The hedge at *Target Note 3* appears to have been managed in the recent past by cutting (although not on the eastern side).



Hedge at Target Note 3. Photo taken from south-east corner of survey site.

- 3.2.3 It is to approximately 1.5-1.75 m high (very locally at the northern end to 2 m) and 2 m wide. It is located on a slope between two agricultural fields and is partly fenced on the survey site side. The woody shrub component comprises abundant/ locally dominant *Crataegus*

monogyna (Hawthorn), with frequent/ locally abundant *Ilex aquifolium* (Holly), frequent *Sambucus nigra* (Elder), and lesser amounts of *Rosa canina* agg. (Dog-rose), *Prunus spinosa* (Blackthorn) and *Acer pseudoplatanus* (Sycamore). The ground flora comprises an occasional carpet of *Hedera helix* agg. (Ivy) with associates including occasional/ locally abundant *Mercurialis perennis* (Dog's-mercury); it is frequently bare. There is a narrow (approximately 0.5 m wide) field boundary supporting coarse-leaved grasses and tall-herbs.

- 3.2.4 At *Target Note 4*, the hedge appears to have been managed in the recent past (by cutting) to approximately 2 m high and wide. Locally it is fenced on the survey site side. It is located on a bank which is to approximately 0.5-1 m high above the field. The woody shrub component is not clearly dominated by a single species, being comprised of frequent/ locally abundant Holly, *Corylus avellana* (Hazel) and Blackthorn, with occasional Sycamore, Dog-rose and *Fraxinus excelsior* (Ash), frequent Hawthorn, and lesser amounts of *Quercus robur* (Pedunculate Oak), *Acer campestre* (Field Maple) and Elder. The scrambler *Lonicera periclymenum* (Honeysuckle) was also recorded. The ground flora was largely obscured by recently cut brash, however it occasionally comprises a carpet of Ivy with other typical hedge base plants including occasional/ locally frequent *Stellaria holostea* (Greater Stitchwort), *Dryopteris filix-mas* (Male-fern), *Geum urbanum* (Wood Avens) and Dog's-mercury. Delta-Simons (2016) also recorded *Ficaria verna* (Lesser Celandine), *Arum maculatum* (Lords-and-ladies) and *Viola riviniana* (Common Dog-violet). There is a narrow field margin similar to that described at *Target Note 3*.



Hedge at *Target Note 4*. Photo taken from south-west corner of survey site.

Grassland

- 3.2.5 A poor semi-improved grassland field (*Target Note 1*) dominates the survey site. It appears to be regularly managed e.g. by mowing and muck spreading (including both in the recent past). The sward height was to a maximum of 0.2 m. The sward is grass dominated and overall species-poor; greater diversity of plants was recorded occasionally at the field edges including plants such as *Potentilla reptans* (Creeping Cinquefoil) and *Achillea millefolium* (Yarrow). Grasses recorded include abundant/ locally dominant *Holcus lanatus* (Yorkshire-

fog), frequent *Dactylis glomerata* (Cock's-foot) and *Festuca rubra* (Red Fescue) and less amounts of *Bromus hordeaceus* (Soft Brome). Forbs include abundant *Rumex acetosa* (Common Sorrel), frequent *Taraxacum* sect. *Ruderalia* (Common Dandelion), *Ranunculus repens* (Creeping Buttercup), *Ranunculus acris* (Meadow Buttercup), *Trifolium repens* (White Clover) and *Trifolium pratense* (Red Clover), locally frequent *Heracleum sphondylium* (Hogweed), occasional *Plantago lanceolata* (Ribwort Plantain), and lesser amounts of *Vicia* cf. *sativa* (Common Vetch), *Rumex obtusifolius* (Broad-leaved Dock) and *Urtica dioica* (Common Nettle). It is noted that Delta-Simons (2016) which included the results of an Extended Phase 1 Habitat Survey undertaken at a more appropriate time of year (April), also recorded the grasses *Cynosurus cristatus* (Crested Dog's-tail) and *Alopecurus* sp. (a Foxtail).



Grassland field at **Target Note 1**. Photo taken from north-east corner of survey site.

Other Habitats

3.2.6 Other habitats/ features within the survey site are limited to the following:

- a small area of domestic garden (associated with 'Greenacres') (**Target Note 5**): no direct access was provided and as such it was viewed from adjacent land access points. It comprises small stands of ornamental plantings and amenity grassland (mown garden lawn). The planting including various small ornamental conifers, mature shrubs such as *Rhododendron* sp. (Azalea), *Fuchsia* sp. (Fuchsia), *Pyracantha* sp. (Firethorn) and *Hydrangea* sp. (Hydrangea), young trees including *Sorbus* sp., an ornamental *Prunus* sp. (Cherry) tree and a young/ semi-mature *Acer* sp., along with ground cover plants.

Immediately Adjacent Habitats

3.2.7 Adjacent domestic buildings are described at **Target Notes 6 and 7**.

3.3 Species/ Species Groups

Badgers

- 3.3.1 Two groups of Badger paths/ breaches were recorded crossing the grassland field that dominates the survey site. *Target Note 3a* indicates the approximate location of a Badger path/ breach under a hedge; a single dung-pit (recently used) was recorded under the hedge as well. There is no discernible path into the field but it is likely that this feature connects with a (faint) path/ breach on the opposite side of the field at *Target Note 4b*. Another Badger path/ breach under a hedge was recorded at *Target Note 3b*: there is a short length of path extending into the field at this location, and although this soon tapers out, it is likely that it connects with a distinct path/ breach on the opposite side of the field at *Target Note 4a*. Several foraging signs were located along this path. Although no corresponding breaches were located on the opposite side of Bottom Road, it is evident that Badgers cross the survey site east-west.
- 3.3.2 No setts were recorded during the Extended Phase 1 Habitat Survey. Opportunities for sett construction are largely limited to the edges of the grassland field/ boundary hedges, particularly that at *Target Note 3*. The only obvious feature adjacent to the survey site which could support a sett is a small zone of scrub to the immediate north-east (in the vicinity of *Target Note 3b*).
- 3.3.3 The grassland resource which dominates the survey site at *Target Note 1* provides high potential value for foraging. The agricultural landscape which surrounds the survey site to the east, north and west, provides similar opportunities.
- 3.3.4 Delta-Simons (2016) recorded a similar level of Badger activity to the north of the survey site, with a single 'latrine' being recorded under a hedge on the eastern side and '*Mammal runs along the eastern boundary, crossing the Site to west and in the north-eastern corner*'.

Bats

- 3.3.5 There are no built structures within the survey site. Two domestic buildings located adjacent to (the southern boundary of) the survey site (*Target Notes 6 and 7*) weren't assessed in detail for bats; however they appeared to be in good condition with no obvious features noted. These buildings are deemed to have low bat roost potential.
- 3.3.6 No semi-mature/ mature trees which may provide roosting potential are located within/ immediately adjacent to the survey site.
- 3.3.7 The poor semi-improved grassland which dominates the survey site is unlikely to provide any particular foraging resources for bats. Potential foraging/ commuting features are largely limited to two boundary hedgerows at *Target Notes 3 and 4* which form part of a wider network in the landscape, which are, for example, connected to potential roosting locations in domestic houses to the south.
- 3.3.8 Delta-Simons (2016b) provides a '*Bat Transect and Remote Detector Survey Report*' which included the survey site being considered in this report, as well as land to the north. This study deployed a static detector at the northern end of the survey site being considered at

that time (approximately 225 m to the north of the survey site boundary being considered in this report). A transect was also completed around the boundary of the survey site being considered at that time, with 'stop-off points' 1 and 6 being located within the survey site boundary being considered in this report. A small number of foraging and commuting bats were recorded, including utilising the hedgerow boundaries at *Target Notes* 3 and 4. It included the following summary:

'The static bat detector (Detector 1) recorded moderate levels of common pipistrelle, soprano pipistrelle and noctule bat activity during both May and June. The greatest species diversity was recorded during May, when both common and soprano pipistrelles, noctule bat, Myotis spp. and Brown Long-Eared (BLE) bat were recorded.

The most bat activity was detected at the northern extent of the Site where bats were observed foraging along the hedgerow boundary.

Timings from the May and June bat transect surveys and the remote monitoring, indicate that possible noctule and common pipistrelle roosts are located off-Site within close range to the northern extent of the Site.'

And concluded that:

'Overall, given its size and its location within the wider landscape, the Site is considered to represent low value habitat in respect to bats, in particular due to the low grassland species diversity, the low habitat diversity and lack of waterbodies on or adjacent to the Site. Furthermore, it does not offer any roosting opportunities.'

- 3.3.9 Given the smaller size of the survey site being considered within this report it is concluded that the survey site provides low (potential) value for commuting/ foraging bats (in accordance with Collins (2016)).

Great Crested Newts

- 3.3.10 There is no aquatic habitat within the survey site of potential value for Great Crested Newts.
- 3.3.11 The terrestrial habitat afforded by the poor semi-improved grassland field at *Target Note 1* is of low potential quality for Great Crested Newts; it provides frequently managed/ disturbed grassland where potential refugia opportunities are likely to be restricted to features such as small mammal holes. Foraging opportunities are likely to be limited. Should they be present, animals would be able to pass across the grassland however it does not provide a distinct dispersal corridor.
- 3.3.12 Terrestrial habitat of potentially moderate/ high quality for this species within/ immediately adjacent to the survey site is limited to the two boundary hedges at *Target Notes* 3 and 4, and possibly the garden habitat at *Target Note* 5.
- 3.3.13 An initial review of the OS map 1:25, 000 scale and relevant internet-based mapping including aerial photography⁶ does not indicate the presence of any waterbodies within approximately 250 m of the survey site. A similar result is reached from analysing the data

⁶ <https://www.google.com/maps/@53.0805126,-3.031163,1343m/data=!3m1!1e3>

included in Delta-Simons (2016), which concludes that '*There are no further recommendations with regards to GCNs.*'

- 3.3.14 Due to the apparent lack of suitable breeding waterbodies within 250 m of the survey site, further surveys and or mitigation measures are not considered necessary for Great Crested Newts and this species group will not be considered further in this report. This conclusion was discussed and agreed in principle with Emma Broad (WCBC) during a 'phone conversation on 10/12/19.

Reptiles

- 3.3.15 The survey site is dominated by agricultural grassland which provides negligible potential value for reptiles. Although the field margins/ hedge bases provide potential habitat (including for foraging and commuting), they are not connected to any notable areas of potential habitat in the locality and do not form part of an obvious dispersal corridor for this species group at this location. Delta-Simons (2016) outlines that reptiles are not known from the immediate vicinity of the survey site and concluded that '*There are no further recommendations for reptiles at the Site.*'
- 3.3.16 As such, further surveys and or mitigation measures are not considered necessary for reptiles and this species group will not be considered further in this report.

Birds

- 3.3.17 Opportunities for nesting birds within the survey site/ immediately adjacent land are restricted to hedgerows and buildings.
- 3.3.18 Delta-Simons (2016a) provides a '*Breeding Bird Survey Report*' which included the survey site being considered in this report, as well as land to the north. It states that '*The grassland habitat is considered to offer little value for breeding birds*'. Notable species listed as being supported by the survey site (all considered as '*probably breeding on Site or immediately adjacent to the Site*') are listed as '*including house sparrow, starling, linnet, song thrush and dunnock*'. Although this report concluded that the survey site supports a '*breeding bird community considered to be of [no more than] 'local' nature conservation value*' it also notes that '*no significant populations of breeding birds have been recorded on Site*' and '*Most species recorded are both commonly recorded locally and widespread within the county*'.

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.

4.1.2 No further detailed information regarding the proposed development has been provided. In the absence of such information potential impacts have been considered with reference to the plans/ information provided only.

4.2 Evaluation, Assessment and Recommendations

Habitats

4.2.1 The survey site includes the following habitat resources/ features:

- Two boundary hedgerows at *Target Notes 3 and 4*;
- Poor semi-improved grassland at *Target Note 1* (part of a larger field unit); and
- A small area of domestic garden (*Target Note 5*) supporting small stands of ornamental plantings and amenity grassland.

4.2.2 With the exception of the boundary hedgerows, all of the habitats/ features listed above are considered to be of no more than site value⁷ (due to their size, quality and geographical location). No further survey of this habitat resource is considered necessary at this time and no particular mitigation measures are proposed (other than the avoidance/ best practice measures detailed below). The loss of these habitat resources would not give rise to a significant impact. The hedgerows are of greater value and are considered further below.

4.2.3 'Hedgerows' is a priority habitat listed on *Section 7*. This priority habitat covers all hedgerows consisting predominantly (*i.e.* 80% or more cover) of at least one woody UK species (Biodiversity Reporting & Information Group, 2011). The hedgerow at *Target Note 4* in particular is (moderately) species-rich in terms of its woody component and ground flora (as it is currently known) and could potentially qualify as being 'important' in accordance with the 'ecological criteria' established in the *Hedgerow Regulations 1997*. The hedgerow at *Target Note 3* does not appear to be so species-rich. It should be noted that it is not possible to confirm whether any hedgerow could be considered important (using ecological criteria only) under the *Hedgerow Regulations 1997* without further survey (or indeed is excluded from the *Regulations*).

⁷ In accordance with CIEEM (2018).

- 4.2.4 Delta-Simons (2016) concludes that '*The hedgerow around the northern boundary of the Site is classed as 'Important'...*'. It is a bit unclear what length of hedgerow this refers to: it notes it extends '*approximately 200m with the occasional break for access into the Site*', but it is unclear if this extends into the survey site being considered by this report. Nonetheless it is understood through discussion with Emma Broad (WCBC) that the hedgerow at *Target Note 4* has been subject to a detailed survey in the past which concluded it is 'Important'.
- 4.2.5 The draft Wrexham Wildlife Sites selection criteria (WCBC 2015) indicates a minimum length of 50m for 'Ancient and/ or species-rich hedgerows' to be considered. Qualification for this definition is based on the species richness of the woody component and the presence of 'ancient woodland indicator' species. Further survey would be required to determine whether these criteria are met. Similarly, these features could qualify based on the species they support but further survey would be required to confirm this. In the absence of such survey data it is considered that the hedges at *Target Notes 3 and 4* are of local value (being as they are connected to a wider network in the landscape).
- 4.2.6 Review of drawing no. 10083.05.dsg concludes that direct impacts associated with the proposal would be limited to the following habitats/ features:
- Loss of a short section (approximately 12 m) of the roadside hedgerow at *Target Note 4*;
 - Loss of the poor-semi improved grassland at *Target Note 1*; and
 - Loss of the ornamental plantings and amenity grassland resource at *Target Note 5*.
- 4.2.7 Taking into account the proposal includes significant hedgerow planting, the loss of the short stretch of hedgerow of local value would not give rise to a significant adverse impact (at the local level). All retained stretches of hedgerow at *Target Notes 3 and 4* will be protected during any construction phase by the installation of temporary protective fencing. The fences protecting the hedgerows will 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). Such fences will remain in-situ until the completion of the construction. No access/ storage of materials/ construction work, etc. will be allowed beyond them.
- 4.2.8 General best practice measures will 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 Pollution Prevention Guidance (PPG) 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.
- 4.2.9 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 retained/ valued habitat resources located within or close to the development site.
- 4.2.10 Technical Advice Note 5: Nature Conservation and Planning (Welsh Assembly Government 2009) seeks development to achieve net biodiversity gain. Drawing no. 10083.05.dsg illustrates 2 no. 5.0 m wide 'Habitat Corridors'. These will be demarcated by appropriate (temporary) fencing and protected from development activities in advance of any works

being initiated on site. Drawing no. 10083.05.dsg indicates that they will subsequently be protected by the installation of 1 m high 'picket' style fences; however these fences will rather be installed at a minimum 2 m high to minimise the potential for garden waste to be deposited over them. The 'Habitat Corridors' are to be left unmanaged in the medium- long-term. However they will initially be established with a coarse/ tussock grass/ wildflower mix such as EM10 (<https://wildseed.co.uk/mixtures/view/10>). The seed suppliers' instructions will be fully followed in terms of ground preparation, sowing and initial management of the developing sward.

- 4.2.11 A hedgerow will be planted along the northern boundary of the northern 'Habitat Corridor', as well as around the boundary of the POS/ SUDs area as indicated on drawing no. 10083.05.dsg. Any such planting will use native species of ideally local, but minimum British provenance. The woody species-mix utilised will be chosen by an appropriately qualified ecologist and reflect species found in local hedgerows, particularly that at *Target Note 4*. In addition, all planted hedgerow lengths will be underplanted with native/ locally appropriate hedgerow ground flora plants (again to be chosen by an appropriately qualified ecologist). Consideration will also be given to translocating the section of hedgerow at *Target Note 4* which is to be removed, and replanting it elsewhere on site; this should be discussed and agreed with WCBC at the detailed planning stage. All hedgerows will be managed appropriately in the long-term.
- 4.2.12 The area of POS/ SUDs as indicated on drawing no. 10083.05.dsg will be subject to an appropriate ecologically-led design in order to maximise the positive biodiversity impact of the created resources. Where amenity lawn is to be provided, this will utilise a 'Flowering lawn' mix⁸. Once established, this habitat can be mown regularly as a lawn. Ideally mowing should be to a minimum height of 0.04 m, with mowing suspended in spring to allow Cowslips to flower, and again from June for a period of 4-8 weeks to allow flowering of other species. All arisings will be removed after mowing.
- 4.2.13 The design of any other soft-landscaping included as part of the proposals will be guided by an appropriately qualified ecologist at the detailed planning stage. In addition, further advice will be sought from an ecologist to guide the long-term management of all created habitats/ features. Any requirement for an 'Ecological Enhancement Plan' or similar (to guide the creation of and long-term management of retained/ created habitats) will be discussed and agreed with WCBC.

Flora

- 4.2.14 No species of plant listed in categories (above Least Concern) in the most recent Vascular Plant Red Data List for Wales (Dines 2008) and no plants of local importance (as described in Williams (2014)) were recorded from the survey site.
- 4.2.15 Two types of plant listed on *Schedule 9 of the Wildlife & Countryside Act 1981* (as amended) was recorded from the survey site/ immediately adjacent land, as follows:
- *Target Note 2*. Two small *Cotoneaster* shrubs located on the opposite/ southern side of a fenced boundary to the survey site (on the immediate northern boundary of a footpath). The western of the two locations indicated comprised a *Cotoneaster* cf.

⁸ for example: <http://wildseed.co.uk/mixtures/view/56/flowering-lawn-mixture>

simonsii (Himalayan Cotoneaster) shrub, and the eastern location a *Cotoneaster* cf. *bullatus* (Hollyberry Cotoneaster) shrub.

- **Target Note 5** (within the survey site): a single plant of *Cotoneaster* cf. *horizontalis* (Wall Cotoneaster) and a young scrambling plant of *Parthenocissus inserta* (False Virginia-creeper) growing up a roadside wall.

4.2.16 It is illegal to plant or otherwise cause to grow in the wild any plant listed in *Schedule 9* to the Act. 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*⁹. *Section 14 (1)* covers spreading the species or transferring polluted ground material from one area to another.

4.2.17 A specific additional survey for *Schedule 9* plants should be undertaken prior to the commencement of construction and at an appropriate time of year. Subsequent to this survey a Biosecurity Risk Assessment should be produced that will both detail any control measures required (pre- and during construction), and identify appropriate working practices in order to minimise the risk of spreading these plants.

Fauna

Badger

4.2.18 No setts were recorded within the survey site and opportunities for sett excavation are limited (to boundary hedgerows/ field edges). A small amount of evidence of Badger activity was recorded: including evidence to suggest that Badgers cross the site east-west and also occasionally forage on the grassland. The grassland habitat is of high potential value for foraging, however it appears it may be being used incidentally as Badgers cross the site to different parts of their territory.

4.2.19 The proposal will result in the loss of a moderate sized area of poor semi-improved grassland of high (potential) value for foraging. However, as the recorded evidence suggests that the grassland within the survey site is not being extensively used by Badgers, the loss of this grassland is therefore unlikely to give rise to a significant impact on the available foraging resource. The proposed grassland in the 'Habitat Corridors' and in the POS/ SUDs area may provide foraging opportunities. Including fruiting shrubs within the hedgerow plantings would provide further foraging opportunities.

4.2.20 The proposal is likely to interrupt routes that Badger currently use across the site. However, the 'Habitat Corridors', particularly the northern one, would allow Badgers to continue to disperse in these directions, should they choose to do so. Due to the low level of activity detected on the survey site these impacts are unlikely to be significant.

4.2.21 As a precautionary approach, a pre-construction Badger check will be completed of all potentially suitable habitats within at least 30 m of the survey site boundary. This check should be completed in sufficient time in advance of any potentially licensable activities being initiated (including site clearance works) to allow for licensing should it subsequently be required. It will be necessary to design and implement appropriate mitigation based on the results of this check.

⁹ <http://www.nonnativespecies.org/index.cfm?pageid=67>

- 4.2.22 In addition, best practice will be implemented during the construction phase as a precautionary approach and to avoid any potential impacts on Badgers. If construction includes the excavation of deep holes or trenches, such features will be required to be filled in overnight or otherwise made safe by securely covering them or the provision of suitable ramps. In addition, all open ends of pipes (above approximately 150 mm diameter) or other materials that Badgers may access should be securely capped/ plugged overnight. No night working will be undertaken as part of the scheme. Any construction related activities undertaken during dawn/ dusk will be subject to particular care, with all vehicles being driven at low speeds and personnel maintaining a watching brief for Badgers at all times (to avoid collisions). Any fencing that may be required during the construction and occupation phases will consider Badger movements so that they are not unnecessarily obstructed.

Bats

- 4.2.23 There are no trees/ buildings/ structures located within/ immediately adjacent to the survey site that are considered to be of more than low potential value for roosting bats. No (semi-mature/ mature) trees or buildings will be directly impacted. As such there are no potential impacts to (roosting) bats from the proposals.
- 4.2.24 The habitat resource provided by the survey site has been assessed as being of low value for foraging/ commuting bats, and in addition the proposal as illustrated on drawing no. 10083.05.dsg will result in the loss of poor semi-improved grassland and an approximately 12 section of hedgerow (*Target Note 4*) only. As such potential (negative) impacts to foraging/ commuting bats (from habitat loss) are deemed negligible and no further survey or specific mitigation measures are considered necessary. The proposals for significant hedgerow planting/ creation of 2 no. 'Habitat Corridors' (to be characterised by unmanaged grassland) are deemed to provide potential enhancements for bats. Any planting scheme designed at the detailed design stage will also utilise appropriate ecological advice to (where possible) design effective tree planting within the scheme, to include appropriate species and positioning, e.g. clumps and linear belts.
- 4.2.25 Artificial external lighting can have an adverse effect on bats (in terms of foraging/ commuting resources). No information has been provided on proposed lighting for the proposal however this will follow guidance provided by The Bat Conservation Trust and Institution of Lighting Professionals (2018). This is relevant to both the construction phase and the occupation phases (*i.e.* in the design of the lighting to be installed on houses/ elsewhere within the development). A suitably qualified ecologist will review and assist with the lighting proposals as required. Retained/ created habitats, especially hedgerows, will be kept as dark as possible. Measures to avoid/ minimise light spillage will include:
- 'Warm white' LED lamps;
 - All luminaires will lack UV elements when manufactured and have an upward light ratio of 0%;
 - All luminaires used will be fully directional (e.g. LED) and will point straight down to where the light is required. They will be mounted on the horizontal, *i.e.* no upward tilt.
 - Lighting that reduces vertical and horizontal light spillage will be used;
 - The number of poles/ bollards/ lamps installed will be kept to a minimum and will be as low (in height) as possible;
 - Low wattage lamps (<70W) will be used;

- All external lighting will only be turned on when the area is in use wherever possible (and should be fitted with motion detectors, automatic timers and/ or dimmers);
- Cowls/ hoods/ baffles or similar will be used where the light spillage is likely to cause an unacceptable light level increase in adjacent retained/ created habitat; and
- Lighting near the retained/ planted hedgerows/ the 2 no. 'Habitat Corridors' will be avoided/ limited.

4.2.26 The proposed development presents an opportunity to increase potential roost features, in particular for crevice-dwelling bats. There are a number of different ways in which roosting opportunities can be included in the construction of houses. The simplest are the inclusion of bat access tiles, though roof-blocks at the eaves, built-in bat-boxes/ bat bricks and/ or access beneath ridge tiles are all readily available. Where access is provided beneath roof tiles the new roof must be lined with bituminous roofing felt only that does not contain polypropylene filaments (e.g. Bitumen felt type 1F, which is hessian reinforced)¹⁰. Further information on installation is provided in Gunnell, Murphy & Williams (2013).

4.2.27 At least 10% of the housing units (or equivalent to) will contain built-in bat roost features. These features will be located close to the areas of open space/ or boundary hedgerows, and away from any external lighting. A suitably qualified bat ecologist will be consulted on their appropriate siting. Information on these roost features and their value to bats will be provided to each of the new home-owners where they have been installed.

Birds

4.2.28 Potential impacts on birds (with regards loss of potential nesting sites) associated with the proposal as illustrated on drawing no. drawing no. 10083.05.dsg are limited to the loss of a short length of roadside hedgerow at *Target Note 4*, and perhaps some opportunities associated with the garden shrubs at *Target Note 5*. Such nesting birds may include some species of conservation interest. Habitat of potential value for nesting birds should be retained as far as is possible and protected during the construction phase (as detailed above). The proposed hedgerows and trees to be planted should offset the loss of these habitat features in the medium-term. It is considered unlikely that the proposal would give rise to a significant impact on local bird populations.

4.2.29 As such 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).

4.2.30 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 shrubs, hedgerow removal) 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.

4.2.31 If it is not possible to e.g. clear shrubs, remove hedgerow lengths outside the nesting season all such areas should be checked by a suitably qualified ecologist prior to commencement of

¹⁰ http://www.bats.org.uk/news.php/254/bats_and_breathable_roofing_membranes_update_of_findings_%20

works. If any active nests are found at this time a buffer zone as detailed above would be provided.

- 4.2.32 The construction of a large number of houses at the development site presents an opportunity to provide appropriate enhancements for birds that nest within built structures, some of which are priority species. At least 10% of the housing units (or equivalent to) will contain built-in nest-boxes for the House Sparrow (e.g. Schwegler Brick Box No.24¹¹). These boxes will be located close to the areas of open space/ or boundary hedgerows but ideally be provided on the north-east and or east elevations. A suitably qualified ecologist will be consulted on their appropriate siting. Information on these nest-boxes and their value to House Sparrows will be provided to each of the new home-owners where they have been installed. Further information on installation is provided in Gunnell, Murphy & Williams (2013).
- 4.2.33 Provision for other species of conservation interest (e.g. Starling, Swift, House Martin) will also be considered at the detailed design stage.

¹¹ <http://www.nhbs.com/title/173236/schwegler-brick-nest-boxes>

5 TARGET NOTES

Target Note 1. A poor semi-improved grassland field. It appears to be regularly managed e.g. by mowing and muck spreading (including both in the recent past). The sward height was to a maximum of 0.2 m. The sward is grass dominated and overall species-poor; greater diversity of plants was recorded occasionally at the field edges including plants such as *Potentilla reptans* (Creeping Cinquefoil) and *Achillea millefolium* (Yarrow). Grasses recorded include abundant/ locally dominant *Holcus lanatus* (Yorkshire-fog), frequent *Dactylis glomerata* (Cock's-foot) and *Festuca rubra* (Red Fescue) and less amounts of *Bromus hordeaceus* (Soft Brome). Forbs include abundant *Rumex acetosa* (Common Sorrel), frequent *Taraxacum sect. Ruderalia* (Common Dandelion), *Ranunculus repens* (Creeping Buttercup), *Ranunculus acris* (Meadow Buttercup), *Trifolium repens* (White Clover) and *Trifolium pratense* Red Clover), locally frequent *Heracleum sphondylium* (Hogweed), occasional *Plantago lanceolata* (Ribwort Plantain), and lesser amounts of *Vicia cf. sativa* (Common Vetch), *Rumex obtusifolius* (Broad-leaved Dock) and *Urtica dioica* (Common Nettle). It is noted that Delta-Simons (2016) which included the results of an Extended Phase 1 Habitat Survey undertaken at a more appropriate time of year (April) also recorded the grasses *Cynosurus cristatus* (Crested Dog's-tail) and *Alopecurus* sp. (a Foxtail).

Target Note 2. Two small *Cotoneaster* shrubs located on the opposite/ southern side of a fenced boundary to the survey site (on the immediate northern boundary of a footpath). The western of the two locations indicated comprised a *Cotoneaster cf. simonsii* (Himalayan Cotoneaster) shrub, and the eastern location a *Cotoneaster cf. bullatus* (Hollyberry Cotoneaster) shrub.

Target Note 3. A field hedgerow forming the eastern boundary of the survey site. It appears to have been managed in the recent past by cutting (although not on the eastern side). It is to approximately 1.5-1.75 m high (very locally at the northern end to 2 m) and 2 m wide. It is located on a slope between two agricultural fields and is partly fenced on the survey site side. The woody shrub component comprises abundant/ locally dominant *Crataegus monogyna* (Hawthorn), with frequent/ locally abundant *Ilex aquifolium* (Holly), frequent *Sambucus nigra* (Elder), and lesser amounts of *Rosa canina* agg. (Dog-rose), *Prunus spinosa* (Blackthorn) and *Acer pseudoplatanus* (Sycamore). The ground flora comprises an occasional carpet of *Hedera helix* agg. (Ivy) with associates including occasional/ locally abundant *Mercurialis perennis* (Dog's-mercury), *Galium aparine* (Cleavers) and occasional coarse-leaved grasses and tall-herbs; it is frequently bare. There is a narrow (approximately 0.5 m wide) field boundary supporting coarse-leaved grasses and tall-herbs.

Target Note 3a. Approximate location of a Badger path/ breach under a hedge; a single dung-pit (recently used) was also recorded under the hedge. There is no discernible path into the field but it is likely that this feature connects with a path/ breach on the opposite side of the field at *Target Note 4b*. The hedge could support a sett.

Target note 3b. Approximate location of a Badger path/ breach under a hedge; a clump of guard-hairs was recorded where the path exits from the hedge. There is a short length of path extending into the field and although this soon peters out it is likely that it connects with a path/ breach on the opposite side of the field at *Target Note 4a*.

Target Note 4. A roadside field hedgerow forming the western boundary of the survey site. There is a similar hedge on the opposite side of Bottom road. The hedge appears to have been managed in the recent past (by cutting) to approximately 2 m high and wide. Locally it is fenced on the survey site side. It is located on a bank which is to approximately 0.5-1 m high above the field. The woody shrub component is not clearly dominated by a single species, being comprises of frequent/ locally abundant Holly, *Corylus avellana* (Hazel) and Blackthorn, with occasional Sycamore, Dog-rose and *Fraxinus excelsior* (Ash), frequent Hawthorn, and lesser amounts of *Quercus robur* (Pedunculate Oak), *Acer campestre* (Field Maple) and Elder. The scrambler *Lonicera periclymenum* (Honeysuckle) was also recorded. The ground flora was largely obscured by recently cut brash however it occasionally comprises a carpet of Ivy with other typical hedge base plants including occasional/ locally frequent *Stellaria holostea* (Greater Stitchwort), *Dryopteris filix-mas* (Male-fern), *Geum urbanum* (Wood Avens) and Dog's-mercury. Delta-Simons (2016) also recorded *Ficaria verna* (Lesser Celandine), *Arum*

maculatum (Lords-and ladies) and *Viola riviniana* (Common Dog-violet). There is a narrow field margin similar to that described at *Target Note 3*.

Target Note 4a. Approximate location of a Badger path/ breach under a roadside hedge. No direct evidence of use by Badger was located but it is clearly used by this species and there is a distinct short length of path extending into the field, near to which several foraging locations were recorded. No corresponding breach was located on the opposite side of Bottom Road.

Target Note 4b. Approximate location of a Badger path/ breach under a roadside hedge. A single guard-hair was located and there is a faint path extending into the field. This feature doesn't appear particularly well-used and no corresponding breach was located on the opposite side of Bottom Road.

Target Note 5. A small area of domestic garden (associated with 'Greenacres') is included within the survey site: no direct access was provided and as such it was viewed from adjacent land access points. It comprises small stands of ornamental plantings and amenity grassland (mown garden lawn). The planting including various small ornamental conifers, mature shrubs such as *Rhododendron* sp. (Azalea), *Fuchsia* sp. (Fuchsia), *Pyracantha* sp. (Firethorn) and *Hydrangea* sp. (Hydrangea), young trees including *Sorbus* sp., an ornamental *Prunus* sp. (Cherry) tree and a young/ semi-mature *Acer* sp., along with ground cover plants such as ornamental Ivy, *Crocsmia* sp. (Montbretia), *Hebe* sp. (Hebe), (a single plant of) *Cotoneaster* cf. *horizontalis* (Wall Cotoneaster), and heathers. A young scrambling plant of *Parthenocissus inserta* (False Virginia-creeper) was also recorded growing up a roadside wall.

Target Note 6. The domestic buildings within 'Greenacres' lie in close proximity to the survey site boundary: whilst these weren't assessed in detail for bats they appeared to be in good condition with no obvious features noted. These buildings are deemed to have low bat roost potential.

Target Note 7. Adjacent domestic buildings, similar to that described at *Target Note 6*.

6 REFERENCES

- Bat Conservation Trust and Institution of Lighting Professionals (2018). *Guidance Note 08/18. Bats and Artificial Lighting in the UK. Bats and the Built Environment Series.*
- Biodiversity Reporting and Information Group (ed. Maddock, A.) (2011). *UK Biodiversity Action Plan; Priority Habitat Descriptions.*
- CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition.* Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM (2017a). *Guidelines for Preliminary Ecological Appraisal, 2nd Edition.* CIEEM, Winchester.
- CIEEM (2017b). *Guidelines on Ecological Report Writing, 2nd Edition.* CIEEM, Winchester.
- CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.* Chartered Institute of Ecology and Environmental Management, Winchester.
- Collins, J. (ed.) (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd Edn).* The Bat Conservation Trust, London.
- Delta-Simons (2016). *Extended Phase 1 Habitat Survey, Land North of Summerhill, Wrexham.* Delta-Simons Project No. 16-1267.01. Report prepared on behalf of Site Plan UK LLP.
- Delta-Simons (2016a). *Breeding Bird Survey Report, Land North of Summerhill, Wrexham.* Delta-Simons Project No. 16-1267.01. Report prepared on behalf of Site Plan UK LLP.
- Delta-Simons (2016b). *Bat Transect and Remote Detector Survey Report, Land North of Summerhill, Wrexham.* Delta-Simons Project No. 16-1267.01. Report prepared on behalf of Site Plan UK LLP.
- Department of the Environment (1997a). *The Hedgerow Regulations 1997.* Statutory Instrument 1997 No. 1160, Countryside.
- Department of the Environment (1997b). *The Hedgerow Regulations 1997 – A Guide to the Law and Good Practice.* Department of the Environment, London.
- Dines, T. (2008). *A Vascular Plant Red Data List for Wales.* Plantlife International, Salisbury.
- Edgar, P., Foster, J. and Baker, J. (2010). *Reptile Habitat Management Handbook.* Amphibian and Reptile Conservation, Bournemouth.
- English Nature (2004). *Reptiles: guidelines for developers.* English Nature, Peterborough.
- Gunnell, K., Murphy, B. & Williams, C. (2013). *Designing for Biodiversity: A Technical Guide for New and Existing Buildings.* Second Edition. RIBA Publishing, London.
- Harris, S., Cresswell, P., & Jeffries, D. (1989). *Surveying Badgers.* Occasional Publication No. 9, The Mammal Society.
- HMSO (1981). *The Wildlife and Countryside Act 1981.* HMSO, London.
- HMSO (2000). *The Countryside and Rights of Way Act 2000.* HMSO, London.
- HMSO (2006). *The Natural Environment and Rural Communities Act 2006.* HMSO, London.
- HMSO (2016). *The Environment Act (Wales) 2016.* HMSO, London.
- HMSO (2017). *The Conservation of Habitats and Species Regulations 2017.* HMSO, London.

Institute of Environmental Assessment (1995). *Guidelines for Baseline Ecological Assessment*. E & FN Spon, London.

JNCC (2004). *Common Standards Monitoring Guidance for Birds*. Version August 2004. Joint Nature Conservation Committee, Peterborough.

JNCC (2010). *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit*. Joint Nature Conservation Committee, Peterborough. Available online:
http://jncc.defra.gov.uk/PDF/pub10_handbookforphase1habitatsurvey.pdf

Stace, C. (2010; 3rd Edition). *New Flora of the British Isles*. Cambridge University Press, Cambridge.

The Planning Inspectorate (2018). *Appeal Ref: APP/H6955/A/17/3183371*. Site address: *Land to the east of Bottom Road, Gwersyllt, Summerhill, LL11 4TR*.

Welsh Government (2009). *Planning Policy Wales - Technical Advice Note 5: Nature Conservation and Planning*. September 2009.

Welsh Government (2018). *Planning Policy Wales*. Edition 10, December 2018.

Williams, D. (2014). *Denbighshire (VC50) County Rare Plant Register*. Botanical Society of Britain & Ireland.

Wrexham County Borough Council (2005). *Wrexham Unitary Development Plan 1996-2011*. Adopted 14th February 2005.

Wrexham County Borough Council (2011). *Local Planning Guidance Note 32 Biodiversity and Development*. Adopted March 2011.

Wrexham County Borough Council (2012). *Local Planning Guidance Note 17 Trees and Development*. Adopted September 2000, Updated December 2012.

WCBC (2015). *Wrexham Wildlife Sites - A System for their Selection and Designation*. Draft March 2015. Unpublished report.

7 DATA

Table 1 – Vascular plant species recorded within the survey site

Plant Species	
<i>Acer campestre</i> (Field Maple)	<i>Equisetum arvense</i> (Field Horsetail)
<i>Acer pseudoplatanus</i> (Sycamore)	<i>Festuca rubra</i> (Red Fescue)
<i>Acer</i> sp.	<i>Galium aparine</i> (Cleavers)
<i>Corylus avellana</i> (Hazel)	<i>Geranium molle</i> (Dove's-foot Crane's-bill)
<i>Cotoneaster</i> cf. <i>horizontalis</i> (Wall Cotoneaster)	<i>Geranium robertianum</i> (Herb-robert)
<i>Crataegus monogyna</i> (Hawthorn)	<i>Geum urbanum</i> (Wood Avens)
<i>Fraxinus excelsior</i> (Ash)	<i>Glechoma hederacea</i> (Ground-ivy)
<i>Fuchsia</i> sp. (Fuchsia)	<i>Hedera helix</i> agg. (Ivy)
<i>Hebe</i> sp. (Hebe)	<i>Heracleum sphondylium</i> (Hogweed)
<i>Hydrangea</i> sp. (Hydrangea)	<i>Holcus lanatus</i> (Yorkshire-fog)
<i>Ilex aquifolium</i> (Holly)	<i>Lapsana communis</i> (Nipplewort)
<i>Prunus spinosa</i> (Blackthorn)	<i>Lolium perenne</i> (Perennial Rye-grass)
<i>Prunus</i> sp. (Cherry)	<i>Lonicera periclymenum</i> (Honeysuckle)
<i>Pyracantha</i> sp. (Firethorn)	<i>Mercurialis perennis</i> (Dog's-mercury)
<i>Quercus robur</i> (Pedunculate Oak)	<i>Plantago lanceolata</i> (Ribwort Plantain)
<i>Rhododendron</i> sp. (Azalea)	<i>Poa annua</i> (Annual Meadow-grass)
<i>Rosa canina</i> agg. (Dog-rose)	<i>Poa trivialis</i> (Rough Meadow-grass)
<i>Sorbus</i> sp.	<i>Potentilla anserina</i> (Silverweed)
<i>Sambucus nigra</i> (Elder)	<i>Potentilla reptans</i> (Creeping Cinquefoil)
	<i>Ranunculus acris</i> (Meadow Buttercup)
<i>Achillea millefolium</i> (Yarrow)	<i>Ranunculus repens</i> (Creeping Buttercup)
<i>Alliaria petiolata</i> (Garlic Mustard)	<i>Rubus fruticosus</i> agg. (Bramble)
<i>Anisantha sterilis</i> (Barren Brome)	<i>Rumex acetosa</i> (Common Sorrel)
<i>Anthriscus sylvestris</i> (Cow Parsley)	<i>Rumex obtusifolius</i> (Broad-leaved Dock)
<i>Arrhenatherum elatius</i> (False Oat-grass)	<i>Stellaria holostea</i> (Greater Stitchwort)
<i>Bromus hordeaceus</i> (Soft Brome)	<i>Taraxacum</i> sect. <i>Ruderalia</i> (Common Dandelion)
<i>Calystegia sepium</i> (Hedge Bindweed)	<i>Trifolium pratense</i> (Red Clover)
<i>Cirsium arvense</i> (Creeping Thistle)	<i>Trifolium repens</i> (White Clover)
<i>Dactylis glomerata</i> (Cock's-foot)	<i>Urtica dioica</i> (Common Nettle)
<i>Dryopteris filix-mas</i> (Male-fern)	<i>Vicia sativa</i> (Common Vetch)
<i>Elytrigia repens</i> (Common Couch)	

8 APPENDIX 1 – SPECIES-SPECIFIC LEGISLATION

8.1 Introduction

8.1.1 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.

8.1.2 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.

8.2 Badger

8.2.1 The Badger is protected in Britain under the *Protection of Badgers Act 1992* and *Schedule 6* of the *Wildlife and Countryside Act 1981* (as amended). The legislation affords protection to:

- wilfully kill, injure, take, possess or cruelly ill-treat a Badger, or attempt to do so;
- interfere with a sett by damaging or destroying it;
- to obstruct access to, or any entrance of, a Badger sett; or
- to disturb a Badger when it is occupying a sett.

8.3 Bats

8.3.1 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 40(1)*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the *CRoW Act 2000*).

8.3.2 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.

8.3.3 Several species of bat are included on *Section 7* of the *Environment Act 2016*.

8.3.4 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.

8.4 Birds

8.4.1 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*.

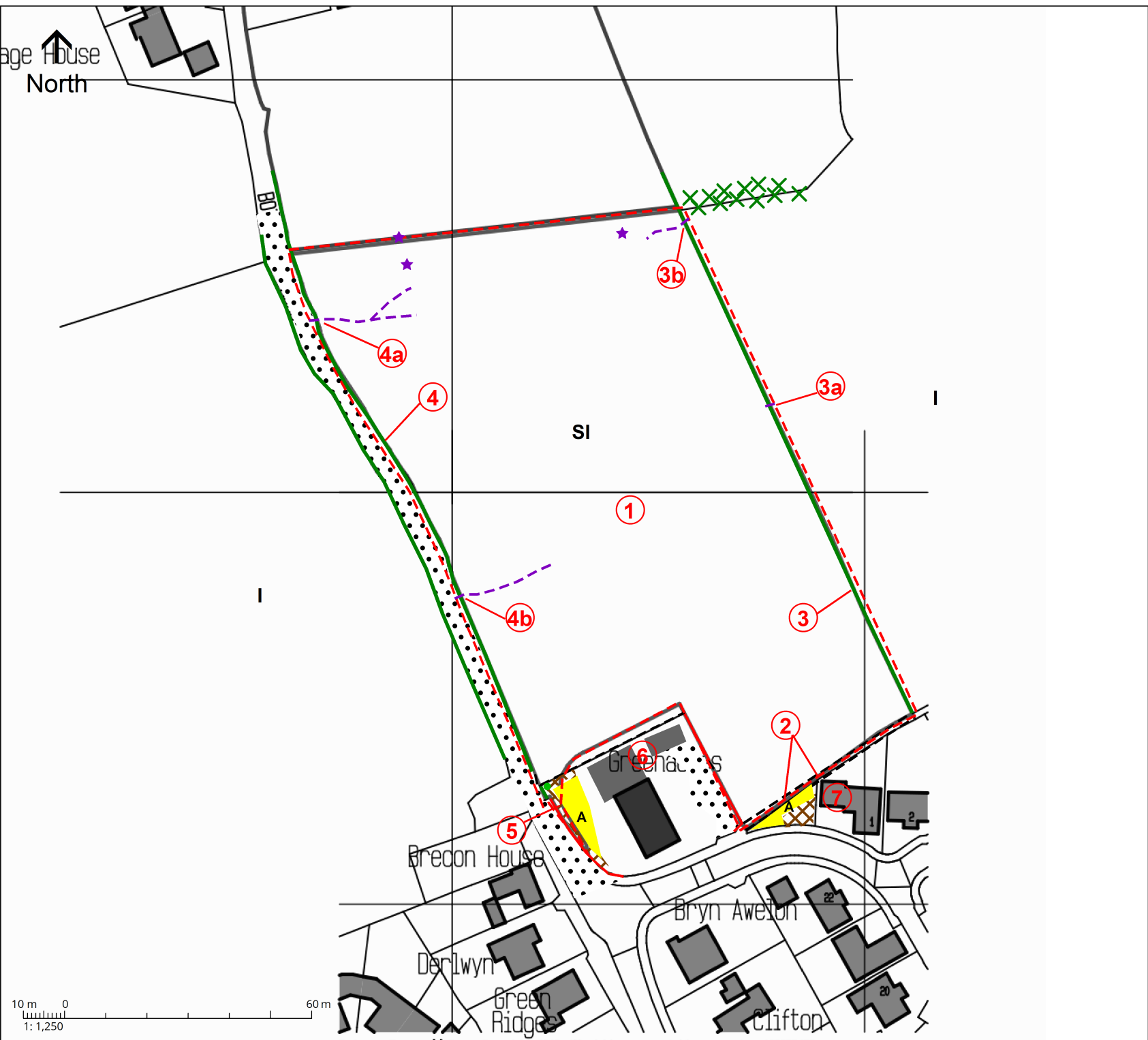
8.4.2 The legislation makes it an offence to intentionally or recklessly:

- 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.

8.4.3 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.

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



- Hedgerow
- Individual broad-leaved tree
- X Scattered scrub
- SI** Poor semi-improved grassland
- I** Improved grassland
- A Amenity grassland
- X Introduced shrub
- Building
- Hard-standing/ bare ground
- Fence
- Wall
- Badger breach/ path
- ★ Badger foraging
- Survey site boundary
- Target Note

**C415 Proposed Residential Development,
Land to the East of Bottom Road,
Summerhill, Wrexham, LL11 4TR -
Ecological Appraisal**

**Figure 1 - Extended Phase 1 Habitat
Survey**

Date: 20/11/2019

marches ecology

www.marchesecology.co.uk