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

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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.

CONTENTS

1	INTRODUCTION.....	4
1.1	PROJECT BACKGROUND	4
1.2	REPORT AUTHOR	4
1.3	SITE DESCRIPTION AND CONTEXT	4
1.4	THE DEVELOPMENT.....	4
1.5	PLANNING POLICY	5
1.6	LEGISLATION	8
2	METHODOLOGY.....	10
2.1	FIELD SURVEY	10
2.2	SURVEY LIMITATIONS.....	11
2.3	EVALUATION.....	11
3	BASELINE ECOLOGICAL CONDITIONS	12
3.1	STATUTORY PROTECTED SITES	12
3.2	HABITATS AND FLORA.....	12
3.3	SPECIES/ SPECIES GROUPS.....	14
4	EVALUATION, ASSESSMENT AND RECOMMENDATIONS	17
4.1	INTRODUCTION	17
4.2	EVALUATION, ASSESSMENT AND RECOMMENDATIONS.....	17
5	SUMMARY CONCLUSIONS	22
6	TARGET NOTES	23
7	REFERENCES.....	24
8	DATA.....	25
9	APPENDIX 1 - SPECIES-SPECIFIC LEGISLATION.....	26
9.1	INTRODUCTION	26
9.2	BADGER.....	26
9.3	BATS	26
9.4	GREAT CRESTED NEWT.....	26
9.5	REPTILES.....	27
9.6	BIRDS	27

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 land off Heol Offa, Johnstown, Wrexham (approximate OS Grid Ref. SJ 303 459). 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 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 extends to approximately 870 m². It largely comprises an area of amenity grassland with some native and ornamental shrubs. The boundaries are fenced.

1.3.2 The survey site is located towards the centre of Johnstown. It is directly bordered to the north and south by residential housing. To the west it is bordered by Heol Offa, on the opposite side of which there is further residential housing. To the east/ northeast there are allotments and back gardens associated with some of the adjacent housing.

1.4 The Development

1.4.1 The layout for the proposed development is shown on a WCBC plan entitled '*Feasibility Site Layout A*', dwg. no. FS 01, dated Sept 2020. The proposal concerns a single residential housing unit providing four flats. Six car parking spaces are shown although the plan does not show the vehicular access, areas of hard-standing or any landscaping.

- 1.4.2 The plan shows the red line boundary which is the same as the survey site boundary.
- 1.4.3 No further detail with regards the proposed development has been provided at this stage.

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 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;*
- 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'.*
- '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'.*

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) 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).*

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.

¹ References to the relevant part of PPW.

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*.

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

- 1.6.2 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 bats and Great Crested Newt (*Triturus cristatus*).

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

- 1.6.3 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 that receive some level of protection under the WCA and are of potential relevance to the proposal include Badger (*Meles meles*), bats, Great Crested Newts, reptiles and birds. The WCA also prohibits the spread of certain non-native invasive species.

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

- 1.6.4 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)

- 1.6.5 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

- 1.6.6 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)

- 1.6.7 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 30th November 2020 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*). Immediately adjacent habitat was considered where deemed appropriate and viewed from the survey site boundary where possible. The weather during the survey was 100% grey cloud cover with light rain showers and 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). 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 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 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).
 - 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 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:

- The Extended Phase 1 Habitat Survey was undertaken outside the recognised survey period. Some flowering plants will not have been visible.
- There is a hedge along the southern site boundary – it is not possible to view all of the base of this feature.

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 is one statutory designated site within 1 km of the survey site: Johnstown Newt Sites Special Area of Conservation (SAC)/ Stryt Las a'r Hafod Site of Special Scientific Interest (SSSI). The closest part (Aberderfyn) of this designated site is located approximately 300 m to the east at the nearest part of its boundary. Stryt Las Country Park is approximately 342 m to the west.

3.1.2 Johnstown Newt Sites SAC extends to 69.61 hectares. No *Annex I* habitats are given as a primary reason for selection of the site as an SAC or as a qualifying feature. Great Crested Newt is the *Annex II* species that is the primary reason for selection of the site as an SAC. No *Annex II* species are given as a qualifying feature. The following description is reproduced from the SAC citation:

'This site lies near to Wrexham in north-east Wales and is composed of two post-industrial sites where coal and clay have been extracted. The population of Great Crested Newts Triturus cristatus is one of the largest known in Great Britain and has been the focus of much conservation management over the last few years. Breeding sites are provided in part by a mining subsidence pool, and natural water-filled hollows on clay, whilst other ponds have been created as part of nature conservation management. Terrestrial habitat varies from marshy grassland, grazed farmland and swamp through to scrub and broad-leaved woodland. Good populations of the widespread amphibian species are also present'.

3.1.3 Stryt Las a'r Hafod SSSI extends to 69.4 hectares and the boundary largely corresponds with the SAC. The citation states that *'the water bodies at Stryt Las and Hafod support one of the largest known breeding populations of the Great Crested Newt in Britain'*. It also notes the presence of *'significant populations'* of the four common amphibian species.

3.1.4 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) are provided in *Section 6* and shown on *Figure 1*.

Shrubs

3.2.2 A short section of *×Cupressocyparis leylandii* (Leyland Cypress) hedge is aligned along the northern site boundary with a longer stretch along the southern site boundary (*Target Note 3*). The northern stretch is managed to approximately 3 m high; that at *Target Note 3* is approximately 4-5 m high and is largely unmanaged.



The 'hedge' on the southern boundary (Target Note 3).

- 3.2.3 There is a small number of native and ornamental shrubs located mostly along the western boundary and towards the southeast corner. Most of these shrubs are young. There is a line of three or four mature *Corylus avellana* (Hazel) with several young Hazels at Target Note 2. Other young shrubs present at this location include *Prunus laurocerasus* (Cherry-laurel), *Rhus typhina* (Stag's-horn Sumach), *Berberis* sp. and one *Cotoneaster* sp.



The mature Hazels at Target Note 2.

Grassland

- 3.2.4 The survey site is dominated by amenity grassland that appears to be regularly managed as the sward is generally 0.03-0.1 m high (Target Note 4). There are no established tussocks. In places the sward is quite patchy with tall ruderals such as *Urtica dioica* (Common Nettle) and *Rumex obtusifolius* (Broad-leaved Dock) and bare soil. The sward includes abundant *Lolium perenne* (Perennial Rye-grass), *Holcus lanatus* (Yorkshire-fog), *Ranunculus repens* (Creeping Buttercup), frequent *Agrostis capillaris* (Common Bent), *Plantago lanceolata*

(Ribwort Plantain), *Trifolium repens* (White Clover), locally frequent *Festuca rubra* (Red Fescue), occasional *Ranunculus acris* (Meadow Buttercup), *Dactylis glomerata* (Cock's-foot), *Senecio jacobaea* (Common Ragwort), Broad-leaved Dock and *Hypochaeris radicata* (Cat's-ear).



The amenity grassland (*Target Note 4*) - above and below.



3.3 Species/ Species Groups

Badgers

- 3.3.1 No setts were recorded within the survey site. Opportunities for sett excavation within the survey site are limited to beneath the scrub and ornamental hedge along the southern boundary (*Target Notes 2 and 3*).

- 3.3.2 No evidence of Badger activity was recorded from the survey site. An animal breach was recorded beneath the boundary fence at *Target Note 1*. No evidence of use by Badgers was recorded and it did not appear to have been recently used by any animal. It may be used by dogs or cats. The grassland within the survey site provides habitat of moderate potential value for foraging.

Bats

- 3.3.3 There are no features within the survey site that provide potential roosting opportunities for bats.
- 3.3.4 The amenity grassland that characterises much of the survey site is likely to be of negligible potential value for foraging/ commuting bats. The shrubs along the southern boundary form a linear feature that extends to the east of the site boundary that may be of low potential value. The value of the survey site for bats may be limited by adjacent street lighting.

Great Crested Newts

- 3.3.5 There is no aquatic habitat within the survey site.
- 3.3.6 An initial review of the OS map 1:25, 000 scale and relevant internet-based mapping including aerial photography² 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.
- 3.3.7 There are a number of waterbodies within 250-500 m of the survey site many of which are known to have supported Great Crested Newts. Many of these are located within the SSSI/ SAC to the west and east, though a small number are within Vauxhall Industrial Estate to the south.
- 3.3.8 The survey site is largely characterised by frequently managed amenity grassland. This terrestrial habitat is of negligible/ low potential value for Great Crested Newts. Habitat features of greater potential value are largely limited to the line of shrubs along the southern boundary.

Reptiles

- 3.3.9 The frequently managed amenity grassland that characterises most of the survey site is unlikely to be of any potential value for reptiles. The narrow margin of unmanaged grassland along the edge of the shrubs at *Target Note 2* offers some limited opportunities for reptiles.

Birds

- 3.3.10 Six 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*) and Starling (*Sturnus vulgaris*) are priority species³. Neither of these species is likely to find nesting opportunities within the survey site. The survey site provides limited nesting opportunities for species of bird associated with shrubs.

² <https://www.google.co.uk/maps/place/Johnstown,+Wrexham/@53.0079954,-3.0498993,15z/data=!3m1!4b1!4m5!3m4!1s0x487ac7f616f04713:0xb56ea3741ff724e4!8m2!3d53.010368!4d-3.044433>

³ As defined in CIEEM (2017a).

Other Species

- 3.3.11 The survey site provides habitat of potential value for the Hedgehog (*Erinaceus europaeus*) as the amenity grassland may be used for foraging.

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 impacted by the proposed development.

4.2.2 It is understood that the proposed flats would be replacing two semi-detached bungalows (previously demolished). Due to the scale and extent of the proposal, habitat to be impacted within the proposed development site, distance to the Johnstown Newt Sites SAC/ Stryt Las a'r Hafod SSSI, the reasons for designation of this protected site and the low likelihood of Great Crested Newts accessing the proposed development site, no indirect impacts are currently anticipated. This conclusion should be confirmed with Natural Resources Wales (NRW).

Habitat

4.2.3 The survey site includes the following habitat resources:

- Amenity grassland;
- Native and ornamental shrubs; and
- Hard-standing.

4.2.4 Due to the size, quality and geographical location of the habitat resources listed above they are considered to be of no more than site value⁴.

4.2.5 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 virtually all of the existing vegetation/ habitat. The loss of this habitat would not result in any significant impacts.

4.2.6 It is recommended that if possible, the mature Hazels at *Target Note 2* are retained. Should this be possible, to avoid any possible inadvertent impacts, prior to the start of any preparatory or construction work, temporary tree protection should be installed around the Hazels at *Target Note 2*. 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

⁴ In accordance with CIEEM (2018).

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.

- 4.2.7 Soft landscaping around the proposed building 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), 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.
- 4.2.8 Should the Leyland Cypress hedge at *Target Note 3* be removed it should be replaced with a hedge of native species. It should be planted as a staggered, double row with five to six plants per metre. The species composition should include Hawthorn, Holly, Field-maple, Hazel and *Rosa canina* agg. (Dog-rose).
- 4.2.9 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.
- 4.2.10 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

- 4.2.11 No notable plants were recorded from the survey site.
- 4.2.12 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*⁵. *Section 14 (1)* covers spreading the species or transferring polluted ground material from one area to another.
- 4.2.13 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.
- 4.2.14 One species of plant listed on *Schedule 9* was recorded from the survey site: Cotoneaster. A single young Cotoneaster shrub was recorded at *Target Note 2*. Assuming that the Hazels are retained at this location as recommended then the Cotoneaster would not be impacted by the proposed development. As such there would be no particular implications.

Fauna

Badger

- 4.2.15 No setts were recorded within the survey site and opportunities for sett excavation within the survey site are very limited. No evidence of Badger activity was recorded from the survey

⁵ <http://www.nonnativespecies.org/index.cfm?pageid=67>

site. The amenity grassland is of moderate potential value for foraging. At present no impacts on Badgers or their habitats are predicted due to the proposal.

- 4.2.16 As no evidence of Badger activity was recorded no mitigation measures are proposed. If site clearance/ construction work is not implemented within 12 months of the Extended Phase 1 Habitat Survey then the site should be re-surveyed by a suitably qualified ecologist to check for any setts.

Bats

- 4.2.17 Most of the habitat within the proposed development site is considered to be of negligible potential value for foraging/ commuting bats. The shrubs along the southern boundary are of low potential value. It is recommended that a linear feature be retained/ planted along this boundary. 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.
- 4.2.18 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. The allotments to the east/ northeast should be kept as dark as possible. Measures to avoid/ minimise light spillage should include:
- 'Warm white' LED lamps should be used;
 - All luminaires should 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 habitat; and
 - Lighting near the allotments should be avoided/ limited.
- 4.2.19 Assuming that a sympathetic lighting arrangement is installed, no significant impact on potential foraging/ commuting resources close to the proposed development site is anticipated.

Great Crested Newts

- 4.2.20 The habitat within the proposed development site is generally considered to be of negligible/ low potential value for Great Crested Newts. There are no waterbodies within 250 m of the site but a number of waterbodies within 250-500 m of the site. Most of these waterbodies are located within the SSSI/ SAC and are known to have supported Great Crested Newts. The proposed development site is more-or-less surrounded by residential housing and there are no particular habitat linkages between the site and any of the surrounding waterbodies. However due to the number of waterbodies in the area, and the size of the Great Crested

Newt meta-population the potential for Great Crested Newts to access the site cannot be entirely ruled out, though the risk is considered to be negligible/ low.

- 4.2.21 Based on the above assessment and the extent of the proposed development it is considered appropriate at this site to adopt a non-licensed Reasonable Avoidance Measures (RAMs) approach. Should this be the case then mitigation would be implemented in accordance with a RAMs Method Statement (to be agreed with NRW). The inherent risk (to the proposed development) with using such an approach would be that should a Great Crested Newt be found at any time during the works then they would need to immediately cease and are unlikely to be able to re-commence until a 'disturbance' licence had been obtained. Other amphibians that may be found on the site can be removed during the implementation of the RAMs.
- 4.2.22 The proposed RAMs would include a Toolbox Talk by a suitably qualified ecologist that would outline the responsibility of individual contractors (with regards Great Crested Newts and other valued ecological resources). The Toolbox Talk would also explain the importance of the temporary protective fence as recommended above, and the reason why no access would be allowed beyond it.
- 4.2.23 Given the appropriate implementation of the RAMs and installation/ maintenance of the temporary protective fencing no significant impact on Great Crested Newts or their habitat is anticipated.

Reptiles

- 4.2.24 The habitat within the proposed development site is generally considered to be of negligible potential value for reptiles with some minor features of low value at most. Grass Snakes (*Natrix helvetica*) are known to be present in the Johnstown area. The potential for Grass Snakes to access the site cannot be entirely ruled out, though the risk is considered to be negligible/ low.
- 4.2.25 It is recommended that the RAMs Method Statement for Great Crested Newts will also incorporate appropriate actions/ procedures in the eventuality that any reptiles are found prior to or during the construction phase.
- 4.2.26 Given the appropriate implementation of the RAMs and installation/ maintenance of the temporary protective fencing no significant impact on reptiles or their habitat is anticipated.

Birds

- 4.2.27 The proposal may result in the loss of a small number of native and ornamental shrubs that could be used by nesting birds. Such nesting birds could include some species of conservation interest (e.g. Dunnock). The proposed tree and shrub/ hedge planting would offset the loss of these habitat features in the medium-term. It is also recommended that the Hazels at *Target Note 2* be retained. The proposal would not give rise to a significant impact on local bird populations.
- 4.2.28 The proposal presents an opportunity to enhance the site for a priority species known to be present in the area; the House Sparrow. Five nest-boxes specifically designed for this species (e.g. Vivara Pro Woodstone Single Chamber House Sparrow Nest-box⁶, Schwegler

6

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

Brick Box No.24⁷ or EcoSurv Sparrow⁸ nest-boxes) should be built into the new building ideally on north-east and or east elevations near planted shrubs/ trees. 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.

- 4.2.29 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.
- 4.2.30 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).
- 4.2.31 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/ scrub) 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.
- 4.2.32 If it is not possible to clear shrubs/ scrub 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

- 4.2.33 New garden fences can prevent Hedgehogs from accessing gardens and traversing across built-up areas. To facilitate access to the garden for Hedgehogs, if any boundary fences are replaced, they should either incorporate a gap of 13 cm (in height) beneath them or otherwise a hole measuring 13 cm by 13 cm⁹ should be cut into the base of the fence on each side of the garden. 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 Society¹⁰.
- 4.2.34 No significant impact on any other species of conservation interest is anticipated.

⁷ <http://www.nhbs.com/title/173236/schwegler-brick-nest-boxes>

⁸ <http://www.ecosurv.co.uk/product/bird-box-range>

⁹ <http://www.hedgehogstreet.org/pages/link-your-garden.html>

¹⁰ <https://www.britishhedgehogs.org.uk/shop/product/hedgehog-highway-sign/>

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 and some native and ornamental shrubs of no more than site value would be lost due to the proposed development.
- There are no locally notable plants within the proposed development site. One non-native invasive plant listed in *Schedule 9* was recorded from the proposed development site.
- Opportunities for sett excavation within the proposed development site are very limited. Potential foraging habitat is also limited. No particular impacts on Badgers are anticipated.
- The habitat within the proposed development site is of negligible or low potential value for foraging/ commuting bats.
- The habitat within the proposed development site is of negligible or low potential value for Great Crested Newts and for reptiles.
- Opportunities for breeding birds are very limited within the proposed development site and are associated with shrubs.

5.1.2 This report recommends the following avoidance/ mitigation measures:

- Temporary protective fencing should be installed to protect the Hazels at *Target Note 2*.
- The soft landscaping should include a small number of native trees/ shrubs. Should the Leyland Cypress hedge at *Target Note 3* be removed it should be replaced with a hedge of native species.
- General best practice measures should be implemented during the construction phase to avoid any indirect impacts on adjacent habitat.
- The Cotoneaster would be enclosed in the temporary fence and as such would not be impacted.
- A Badger survey should be undertaken if the development is not commenced within 12 months of this survey.
- Any external lighting provided as part of the proposed development should accord with best practice guidance to minimise impacts on foraging/ commuting bats and keep the allotments to the east as dark as possible.
- Non-licensed Reasonable Avoidance Measures should be implemented for Great Crested Newts and reptiles both prior to and during the construction phase.
- Site clearance works/ removal of shrubs 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 garden. These holes should be clearly identified.

5.1.3 This report recommends the following enhancement measure:

- Five nest-boxes for House Sparrows should be incorporated into the new building.

6 TARGET NOTES

Target Note 1. An animal breach beneath a fence. No evidence of use by Badger – could be used by dogs and or cats. No evidence of recent use.

Target Note 2. A line of three or four mature *Corylus avellana* (Hazel) with several young Hazels. Other young shrubs present include *Prunus laurocerasus* (Cherry-laurel), *Rhus typhina* (Stag's-horn Sumach), *Berberis* sp. and one *Cotoneaster* sp.

Target Note 3. An overgrown, largely unmanaged *Cupressocyparis leylandii* (Leyland Cypress) hedge to approximately 4-5 m high. Towards the adjacent house it has been cut to approximately 2 m high. *Corylus avellana* (Hazel) shrubs are occasional.

Target Note 4. Most of the plot is dominated by amenity grassland that appears to be regularly managed as the sward is generally 0.03-0.1 m high. There are no established tussocks. In places the sward is quite patchy with tall ruderals such as *Urtica dioica* (Common Nettle) and *Rumex obtusifolius* (Broad-leaved Dock) and bare soil. The sward includes abundant *Lolium perenne* (Perennial Ryegrass), *Holcus lanatus* (Yorkshire-fog), *Ranunculus repens* (Creeping Buttercup), frequent *Agrostis capillaris* (Common Bent), *Plantago lanceolata* (Ribwort Plantain), *Trifolium repens* (White Clover), locally frequent *Festuca rubra* (Red Fescue), occasional *Ranunculus acris* (Meadow Buttercup), *Dactylis glomerata* (Cock's-foot), *Senecio jacobaea* (Common Ragwort), *Rumex obtusifolius* (Broad-leaved Dock) and *Hypochaeris radicata* (Cat's-ear).

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8 DATA

Table 1 – Vascular plant species recorded within the survey site

Plant Species	
	<i>Geranium molle</i> (Dove's-foot Crane's-bill)
<i>Acer pseudoplatanus</i> (Sycamore)	<i>Geum urbanum</i> (Wood Aven)
<i>Berberis</i> sp.	<i>Hedera helix</i> agg. (Ivy)
<i>Corylus avellana</i> (Hazel)	<i>Hieracium</i> sp. (Hawkweed)
<i>Cotoneaster</i> sp.	<i>Holcus lanatus</i> (Yorkshire-fog)
<i>Crataegus monogyna</i> (Hawthorn)	<i>Hypericum androsaemum</i> (Tutsan)
× <i>Cupressocyparis leylandii</i> (Leyland Cypress)	<i>Hypochaeris radicata</i> (Cat's-ear)
<i>Fraxinus excelsior</i> (Ash)	<i>Lathyrus pratensis</i> (Meadow Vetchling)
<i>Ilex aquifolium</i> (Holly)	<i>Lolium perenne</i> (Perennial Rye-grass)
<i>Ligustrum ovalifolium</i> (Garden Privet)	<i>Lunaria annua</i> (Honesty)
<i>Mahonia</i> sp.	<i>Luzula campestris</i> (Field Woodrush)
<i>Prunus laurocerasus</i> (Cherry-laurel)	<i>Plantago lanceolata</i> (Ribwort Plantain)
<i>Rhus typhina</i> (Stag's-horn Sumach)	<i>Potentilla reptans</i> (Creeping Cinquefoil)
<i>Rosa canina</i> agg. (Dog-rose)	<i>Primula</i> sp.
	<i>Prunella vulgaris</i> (Selfheal)
<i>Achillea millefolium</i> (Yarrow)	<i>Ranunculus acris</i> (Meadow Buttercup)
<i>Agrostis capillaris</i> (Common Bent)	<i>Ranunculus repens</i> (Creeping Buttercup)
<i>Anagallis arvensis</i> (Scarlet Pimpernel)	<i>Rubus fruticosus</i> agg. (Bramble)
<i>Aquilegia vulgaris</i> (Columbine)	<i>Rumex crispus</i> (Curled Dock)
<i>Arrhenatherum elatius</i> (False Oat-grass)	<i>Rumex obtusifolius</i> (Broad-leaved Dock)
<i>Bellis perennis</i> (Daisy)	<i>Scorzoneroidea autumnalis</i> (Autumn Hawkbit)
<i>Campanula poscharskyana</i> (Trailing Bellflower)	<i>Senecio jacobaea</i> (Common Ragwort)
<i>Cerastium fontanum</i> (Common Mouse-ear)	<i>Senecio vulgaris</i> (Groundsel)
<i>Cerastium tomentosum</i> (Snow-in-summer)	<i>Sisymbrium officinale</i> (Hedge Mustard)
<i>Dactylis glomerata</i> (Cock's-foot)	<i>Sonchus asper</i> (Prickly Sowthistle)
<i>Elytrigia repens</i> (Common Couch)	<i>Sonchus oleraceus</i> (Smooth Sow-thistle)
<i>Epilobium montanum</i> (Broad-leaved Willowherb)	<i>Stellaria media</i> (Common Chickweed)
<i>Erysimum cheiri</i> (Wallflower)	<i>Taraxacum</i> sect. <i>Ruderalia</i> (Common Dandelion)
<i>Euphorbia helioscopia</i> (Sun Spurge)	<i>Trifolium pratense</i> (Red Clover)
<i>Euphorbia peplus</i> (Petty Spurge)	<i>Trifolium repens</i> (White Clover)
<i>Festuca rubra</i> (Red Fescue)	<i>Urtica dioica</i> (Common Nettle)
<i>Fuchsia</i> sp.	<i>Veronica persica</i> (Common Field-speedwell)
<i>Fumaria muralis</i> (Common Ramping-fumitory)	<i>Veronica serpyllifolia</i> (Thyme-leaved Speedwell)
<i>Galium aparine</i> (Cleavers)	<i>Vicia sativa</i> (Common Vetch)

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 Badger

- 9.2.1 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 Badger and Badger setts, and makes it a criminal offence 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.

9.3 Bats

- 9.3.1 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 42(1)*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the *CRoW Act 2000*).
- 9.3.2 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.
- 9.3.3 Several species of bat are included on *Section 7* of the *Environment Act 2016*.
- 9.3.4 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.

9.4 Great Crested Newt

- 9.4.1 Great Crested Newts are listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receive full protection under *Section 9*. The 1981 Act was amended by the *CRoW Act 2000* which further extends the protection. It is also listed on *Annexes II and IV* of the European Union Directive on Natural Habitats and Wild Fauna and Flora (*Council*

Directive 92/43/EEC), which is implemented in the UK by *The Conservation of Habitats and Species Regulations 2017*. It is included on *Schedule 2* of the Habitats Regulations which gives it full protection under *Regulation 42(1)*. The Great Crested Newt is therefore a so-called European Protected Species. The legislation applies to all life stages of the Great Crested Newt, including eggs, larvae, juveniles and adults.

9.4.2 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.

9.4.3 The Great Crested Newt is included on *Section 7* of the *Environment Act 2016*.

9.5 Reptiles

9.5.1 Viviparous Lizard, Grass Snake, Slow-worm and Adder are all listed under *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), in respect of *Section 9(5)* and part of *Section 9(1)*. This protection was extended by the *CRow Act 2000*.

9.5.2 Under the above legislation it is an offence to:

- intentionally or recklessly kill or injure any individual of such a species; or
- sell or attempt to sell any part of the species alive or dead.

9.5.3 All four of the above listed reptiles are included on *Section 7* of the *Environment Act 2016*.

9.6 Birds

9.6.1 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*.

9.6.2 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.

9.6.3 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.

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



marches ecology

**C439 Proposed Development, Heol Offa,
Johnstown, Wrexham – Preliminary
Ecological Appraisal**

**Figure 1 – Extended Phase 1 Habitat
Survey**

Drawn by: ME
Checked by: TK
Date: 01.12.20

Key

- ✕ Scattered scrub
- A Amenity grassland
- ✕ Scattered ornamental shrubs
- ⋯ Hard-standing
- Fence

— Survey site boundary

① Target Note