Land Adjacent the Piercefield, St Arvans
Chepstow

Preliminary Ecological Appraisal

August 2021

Quality Management	
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Contact Details

Aspect Ecology Ltd
Hardwick Business Park I Noral Way I Banbury I Oxfordshire OX16 2AF
t 01295 279721 e info@aspect-ecology.com
w www.aspect-ecology.com

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Executive Summary

i) **Introduction.** Aspect Ecology was commissioned in July 2021 by Marston's Estates to undertake a Preliminary Ecological Appraisal of Land Adjacent to The Piercefield, St Arvans, which is being promoted for residential development through Monmouthshire County Council's Call for Sites process.

ii) **Proposals.** The proposals are for development of the site to provide approx. 16 dwellings.

iii) **Survey.** The site was surveyed in August 2021 based on standard extended Phase 1 methodology. In addition, a general appraisal of faunal species was undertaken to record the potential presence of any protected, rare or notable species, with specific surveys conducted in respect of bats and Badger.

iv) **Ecological Designations.** The site itself is not subject to any statutory or non-statutory ecological designations. Subject to suitable mitigation, none of the ecological designations in the surrounding area are likely to be adversely affected by the proposals.

v) **Habitats.** The site is dominated by dense, unmanaged scrub of limited ecological value. The only features of ecological importance are the existing boundary hedgerows, which would be retained under the proposed development.

vi) **Protected Species.** The site offers opportunities for protected species, including bats, Badgers and birds. However, subject to the implementation of appropriate mitigation measures, all relevant faunal species would be protected.

vii) **Enhancements.** The proposals present the opportunity to secure a number of biodiversity benefits, including additional native tree and shrub planting, species-rich wetland habitat creation, new roosting opportunities for bats, and more diverse nesting habitats for birds.

viii) **Summary.** In summary, the proposals have sought to minimise impacts and subject to the implementation of appropriate avoidance, mitigation and compensation measures, it is unlikely that the proposals will result in significant harm to biodiversity. With respect to Monmouthshire County Council's ecological evaluation criteria, the site is evaluated as being of MEDIUM value as it is located reasonably close to several ecological designations, contains hedgerows (priority habitats) and protected species are reasonably likely to be found on site but unlikely to prevent development if appropriate mitigation and compensation is provided.

1 Introduction

1.1 Background and Proposals

1.1.1 Aspect Ecology was commissioned in July 2021 by Marston's Estates to undertake a Preliminary Ecological Appraisal of Land Adjacent to The Piercefield, St Arvans (hereafter referred to as 'the site'), centred at grid reference ST5185 9628. The site is being promoted for residential development through Monmouthshire County Council's Call for Sites process.

1.2 Site Overview

1.2.1 The site is located at the southern edge of the village of St Arvans, Monmouthshire. The site is bound to the north by buildings associated with St Arvans, namely residential dwellings and The Piercefield Public House. To the east, the site is bound by the A466 road which connects St Arvans to the town of Chepstow. The southern edge of the site is bound by a private access road, beyond which lies arable land, and the west of the site is bound by a tree line, beyond which lies an area of open space and a small number of residential dwellings.

1.2.2 The site itself largely comprises dense scrub with areas of tall ruderal and rough grassland. Hedgerows are present along the eastern and southern site boundaries. The west of the site is bound by a tree line and several scattered trees are present within the site itself and along the southern site boundary.

1.3 Purpose of the Report

1.3.1 This report documents the methods and findings of the baseline ecology surveys and desktop study carried out in order to establish the existing ecological interest of the site, and subsequently provides a preliminary appraisal of the likely ecological effects of the proposals. The importance of the habitats and species present is evaluated. Where necessary, avoidance, mitigation and compensation measures are proposed so as to safeguard any significant existing ecological interest within the site and where appropriate, opportunities for ecological enhancement are identified with reference to national conservation priorities and local Biodiversity Action Plans (BAPs).

2 Methodology

2.1 Desktop Study

2.1.1 In order to compile background information on the site and its immediate surroundings the following organisations were contacted in July 2021, with data requested on the basis of a search radius of 2km:

- Gloucestershire Centre for Environmental Records
- South East Wales Biological Records Centre

2.1.2 Where information has been received from the above organisation(s) this is reproduced on Plan 6292/ECO2, where appropriate.

2.1.3 Information on statutory designations was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC) database, which utilises data provided by Natural England, with an extended search radius (25km). In addition, the MAGIC database was searched to identify the known presence of any Priority Habitats within or adjacent the site.

2.1.4 In addition, the Woodland Trust database was searched for any records of ancient, veteran or notable trees within or adjacent to the site. Furthermore, the Monmouthshire Connectivity Assessment and Wales Environmental Information Portal were reviewed for any relevant background information.

2.2 Habitat Survey

2.2.1 The site was surveyed in August 2021 in order to ascertain the general ecological value of the land contained within the boundaries of the site and to identify the main habitats and ecological features present.

2.2.2 The site was surveyed based on standard Phase 1 Habitat Survey methodology[1], whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail through Phase 2 surveys. This method was extended, in line with the Guidelines for Preliminary Ecological Appraisal[2] to record details on the actual or potential presence of any notable or protected species or habitats.

2.2.3 Using the above method, the site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified. The nomenclature used for plant species is based on the Botanical Society for the British Isles (BSBI) Checklist.

2.3 Faunal Surveys

2.3.1 General faunal activity, such as mammals or birds observed visually or by call during the course of the surveys was recorded. Specific attention was also paid to the potential

1 Joint Nature Conservation Committee (2010, as amended) *'Handbook for Phase 1 habitat survey: A technique for environmental audit.'*

2 Chartered Institute for Ecology and Environmental Management (CIEEM) (2017) '*Guidelines for Preliminary Ecological Appraisal.*'

presence of any protected, rare or notable species, and specific consideration was given to bats, Badger and Dormice as described below.

Bats[3]

Visual Inspection Surveys

2.3.2 **Trees**. Trees were assessed for their suitability to support roosting bats based on the presence of features such as holes, cracks, splits or loose bark. Suitability for roosting bats was rated based on relevant guidance[4] as:

- Negligible;
- Low;
- Moderate; or
- High.

2.3.3 Any potential roost features identified were also inspected for any signs indicating possible use by bats, e.g. staining, scratch marks, bat droppings, etc.

Activity Surveys

2.3.4 Automated static bat detector surveys are ongoing at the time of writing and the results will be available in due course.

Badger (*Meles meles*)[5]

2.3.5 A detailed Badger survey was carried out in August 2021. The survey comprised two main elements. The first element involved searching for evidence of Badger setts. For any setts that were encountered, each sett entrance was noted and mapped. The following information was recorded:

- Number and location of well used / active entrances; these are clear from any debris or vegetation and are obviously in regular use and may, or may not, have been excavated recently;
- Number and location of inactive entrances; these are not in regular use and have debris such as leaves and twigs in the entrance or have plants growing in or around the edge of the entrance; and
- Number of disused entrances; these have not been in use for some time, are partly or completely blocked and cannot be used without considerable clearance. If the entrance has been disused for some time all that may be visible is a depression in the ground where the hole used to be and the remains of the spoil heap.

2.3.6 The second element involved searching for signs of Badger activity such as well-worn paths and push-throughs, snagged hair, footprints, latrines and foraging signs, so as to build up a picture of any use of the site by Badger.

3 Surveys based on: English Nature (2004) '*Bat Mitigation Guidelines'* and Collins, J. (ed.) (2016) '*Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn).' Bat Conservation Trust

4 Collins, J. (ed.) (2016) '*Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn).' Bat Conservation Trust

5 Based on: Mammal Society (1989) '*Occasional Publication No. 9 – Surveying Badgers*'

Dormouse *(Muscardinus avellanarius)*[6]

2.3.7 Dormouse surveys are ongoing to establish the presence/absence of Dormouse within the site. Survey work is following the methodology set out within best practice guidance[6], whereby nesting tubes are attached to branches of trees and shrubs and checked on a regular basis for signs of use by Dormouse.

2.3.8 The guidance employs an indexation system to define survey effort, based on the number of tubes deployed and months over which these are in place and are checked for signs of use. Months in which use of nest tubes by Dormouse is more likely afford a higher number of points than months when there is a lower likelihood of use. The guidance recommends that determination of absence of Dormouse from a site should be based on a survey effort score of at least 20 points.

2.3.9 Accordingly, a total of 50 Dormouse nest tubes were deployed within the site. Nest tubes are to be checked every other month until a total survey effort score of 20 points or greater across the entire site is achieved, or until Dormice are encountered, whichever occurs first.

2.4 Survey Constraints and Limitations

2.4.1 All of the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent during different seasons. The Phase 1 habitat survey was undertaken within the optimal season therefore allowing a robust assessment of habitats and botanical interest across the site.

2.4.2 Attention was paid to the presence of any invasive species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). However, the detectability of such species varies due to a number of factors, e.g. time of year, site management, etc., and hence the absence of invasive species should not be assumed even if no such species were detected during the Phase 1 survey.

2.4.3 A recognised limitation of the bat activity surveys is that bat detectors can only provide an index of activity rather than absolute numbers of bats. Therefore, the results of the bat activity surveys should only be considered indicative of the amount of use bats make of an area rather than the abundance of bats. In addition, some bat species, e.g. Brown Long-eared Bat, are difficult to detect due to their quiet echolocation calls.

2.4.4 The dense scrub present over the majority of the site meant that undertaking a walked transect as part of the bat activity surveys was not physically possible. Three automated bat detectors have therefore been deployed at the site in order to bolster this element of the bat survey. Given the relatively small size of the site and as three automated static detectors are to be deployed, the lack of a walked activity survey is not considered to be a significant constraint to the overall assessment of the number of bat species as well as the general patterns of bat activity at the site.

[6] Based on: English Nature (2003) '*Surveying dormice using nest tubes: Results and experiences from the South West Dormouse Project',* English Nature (2006) '*The Dormouse Conservation Handbook'*, 2nd Edition;, English Nature Research Report No. 524; and Natural England (2011) '*Interim Natural England Advice Note – Dormouse surveys for mitigation licensing – best practice and common misconceptions'*, WML-537 (12/11)

2.5 Ecological Evaluation Methodology

2.5.1 The evaluation of ecological features and resources is based on professional judgement whilst also drawing on the latest available industry guidance and research. The approach taken in this report is based on that described by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017 - 2018)[7], which involves identifying 'important ecological features' within a defined geographical context (i.e. international, national, regional, county, district, local or site importance).

[7] CIEEM (2017) '*Guidelines for Preliminary Ecological Appraisal*' and CIEEM (2018) '*Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine*', ver. 1.1, Chartered Institute of Ecology and Environmental Management, Winchester

3 Ecological Designations

3.1 Statutory Designations

Description

3.1.1 The statutory designations of ecological importance that occur within the local area are shown on Plan 6292/ECO2. The nearest international statutory designation is Wye Valley Woodland Special Area of Conservation (SAC), located approximately 0.5km to the east of the site. The SAC is designated on the basis of being a mixed woodland dominated by Yew trees *Taxus baccata*, and also supports an important population of Lesser Horseshoe Bats (*Rhinolophus hipposideros*). The nearest component of the SAC is Pierce, Alcove and Piercefield Woods Site of Special Scientific Interest (SSSI).

3.1.2 In addition, several other designations of international importance are located within 2km of the site. The River Wye SSSI and SAC is located 0.7km to the east of the site and is designated on the basis of being a large, linear ecosystem which acts as an important wildlife corridor and essential migration route and key breeding area for many nationally and internationally important species.

3.1.3 Components of the Wye Valley and Forest of Dean Bat Sites SAC, designated on account of its important Greater and Lesser Horseshoe Bat populations, lies within the zone of influence of the site, with the Wye Valley Lesser Horseshoe Bat Site SSSI being the closest component located approx. 2.7km to the south-west. Several other international designations lie further afield, the closest being Severn Estuary SAC, SPA and Ramsar located approximately 4.8km to the east of the site.

Evaluation

3.1.4 The site itself is not subject to any statutory ecological designations. The Habitats Regulations Assessment of the Monmouthshire Local Development Plan Preferred Strategy (June 2021) identifies a range of potential impact pathways to nearby international designations, namely the Wye Valley Woodlands SAC, River Wye SAC, Wye Valley and Forest of Dean Bat Sites SAC and Severn Estuary SAC, SPA and Ramsar. These include atmospheric pollution (Wye Valley Woodlands and Severn Estuary), recreational pressure (Severn Estuary), loss of functionally-linked land (Wye Valley and FoD Bat Sites), and water quality, quantity, level and flow (River Wye SAC). These potential impact pathways are considered below:

- **atmospheric pollution -** it is understood that air quality modelling studies are proposed to support the Deposit Plan HRA. Nonetheless, given the nature and scale of the proposals (approx. 16 dwellings), significant atmospheric pollution effects are not anticipated.

- **recreational impacts** – significant recreational impacts are not anticipated from the proposals, albeit the site would be able to contribute to any Interim Avoidance Strategy that becomes available if deemed necessary.

- **functionally-linked land** – the site is <2ha and does not provide suitable habitat for any of the qualifying bird species associated with the Severn Estuary so no impacts are anticipated in this regard. The site lies within the core sustenance zone (2km) for Lesser Horseshoe Bats, however it is dominated by dense scrub therefore no adverse effects on SAC populations of this species are anticipated. The site also lies

within the 3km core sustenance zone of Greater Horseshoe Bats. The site does not include any permanent pasture, unimproved grassland or woodland and therefore is unlikely to be an important foraging resource for Greater Horseshoe Bats. The site includes relatively weak linear features in the form of a tree-line and two hedgerows, however these do potentially contribute to the local network of linear features in the surrounding countryside and may be used by GHBs to some degree. However, these features are to be retained, if not enhanced, under the proposals; therefore, no adverse effects on SAC populations of this species are anticipated.

- **water quality, quantity, level and flow** – subject to the proposals being able to feed into a suitable Wastewater Treatment Works and subject to any mitigation required in respect of phosphorous neutrality, no adverse effects on any international sites with respect to this impact pathway are anticipated.

3.1.5 In summary, for the reasons described above, at this stage no adverse effects on the integrity of any designations of international importance are anticipated as a result of the proposed development of the site.

3.2 Non-statutory Designations

Description

3.2.1 The non-statutory designations of nature conservation interest that occur within the local area are shown on Plan 6292/ECO2. The nearest non-statutory designation is Mistletoe Cottage Wildlife Site/Site of Interest for Nature Conservation (SINC) located approximately 0.5km to the north-east of the site. The Wildlife Site/SINC is designated on the basis of containing a mixture of habitats, including species-rich grassland and a pond. The next nearest non-statutory designation is Wyncliffe Wood Meadow Wildlife Site/SINC located approximately 0.6km to the north-east of the site.

Evaluation

3.2.2 The site itself is not subject to any non-statutory nature conservation designations. Several non-statutory designations are present within the local area however given the nature and scale of the proposals, no adverse effects on any of these designations are anticipated.

SINC Assessment

3.2.3 The site has been subject to a preliminary review against the South Wales SINC Criteria, as revised for Monmouthshire (January 2009). As set out in chapter 4, the site is dominated by scrubland. However, the site does not support structurally-diverse or species-rich scrub, nor does it support significant stands of gorse; therefore it does not satisfy the Scrub Communities criterion (H3). There are only two hedgerows present within the site and these do not form a closely interlinked network, therefore the site is unlikely to satisfy the Hedgerows criterion (H17). Survey work is ongoing, however based on a provisional assessment, the site is not anticipated to be subject to significant use by protected species, therefore based on currently available information it is unlikely to satisfy any of the species criteria. This will need to be revisited upon completion of the ongoing survey work.

3.3 Priority Habitats, Ancient Woodland and Notable Trees

3.3.1 There are no records of any notable or veteran trees, or ancient woodland, or any Priority Habitats within or adjacent the site.

3.4 Ecological Connectivity Assessment

3.4.1 A review of the Monmouthshire Connectivity Assessment (Chepstow, Settlement 7) confirms that the site is not identified as having any existing habitat connectivity value.

3.5 Summary

3.5.1 In summary, the site itself is not subject to any statutory or non-statutory ecological designations and, subject to the implementation of appropriate mitigation measures, it is unlikely that any such designations in the surrounding area will be significantly affected by the proposals.

4 Habitats and Ecological Features

4.1 Overview

4.1.1 The habitats and ecological features present within the site are described below and evaluated in terms of whether they constitute an important ecological feature and their level of importance, taking into account the status of habitat types and the presence of rare plant communities or individual plant species of elevated interest. The likely effects of the proposals on the habitats and ecological features are then assessed. The value of habitats for the fauna they may support is considered separately in Chapter 5 below.

4.1.2 The following habitats/ecological features were identified within/adjacent to the site:

- Dense Scrub;
- Rough Grassland;
- Tall Ruderal;
- Hedgerow;
- Trees; and
- Invasive Species.

4.1.3 The locations of these habitat types and features are illustrated on Plan 6292/ECO3 and described in detail below.

4.2 Priority Habitats

4.2.1 The Environment (Wales) Act 2016 places duties on public bodies to have regard to the conservation of biodiversity in the exercise of their normal functions. In particular, Section 7 of the Environment (Wales) Act required the Welsh Ministers to publish a list of habitats which are of principal importance for conservation in Wales. This list is largely derived from the 'Priority Habitats' listed under the former UK Biodiversity Action Plan (BAP), which continue to be regarded as priority habitats under the subsequent country-level biodiversity strategies.

4.2.2 Of the habitats within the site, the hedgerows are considered to qualify as Priority Habitats and therefore constitute important ecological features. This is discussed further in the relevant habitat sections below.

4.3 Dense Scrub

Description and Evaluation

4.3.1 The majority of the site comprises uniformly dense Bramble scrub. Additional species present include Hazel *Corylus avellana*, Elder *Sambucus nigra*, Butterfly-bush *Buddleja davidii* and Blackthorn *Prunus spinosa*.

4.3.2 The scrub within the site comprises a low diversity of species which are common and widespread within both a local and national context. As such, the scrub is not considered to form an important ecological feature and the loss of a proportion of this habitat to the proposals would be of negligible ecological significance.

4.4 Tall Ruderal

Description

4.4.1 Areas of tall ruderal are present within the site, largely located at the east of the site. The tall ruderal areas comprise a relatively species-poor mix of common species including Ragwort *Senecio* sp., Willowherb *Epilobium* sp., Field Bindweed *Convolvulus arvensis*, Cleavers *Galium aparine*, Mugwort *Artemisia vulgaris*, Great Willowherb *Epilobium hirsutum*, Hogweed *Heracleum sphondylium*, Creeping Thistle *Cirsium arvense* and Bramble.

Evaluation

4.4.2 Tall ruderal is a common habitat type that readily re-colonises and comprises common and widespread species. The discrete areas of tall ruderal are therefore not considered to form an important ecological feature with any losses to this habitat to future development of the site being of negligible ecological significance.

4.5 Rough Grassland

Description

4.5.1 An area of rough grassland is present at the centre of the site with a sward height of approximately 0.5m. The grassland does not appear to be subject to frequent management and some areas support a sward height of approximately 1.5m. Species present include False Oat-grass *Arrhenatherum elatius*, Ragwort, Field Bindweed, Mugwort, Common Nettle *Urtica dioica*, Bird's-foot-trefoil *Lotus corniculatus*, Hogweed, Cleavers and Spear Thistle *Cirsium vulgare*.

Evaluation

4.5.2 Overall, the grassland supports a low diversity of common and widespread species and based on the type and abundance of species present it can be classified as species-poor grassland. Similar grassland is common within the local area and, as such, the grassland does not constitute an important ecological feature. The loss of grassland to the future proposals would therefore be of negligible ecological significance.

4.6 Hedgerow

Description

4.6.1 Two hedgerows are present within the site located at the eastern and southern site boundaries. The hedgerows are described in more detail in Table 4.1 below.

Table 4.1. Hedgerow descriptions.

No.	H	W	Woody species	Avg. per 30m*	Ground flora & climbers	Associated features	Comments (including structure / management)	Likely to qualify#
H1	2.5m	1m	Hawthorn, Field Maple, Hazel, Ash, Lime	≥5	F. Oat-grass, Common Nettle, Ivy	<10% gaps, ditch	Dense, recently faced managed	N
H2	14m	3-4m	Blackthorn, Field Maple, Goat Willow, Elm, Hazel, Holly, Hawthorn	≥6	Bramble, Cleavers, Lords-and-Ladies, C. Nettle, Hart's-tongue	<10% gaps	Generally dense, unmanaged	**Y**

Woody species (as listed under Schedule 3 of the Hedgerows Regulations 1997) and woodland ground flora species (as listed under Schedule 2 of the Hedgerows Regulations 1997) underlined, y = young, sm = semi-mature, m = mature, pv = possible veteran, B = bank, W = wall, br = bridleway, f/p = footpath, b/w = byway, (D) = dominant species
* estimated average number of woody species (as listed under Schedule 3 of the Hedgerows Regulations 1997) in any one 30m stretch
# likely to qualify – as 'important' under the wildlife and landscape criteria of the Hedgerows Regulations 1997

Evaluation

4.6.2 Both hedgerows are relatively substantial in size and dense in nature. From a preliminary appraisal, H1 and H2 are considered to be species-rich[8] and H2 it is likely to qualify as ecologically 'important' under the Hedgerows Regulations 1997, based on the number of woody species and associated features. Hedgerow H1 is unlikely to qualify as 'important' under the Hedgerows Regulations 1997. Both hedgerows are likely to qualify as a Priority Habitat based on the standard definition[9], which includes all hedgerows (>20m long and <5m wide) consisting predominantly (≥80%) of at least one native woody species. It has been estimated that approximately 84% of countryside hedgerows in GB qualify as a Priority Habitat under this definition.**Error! Bookmark not defined.**

4.6.3 On this basis, the hedgerows within the site constitute important ecological features although given the limited network present, are only of importance at the local level.

4.6.4 The proposals incorporate the retention of the vast majority of the hedgerows within the site, with a relatively small loss required to hedgerow H1 to facilitate site access and a minor loss to hedgerow H2 required to facilitate the construction of footpath connection. The proposals incorporate new planting which link with the existing hedgerows and aim to enhance the value of these features for biodiversity.

4.7 Trees

Description

4.7.1 A line of Lawson's Cypress *Chamaecyparis lawsoniana* forms the western site boundary (labelled TL1 on Plan 6292/ECO3). The line of trees is approximately 20m-25m tall, with the area beneath dominated by leaf litter. Scattered trees, predominantly young to semi-mature in age, are present within the site associated with the dense scrub. Species present include Oak *Quercus robur*, Pear *Pyrus communis*, Elder *Sambucus nigra*, Ash *Fraxinus excelsior* and Sycamore *Acer pseudoplatanus*.

Evaluation

4.7.2 The more mature trees recorded at the site are of some inherent ecological value. However, none of the trees within the site are considered to be approaching veteran or ancient status and as such they do not form important ecological features. Other trees are relatively small in size being young to semi-mature in nature such that they are currently of limited ecological interest and are equally not considered to form important ecological features.

4.7.3 The vast majority of the more mature trees within the site and adjacent to its boundaries are to be fully retained and would be protected under the proposals. New tree planting throughout the site would provide new opportunities for wildlife in the long term.

[8] i.e. five or more native woody species within a 30m length (or four or more in Northern England) – FEP Manual
[9] Based on: Biodiversity Reporting and Information Group (2011) '*UK Biodiversity Action Plan (BAP) Priority Habitat Descriptions'*, ed. Ant Maddock

4.8 Invasive Species

Description

4.8.1 Japanese Knotweed *Fallopia japonica* is present within the site, predominantly at the southern and eastern site corners, with a patch also present at the west of the site.

4.8.2 Japanese Knotweed is listed in the Wildlife and Countryside Act 1981 (as amended) under Schedule 9 Part II, which makes it an offence to cause it to grow in the wild. Japanese Knotweed is extremely invasive and can regenerate from the smallest fragments of rhizomes (roots) or above ground parts of the plant that may be broken off and transported to other locations. It forms stands with rhizomes reaching down into the soil up to two meters in depth and up to a distance of seven metres laterally out from the main stand.

Evaluation

4.8.3 Japanese Knotweed is of detrimental value at the site value. Development of the site would allow for the eradication of this species from the site thereby providing an enhancement to biodiversity.

4.9 Habitat Evaluation Summary

4.9.1 On the basis of the above, the following habitats within and adjacent to the site are considered to form important ecological features:

Table 4.2. Evaluation summary of habitats forming important ecological features.

Habitat	Level of Importance
Hedgerows	Local

4.9.2 Other habitats present within the site include dense scrub, rough grassland, tall ruderal and trees. However, these habitats do not form important ecological features.

5 Faunal Use of the Site

5.1 Overview

5.1.1 During the survey work, general observations were made of any faunal use of the site with specific attention paid to the potential presence of protected or notable species. Specific survey work was undertaken in respect of Badgers, bats, Dormouse, and reptiles with the results described below.

5.2 Priority Species

5.2.1 The Environment (Wales) Act 2016 places duties on public bodies to have regard to the conservation of biodiversity in the exercise of their normal functions. In particular, Section 7 of the Environment (Wales) Act required the Welsh Ministers to publish a list of species which are of principal importance for conservation in Wales. This list is largely derived from the 'Priority Species' listed under the former UK Biodiversity Action Plan (BAP), which continue to be regarded as priority species under the subsequent country-level biodiversity strategies.

5.3 Bats

5.3.1 **Legislation.** All British bats are classed as European Protected Species under the Conservation of Habitats and Species Regulations 2017 (as amended) and are also listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). As such, both bats and their roosts (breeding sites and resting places) receive full protection under the legislation. If proposed development work is likely to result in an offence a licence may need to be obtained from NRW which would be subject to appropriate measures to safeguard bats. Given all bats are protected species, they are considered to represent important ecological features. A number of bat species are also considered Section 7 Priority Species.

5.3.2 **Background Records.** No specific records of bats from within the site were returned from the desktop study. Three records for Bechstein's Bat *Myotis bechsteinii* were returned from the desktop study, located 700m to the east of the site and dated from 2014. Information received from the LRC returned records of Greater Horseshoe Bat *Rhinolophus ferrumequinum*, Lesser Horseshoe Bat *Rhinolophus hipposideros*, Brown Long-eared Bat *Plecotus auritus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Common Pipistrelle *Pipistrellus pipistrellus*, Noctule *Nyctalus noctula*, Serotine *Eptesicus serotinus*, Brandt's Bat *Myotis brandtii*, Daubenton's Bat *Myotis daubentonii*, Natterer's Bat *Myotis nattereri*, Western Barbastelle *Barbastella barbastellus*, Whiskered Bat *Myotis mystacinus* and Grey Long-eared Bat *Plecotus austriacus*, all located within 1km of the site. The closest record is for three records of Greater Horseshoe Bat located 270m to the south-east of the site, dated from 1985.

5.3.3 **Survey Results**

Visual Inspection Surveys

Trees

5.3.4 A number of semi-mature and mature trees are present on site. The results of the tree assessment work undertaken at the site are illustrated on Plan 6292/ECO3. A number of these trees had a dense covering of Ivy which may have obscured potential roosting features and in some instances was dense enough to provide a potential roosting feature in

its own right (i.e. tree T1). Overall, none of the trees within the site have any more than low potential for roosting bats.

Activity surveys (foraging /commuting)

5.3.5 Bat activity surveys are ongoing at the site. The habitats within the site provide some foraging and commuting opportunities for bats, particularly in the form of hedgerows and dense scrub.

5.3.6 **Evaluation and Assessment of Likely Effects**

Roosting

Trees

5.3.7 Tree T1 with low potential to support roosting bats is likely to be lost to facilitate the construction of a swale. It is understood that the vast majority of the other trees within the site, including other trees with low potential to support roosting bats, are to be retained under the proposals. As such, subject to the implementation of best practice in relation to lighting and soft felling, it is considered that bats would be fully safeguarded under the proposals.

Foraging / Commuting

5.3.8 As noted above, the hedgerows and dense scrub within the site offer foraging/commuting habitat for bats, with ongoing surveys underway, with the aim of establishing the level of bat usage occurring at the site.

5.3.9 Nonetheless, the combination of habitat types within the site occurs relatively frequently in the surrounding area. The majority of the trees and both hedgerows within the site will be retained under the proposals, whilst new tree, hedgerow and shrub planting will improve connectivity through the site and increase the foraging potential of the site. In respect of Horseshoe Bats, the site is dominated by dense scrub, which is not typically favoured by Lesser Horseshoe Bats for foraging, and does not contain pasture, unimproved grassland or woodland favoured by Greater Horseshoe Bats.

5.3.10 Accordingly, it is considered that the conservation status of local bat populations is unlikely to be adversely affected by future development of the site. On the contrary, roosting and foraging opportunities for bats would improve under the proposed development.

5.4 Badgers

5.4.1 See confidential Appendix 6292/1. In summary, subject to suitable mitigation, development of the site is unlikely to significantly impact on Badgers.

5.5 Dormouse

5.5.1 **Legislation:** Dormouse is fully protected under the Wildlife and Countryside Act 1981 (as amended) and is a European Protected Species under the Conservation of Habitats and Species Regulations 2017 (as amended). Such legislation affords protection to individuals of the species and their breeding sites and places of rest. Dormouse is also a S7 Priority Species. On this basis, Dormouse is considered to form an important ecological feature.

5.5.2 **Background Records:** No specific records of Dormouse were returned from the desktop study from within or immediately adjacent to the study area. Data returned from the LRC

includes numerous records of Hazel Dormouse *Muscardinus avellanarius* within 2.9km of the site, with the closest record located 0.9km to the north-east of the site and dated from 2017.

5.5.3 **Survey Results & Evaluation:** The site provides opportunities for Dormouse, with the hedgerows and dense scrub providing suitable foraging and shelter habitat for this species, and specific Dormouse survey work is currently underway at the site. A substantial area of woodland is located approximately 0.5km east of the site, associated with the River Wye. The habitat within and adjacent to the site is, however, well removed from this woodland as well as other blocks of woodland to the west. Furthermore, barriers to Dormouse dispersal are present in the form roads as well as limited / gappy hedgerow connections. Notwithstanding the results of the presence / absence survey, it is therefore reasonably unlikely that this species is present within or adjacent to the site. The proposals require the removal of sections of scrub, hedgerows and trees but, considering the nature of the proposals and known distribution of Dormouse in the area, it is highly unlikely that the proposals would impact this species. The proposals also present the opportunity to provide enhanced habitat for this species, with the planting of new hedgerow lengths and native fruit and nut producing shrub species.

5.6 Other Mammals

5.6.1 **Legislation.** A number of other UK mammal species do not receive direct legislative protection relevant to development activities but may receive protection against acts of cruelty (e.g. under the Wild Mammals (Protection) Act 1996). In addition, a number of these mammal species are S7 Priority Species and should be assessed as important ecological features.

5.6.2 **Background Records.** One record of Hedgehog *Erinaceus europaeus* was returned from the desktop study, dating from 2012 and located within the 100m x 100m OS grid square containing the eastern part of the site, albeit more specific information was not available that would allow the precise location of this record to be determined in relation to the site. One record for Wild Boar *Sus scrofa* was also returned from the desktop study, dating from 2014 and located within the 1km x 1km OS grid square encompassing the site, albeit again more specific information was not available that would allow the precise location of this record to be determined in relation to the site. No specific records of other mammals from within or adjacent to the site were returned from the desktop study.

5.6.3 **Survey Results and Evaluation.** No evidence of any other protected, rare or notable mammal species has been recorded within the site to date. Other mammal species likely to utilise the site, such as Fox *Vulpes vulpes*, remain common in both a local and national context, and as mentioned above do not receive specific legislative protection in a development context. As such, these species are not a material planning consideration and the loss of potential opportunities for these species to the proposals is of negligible significance.

5.6.4 The desktop study returned background records of Hedgehog within the surrounding area. Hedgehog is a Priority Species, albeit this species remains common and widespread in Wales. The site offers potential opportunities for this species, particularly in the form of areas of dense scrub throughout the site, although the habitats are unlikely to be of particular importance in a local context. Suitable areas of habitat would be retained under the proposals. In any event, abundant similar opportunities are present within the local area and there is no evidence to suggest the proposals will significantly affect local populations of this species.

5.7 Amphibians

5.7.1 **Legislation.** All British amphibian species receive a degree of protection under the Wildlife and Countryside Act 1981 (as amended). Great Crested Newt is protected under the Act and is also classed as a European Protected Species under the Conservation of Habitats and Species Regulations 2017 (as amended). As such, both Great Crested Newt and habitats utilised by this species are afforded protection. Great Crested Newt is also a S7 Priority Species, as are Common Toad *Bufo bufo*, Natterjack Toad *Epidalea calamita*. As such, these species should be assessed as important ecological features.

5.7.2 **Background Records.** No specific records of Great Crested Newt from within or adjacent to the site were returned from the desktop study. One record of Great Crested Newt was returned from the search area surrounding the site, located approximately 2.4km to the east of the site and dating from 1999. Two records of Common Frog *Rana temporaria* were returned from the search area surrounding the site, located 1.7km to the south-east of the site and dating from 2014.

5.7.3 **Survey Results, Evaluation and Assessment of Likely Effects.** There are no waterbodies within the site or within 250m[10] of the site. Suitable terrestrial habitat is present within the site including tall ruderal, scrub and rough grassland. However, due to the lack of nearby breeding habitat it is considered highly unlikely that Great Crested Newt will make use of the terrestrial habitats within the site. Overall, it is therefore considered that amphibian populations are unlikely to be affected by the proposals.

5.8 Reptiles

5.8.1 **Legislation**. All six species of British reptile are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), which protects individuals against intentional killing or injury. Sand Lizard *Lacerta agilis* and Smooth Snake *Coronella austriaca* receive additional protection under the Conservation of Habitats and Species Regulations 2017 (as amended). All six reptile species are also S7 Priority Species. As such, all reptile species should be assessed as important ecological features.

5.8.1 **Background Records.** Information returned from the LRC included one record for Grass Snake *Natrix natrix* located approximately 2.2km to the east of the site and dating from 2014.

5.8.2 **Survey Results and Evaluation**. The site provides suitable habitat for reptiles in the form of rough grassland and areas of dense scrub, although is relatively small in overall size (~1.1ha) and no background records for reptiles were returned from within or adjacent to the site. The presence of site-wide dense scrub makes a conventional survey using refugia virtually impossible. Nonetheless, given the habitats present the site is considered reasonably unlikely to support any significant populations of reptiles and suitable, if not enhanced, habitat will be available post-development.

5.9 Birds

5.9.1 **Legislation.** All wild birds and their nests receive protection under Section 1 of the Wildlife and Countryside Act 1981 (as amended) in respect of killing and injury, and their nests,

[10] 250m is the typical maximum migratory range of this species, see English Nature (2004) 'An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt Triturus cristatus'. English Nature Research Report 576

whilst being built or in use, cannot be taken, damaged or destroyed. Species included on Schedule 1 of the Act receive greater protection and are subject to special penalties.

5.9.2 **Conservation Status.** The conservation importance of British bird species is categorised based on a number of criteria including the level of threat to a species' population status[11]. Species are listed as Green, Amber or Red. Red Listed species are considered to be of the highest conservation concern being either globally threatened and or experiencing a high/rapid level of population decline (>50% over the past 25 years). A number of birds are also S7 Priority Species. Red and Amber listed species and priority species should be assessed as important ecological features.

5.9.3 **Background Records.** Information from the data search included records for several bird species in the vicinity of the site, including the Red Listed species Skylark *Alauda arvensis,* Curlew *Numenius arquata*, Bullfinch *Pyrrhula pyrrhula*, Herring Gull *Larus argentatus*, Golden Plover *Pluvialis apricaria*, Kestrel *Falco tinnunculus*, Lapwing *Vanellus vanellus*, Lesser Spotted Woodpecker *Dryobates minor*, Marsh Tit *Poecile palustris*, Mistle Thrush *Turdus viscivorus*, Song Thrush *Turdus philomelos*, Spotted Flycatcher *Muscicapa striata*, Starling *Sturnus vulgaris*, Wood Warbler *Phylloscopus trochilus* and Yellowhammer Emberiza citrinella*,* which are also all Priority Species*.* A single record of Starling and three records of Kestrel were returned for the 1kmx1km grid square containing the site but more precise location information pertaining to these records could not be found. None of the other records originate from within the site itself.

5.9.4 **Survey Results.** Several species of bird were observed within the site during the Phase 1 survey including: Wood Pigeon *Columba palumbus* and Blackbird *Turdus merula*.

5.9.5 **Evaluation.** Neither of the birds recorded at the site are listed as having any special conservation status. The habitats present are common in the surrounding area and there is no evidence to suggest the site is of elevated value at a local level for specially protected, priority or red list species. The proposals will result in the loss of scrub and several sections of hedgerow, and this could potentially affect any nesting birds that may be present at the time of works. Accordingly, safeguards in respect of nesting birds would need to be adhered to during development of the site.

5.10 Invertebrates

5.10.1 **Legislation.** A number of invertebrate species are listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). In addition, Large Blue Butterfly *Maculinea arion*, Fisher's Estuarine Moth *Gortyna borelii lunata* and Lesser Whirlpool Ram's-horn Snail *Anisus vorticulus* receive protection under the Conservation of Habitats and Species Regulations 2017 (as amended). A number of invertebrates are also S7 Priority Species. Where such species are present, they should be assessed as important ecological features.

5.10.2 **Background Records.** No specific records of invertebrates were returned from within or adjacent to the site. A number of records for the following priority species were returned from SEWBREC and GCER for the search area; August Thorn *Ennomos quercinaria*, Autumnal Rustic *Eugnorisma glareosa*, Blood-vein *Timandra comae*, Brindled Beauty *Lycia hirtaria*, Broom Moth *Ceramica pisi*, Broom-tip *Chesias rufata*, Buff Ermine *Spilosoma lutea*, Cinnabar *Tyria jacobaeae*, Dot Moth *Melanchra persicariae*, Drab Looper *Minoa murinata*, Dusky Brocade *Apamea remissa*, Dusky Thorn *Ennomos fuscantaria*, Ear Moth *Amphipoea*

[11] Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) *'Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and the Isle of Man'* British Birds *108*, pp.708-746

oculea, Feathered Gothic *Tholera decimalis*, Flounced Chestnut *Agrochola helvola*, Galium Carpet *Epirrhoe galiata*, Garden Dart *Euxoa nigricans*, Garden Tiger *Arctia caja*, Ghost Moth *Hepialus humuli*, Grass Rivulet *Perizoma albulata*, Grey Dagger *Acronita psi*, Knot Grass *Acronita rumicis*, Lackey *Malacosoma neustria*, Minor Shoulder-knot *Brachylomia viminalis*, Mouse moth *Amphypyra tragopoginis*, Mullein Wave *Scopula marginepunctata*, Oak Hook-tip *Watsonalla binaria*, Oak Lutestring *Cymatophorina diluta*, Pearl-bordered Fritillary *Boloria euphrosyne*, Pretty Chalk Carpet *Melanthia procellata*, Rosy Minor *Litoligia literosa*, Sallow *Cirrhia icteritia*, Scarce Hook-tip *Sabra harpagula*, September Thorn *Ennomos erosaria*, Shaded Broad-bar *Scotopteryx chenopodiata*, Shoulder-striped Wainscoat *Leucania comma*, Small Emerald *Hemistola chrysoprasaria*, Small Heath *Coenonympha pamphilus*, Small Phoenix *Ecliptopera silaceata*, Small Square-spot *Diarsia rubi*, Spinach *Eulithis mellinata*, White Admiral *Limenitis camilla*, White Ermine *Spilosoma lubricipeda* and White-letter Hairstreak *Satyrium w-album*, of which the closest records included several records for Buff Ermine and Small Phoenix, as well as singular records of Grey Dagger, Mullein Wave, Sallow and Small Square-spot moths, all located approximately1km north of the site and dated between 2015 and 2016.

5.10.3 **Survey Results and Evaluation.** No evidence for the presence of any protected, rare or notable invertebrate species was recorded within the site. The site is dominated by dense scrub and has hedgerows present on two boundaries which are likely to support only a limited diversity of invertebrates. The site otherwise contains relatively few micro-habitats that would typically indicate elevated potential for invertebrates[12], such as a variable topography with areas of vertical exposed soil, areas of species-rich semi-natural vegetation; variable vegetation structure with frequent patches of tussocks combined with short turf; free-draining light soils; walls with friable mortar or fibrous dung. Accordingly, given the habitat composition of the site and lack of adjacent sites designated for significant invertebrate interest, it is considered unlikely that the proposals will result in significant harm to any protected, rare or notable invertebrate populations, and the site is not considered likely to support an important invertebrate assemblage.

5.11 Summary

5.11.1 On the basis of the above, a summary of the evaluation of fauna is provided below:

Table 5.1. Evaluation summary of fauna forming important ecological features.

Species / Group	Supported by or associated with the site	Level of Importance
Bats – Roosting	Potential habitat in the form of trees	Site - Local
Bats – Foraging / Commuting	Confirmed presence on site	Likely Site - Local
Badger	Confirmed presence on site	Local
Dormouse	Suitable habitat present	Likely Site – Local if present
Reptiles	Suitable habitat present	Likely Site – Local if present
Birds	Suitable habitat present	Likely Site – Local if present

12 Natural England (2010) 'Higher Level Stewardship – Farm Environment Plan (FEP) Manual', 3rd Edition

6 Mitigation Measures and Biodiversity Opportunities

6.1 Mitigation

6.1.1 Based on the habitats, ecological features and associated fauna identified within / adjacent to the site, the following mitigation measures would need to be implemented under the proposals. Further, detailed mitigation strategies or method statements can be secured following completion of ongoing surveys through planning.

Hedgerows and Trees

6.1.2 **MM1 – Hedgerow and Tree Protection.** All hedgerows and trees to be retained within the proposed development shall be protected during construction in line with standard arboriculturalist best practice (BS5837:2012) or as otherwise directed by a suitably competent arboriculturalist. This will involve the use of protective fencing or other methods appropriate to safeguard the root protection areas of retained trees / hedgerows.

Pollution Prevention

6.1.3 **MM2 – Pollution Prevention.** In order to safeguard the ground water an any hydrologically connected receptors against any potential run-off or pollution events during construction, the following safeguards will be implemented:

- Storage areas for chemicals, fuels, etc. will be sited on an impervious base within an oil-tight bund with no drainage outlet. Spill kits with sand, earth or commercial products approved for the stored materials shall be kept close to storage areas for use in case of spillages;
- Where possible, and with prior agreement of the sewage undertaker, silty water should be disposed of to the foul sewer or via another suitable form of disposal, e.g. tanker off-site;
- Water washing of vehicles, particularly those carrying fresh concrete and cement, mixing plant, etc. will be carried out in a contained area to avoid ground contamination; and
- Refuelling of plant will take place in a designated area, on an impermeable surface.

6.1.4 Post-development, the drainage system for the development will ensure any hydrologically connected receptors are not subject to adverse changes in surface water run-off or quality.

Bats

6.1.5 **MM3 – Felling of Trees Supporting Bat Roosting Potential.** Tree T1, which would be lost to the proposals, has been identified as providing low potential for roosting bats. Felling of this tree will therefore be undertaken under an ecological watching brief, and will be carried out using the 'soft-felling' technique, whereby sections of the tree will be cut and lowered to the ground, followed by leaving the felled sections on the ground for a period of at least 24 hours to allow any bats, should these be present, to escape.

6.1.6 If any evidence for the presence of roosting bats is recorded, works on that tree will be suspended and consideration will be given to the need to undertake works under a European Protected Species (EPS) development licence, and a licence application will be made to NRW as required.

6.1.7 **MM4 – Sensitive Lighting.** Light-spill onto retained and newly created habitat, in particular the retained hedgerows will be minimised in accordance with good practice guidance[13] to reduce potential impacts on light-sensitive bats (and other nocturnal fauna). This may be achieved through the implementation of a sensitively designed lighting strategy, with consideration given to the following key factors:

- **Light exclusion zones –** ideally no lighting should be used in areas likely to be used by bats. Light exclusion zones or 'dark buffers' may be used to provide interconnected areas free of artificial illumination to allow bats to move around the site;
- **Appropriate luminaire specifications** – consideration should be given to the type of luminaires used, in particular luminaries should lack UV elements and metal halide and fluorescent sources should be avoided in preference for LED luminaries. A warm white spectrum (ideally <2,700K) should be adopted to reduce the blue light component;
- **Light barriers / screening –** new planting (e.g. hedgerows and trees) or fences, walls and buildings can be strategically positioned to reduce light spill;
- **Spacing and height of lighting units –** increasing spacing between lighting units will minimise the area illuminated and allow bats to fly in the dark refuges between lights. Reducing the height of lighting will also help decrease the volume of illuminated space and give bats a chance to fly over lighting units (providing the light does not spill above the vertical plane). Low level lighting options should be considered for any parking areas and pedestrian / cycle routes, e.g. bollard lighting, handrail lighting or LED footpath lighting;
- **Light intensity –** light intensity (i.e. lux levels) should be kept as low as possible to reduce the overall amount and spread of illumination;
- **Directionality –** to avoid light spill lighting should be directed only to where it is needed. Particular attention should be paid to avoid the upward spread of light so as to minimise trespass and sky glow;
- **Dimming and part-night lighting –** lighting control management systems can be used, which involves switching off/dimming lights for periods during the night, for example when human activity is generally low (e.g. 12.30 – 5.30am). The use of such control systems may be particularly beneficial during the active bat season (April to October). Motion sensors can also be used to limit the time lighting is operational.

<u>Badger</u>

6.1.8 **MM5 – Badger Construction Safeguards.** In order to safeguard Badger should they enter the site during construction works, the following measures will be implemented:

- Any trenches or excavations within the site that are to be left open overnight will be provided with a means of escape should a Badger enter. This could simply be in the form of a gently graded ramp or roughened plank of wood placed in the trench as a ramp to the surface. This is particularly important if the trench fills with water;

[13] Bat Conservation Trust and Institute of Lighting Professionals (2018) '*Guidance Note 08/18: Bats and artificial lighting in the UK*'; Stone, E.L. (2013) '*Bats and lighting: Overview of current evidence and mitigation guidance*.'; ILP (2011) '*Guidance notes for the reduction of obtrusive light*' Institution of Lighting Professionals, GN01:2011.

- Any temporarily exposed open pipes (>150mm outside diameter) should be blanked off at the end of each working day so as to prevent Badgers gaining access as may happen when contractors are off-site;
- Any trenches/pits will be inspected each morning to ensure no Badgers have become trapped overnight. Should a Badger become trapped in a trench it will likely attempt to dig itself into the side of the trench, forming a temporary sett. Should a trapped Badger be encountered a suitably qualified ecologist will be contacted immediately for further advice;
- The storage of topsoil or other 'soft' building materials in the site will be given careful consideration. Badgers will readily adopt such mounds as setts. So as to avoid the adoption of any mounds, these will be kept to a minimum and any essential mounds subject to daily inspections with consideration given to temporarily fencing any such mounds to exclude Badgers;
- The storage of any chemicals at the site will be contained in such a way that they cannot be accessed or knocked over by any roaming Badgers;
- Fires will only be lit in secure compounds away from areas of Badger activity and not allowed to remain lit during the night; and
- Unsecured food and litter will not be left within the working area overnight.

6.1.9 **MM6 – Badger Update Survey.** Badgers are dynamic animals and levels of Badger activity can rapidly change at a site, with new setts being created at any time. Given the known presence of Badger setts in the area it is recommended that an update survey is carried out prior to commencement of site works in order to confirm the current status of Badgers at the site.

Hedgehogs

6.1.10 **MM7 – Hedgehog Safeguards.** In order to safeguard Hedgehogs and other small mammals should they enter the site during construction works, the following measures will be implemented:

- A watching brief should be maintained for Hedgehog and other small mammals throughout any clearance works;
- Any piles of material already present on site, particularly vegetation/leaves, etc. and any areas of dense scrub or hedgerows, shall be dismantled/removed by hand and checked for Hedgehog prior to the use of any machinery/disposal;
- Any material to be disposed of by burning, particularly waste from vegetation clearance and tree works, should not be left piled on site for more than 24 hours in order to minimise the risk of Hedgehogs occupying the pile. If this cannot be avoided, material should be stored within a container such as a skip to prevent animals from gaining access. Any material which has been stored on the ground overnight should be moved prior to burning to allow a thorough check for any animals which may have been occupying the pile;
- In the event that an injured Hedgehog is found, the animal should be wrapped carefully in a towel, the British Hedgehog Preservation Society (BHPS) phoned (01584 890 801) and the Hedgehog taken to a local vet immediately;
- To maintain connectivity throughout the site for Hedgehog and to allow access to suitable foraging habitat contained within residential gardens, small holes (13cmx13cm) should be created within garden fences or under gates.

Reptiles

6.1.11 **MM8 – Destructive Search.** As a precautionary measure to minimise the risk of harm to reptiles, a destructive search is proposed. The destructive search will involve cutting the grassland within the development footprint to a short height (~15cm) so as to encourage reptiles to disperse to suitable areas of retained/nearby habitat, whilst also allowing for a fingertip search of the area. This exercise should be carried out under the supervision of a competent ecologist during the active reptile season where practicable (generally March/April to September/October, depending on prevailing weather). Any potential refuge features, e.g. piles of rubble, heavy logs, brash piles, will be fingertip-searched by an ecologist prior to being carefully disassembled. Any reptiles encountered during the destructive search will be carefully rescued by the supervising ecologist and relocated to suitable nearby habitat.

Nesting Birds

6.1.12 **MM9** – **Timing of Works.** To avoid a potential offence under the relevant legislation, no clearance of suitable vegetation should be undertaken during the bird-nesting season (1st March to 31st August inclusive). If this is not practicable, any potential nesting habitat to be removed should first be checked by a competent ecologist in order to determine the location of any active nests. Any active nests identified would then need to be cordoned off (minimum 5m buffer) and protected until the end of the nesting season or until the birds have fledged. These checking surveys would need to be carried out no more than three days in advance of vegetation clearance.

Invasive Species

6.1.13 **MM10 – Invasive Species Safeguards.** Japanese Knotweed, which is listed on Schedule 9 Part II of the Wildlife and Countryside Act 1981, was recorded within the site. It is an offence to cause to grow in the wild, any plant listed on the schedule. As such, all relevant precautions should be taken when carrying out actions that could potentially spread these plants. The government has set out guidance on what can be considered 'causing to grow in the wild' within a response to the Schedule 9 review which states:

"We would expect that where plants listed in Schedule 9 are grown in private gardens, amenity areas etc., reasonable measures will be taken to confine them to the cultivated area so as to prevent their spreading to the wider environment and beyond the landowner's control. It is our view that any failure to do so, which in turn results in the plant spreading to the wild, could be considered as 'causing to grow in the wild' and as such would constitute an offence…Additionally, negligent or reckless behaviour such as inappropriate disposal of garden waste, where this results in Schedule 9 species becoming established in the wild would also constitute an offence."

6.1.14 As such, it is recommended that appropriate safeguards be put in place to prevent the spread of the Schedule 9 species during the proposed development works. Such measures would likely involve herbicide application and/or excavation and removal of any material within the site itself (which should then be disposed of appropriately to prevent colonisation of off-site areas).

6.2 Biodiversity Opportunities

6.2.1 Through implementation of the following ecological enhancements, the opportunity exists for the proposals to deliver a number of biodiversity enhancements at the site.

Habitat Creation

6.2.2 **EE1 – New Planting.** It is recommended that where practicable, new planting within the site be comprised of native species of local provenance, including trees and shrubs appropriate to the local area. Suitable species for inclusion within the planting could include native trees such as Oak, Birch *Betula pendula* and Field Maple, whilst native shrub species of particular benefit would likely include fruit and nut bearing species which would provide additional food for wildlife, such as Blackthorn, Hawthorn, Crab Apple *Malus sylvestris*, Hazel *Corylus avellana* and Elder. Where non-native species are proposed, these should include species of value to wildlife, such as varieties listed on the RHS' 'Plants for Pollinators' database, providing a nectar source for bees and other pollinating insects.

6.2.3 **EE2 – Wildflower Grassland.** It is recommended that areas of wildflower grassland are created within the site such that, in combination with new native landscape planting, opportunities for biodiversity will be maximised under the proposals. Consideration should be given to the laying of wildflower turfs, comprising locally appropriate native species, to establish wildflower grassland. This would ensure rapid establishment of these habitats, and reduce the timeframe for delivering the range of ecological benefits that are proposed.

6.2.4 **EE3 – Wetland Features.** The opportunity exists under the proposals to create new wetland habitats that will provide a range of opportunities for wildlife. It is recommended that the potential to create ponds or other wetland habitats in conjunction with the Sustainable Drainage Systems (SuDS) under the proposals be given due consideration. Creation of such habitats would provide opportunities for a range of wildlife while also helping to attenuate surface water run-off.

Bats

6.2.5 **EE4 - Bat Boxes.** A number of bat boxes will be incorporated within the proposed development. The provision of bat boxes will provide new roosting opportunities for bats in the area, such as Soprano Pipistrelle, a national Priority Species. So as to maximise their potential use, the bat boxes should ideally be situated on suitable retained trees, erected as high up as possible and sited in sheltered wind-free areas that are exposed to the sun for part of the day, facing a south-east, south or south-westerly direction. In addition, where architectural design allows, a number of integrated bat boxes / roost features should be incorporated into a proportion of the new build. The precise number and locations of boxes / roost features should be determined by a competent ecologist, post-planning once the relevant final development design details have been approved.

Hedgehog

6.2.6 **EE5 – Hedgehog Nest Domes.** It is recommended that Hedgehog nest domes be installed within sheltered areas, such as the existing or newly created hedgerows to provide suitable nesting and hibernation sites for this species. The Hedgehog nest domes should be positioned out of direct sunlight, in areas of dense vegetation.

Birds

6.2.7 **EE6 - Bird Boxes**. A number of bird nesting boxes are to be incorporated within the proposed development, thereby increasing nesting opportunities for birds at the site. Ideally, the bird boxes will have greater potential for use if sited on suitable, retained trees, situated as high up as possible. The precise number and locations of boxes should be determined by a competent ecologist, post-planning once the relevant final development design details have been approved.

Invertebrates

6.2.8 **EE7 – Habitat Piles.** A proportion of any deadwood / brash arising from vegetation clearance works should be retained within the site in a number of wood piles located within areas of new planting, new wetland habitats or areas of wildflower grassland in order to provide potential habitat opportunities for invertebrate species, which in turn could provide a prey source for a range of other wildlife. In addition, the provision and management of new native landscape planting will likely provide additional opportunities for invertebrates at the site in the long term.

6.2.9 **EE8 – Bee Bricks.** It is recommended that a number of bee bricks be incorporated within the proposed development thereby increasing nesting opportunities for declining populations of non-swarming solitary bee populations. Ideally, bee bricks should be located within suitable south-facing walls (where architectural design allows), located at least 1m off the ground. The bricks should be unobstructed by vegetation, though within close vicinity of nectar and pollen sources.

7 Conclusions

7.1 Aspect Ecology has carried out a Preliminary Ecological Appraisal of the proposed development, based on the results of a desktop study, Phase 1 habitat survey and a number of detailed protected species surveys.

7.2 The available information confirms that no statutory or non-statutory nature conservation designations are present within or adjacent to the site, and none of the designations within the surrounding area are likely to be adversely affected by the proposals.

7.3 The Phase 1 habitat survey has established that the site is dominated by habitats that are not important ecological features, whilst the proposals have sought to retain those features identified to be of value. Where it has not been practicable to avoid loss of habitats, new habitat creation has been proposed to offset losses, in conjunction with the landscape proposals.

7.4 The habitats within the site support several protected species, including species protected under both national and European legislation. Accordingly, a number of mitigation measures have been proposed to minimise the risk of harm to protected species, with compensatory measures proposed, where appropriate, in order to maintain the conservation status of local populations.

7.5 In conclusion, the proposals have sought to minimise impacts and subject to the implementation of appropriate avoidance, mitigation and compensation measures, it is considered unlikely that the proposals will result in significant harm to biodiversity. On the contrary, the opportunity exists to provide a number of biodiversity benefits as part of the proposals.

Plan 6292/ECO1:

Site Location

Key:

Site Location

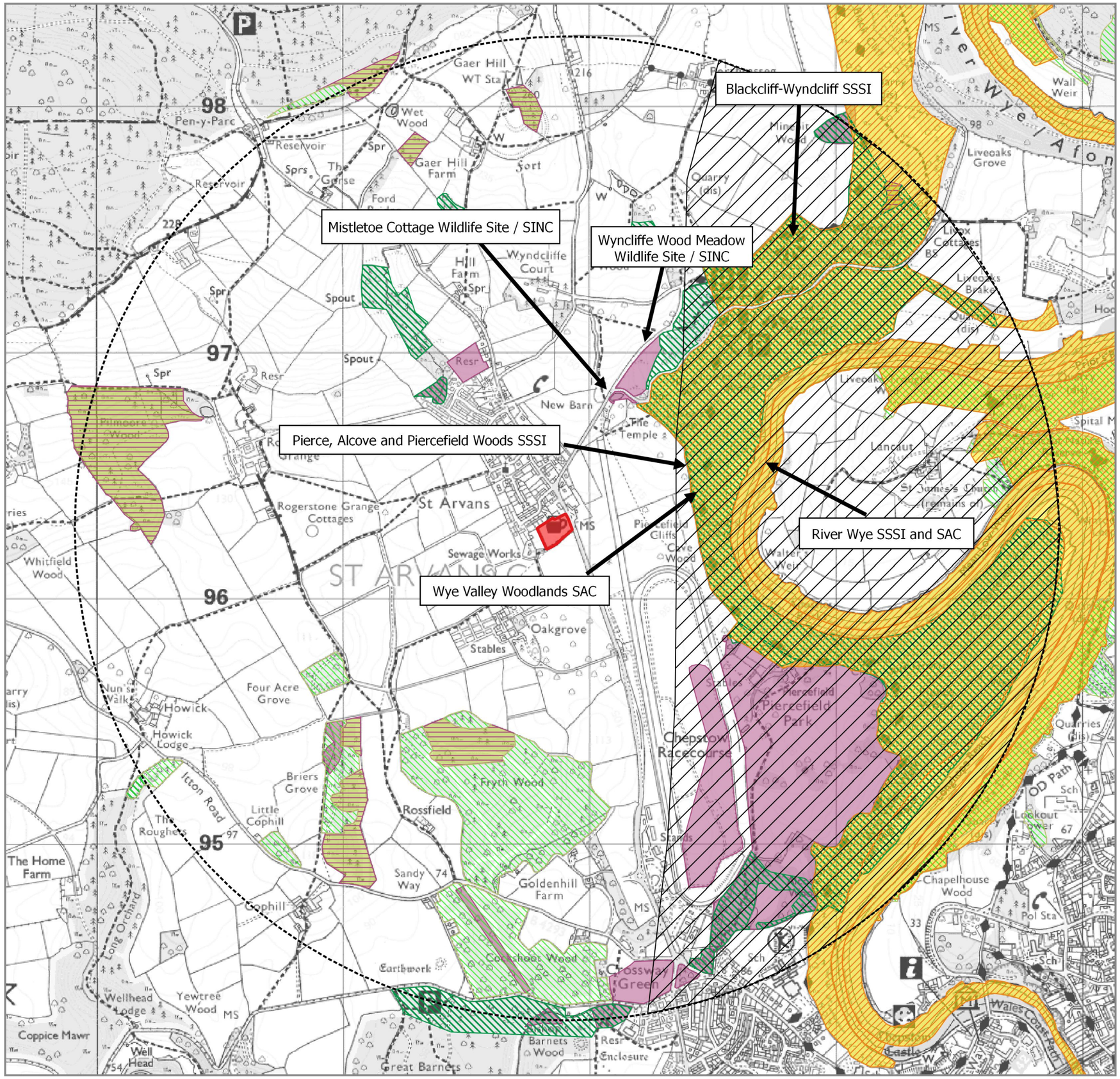
aspect ecology

Aspect Ecology Limited · West Court · Hardwick Business Park
Noral Way · Banbury · Oxfordshire · OX16 2AF
01295 279721 · info@aspect-ecology.com · www.aspect-ecology.com

Land Adjacent the Piercefield, St Arvans, Chepstow	PROJECT
Site Location	TITLE
6292/ECO1	DRAWING NO.
-	REV.
August 2021	DATE

Plan 6292/ECO2:

Ecological Designations



Key:

- Site Location
- 2km Buffer
- Coastal Saltmarsh (Priority Habitat)
- Site of Special Scientific Interest (SSSI)
- Special Area of Conservation (SAC)
- Local Wildlife Site/Site of Importance for Nature Conservation (SINC)
- Ancient Semi-natural Woodland
- Restored Ancient Woodland
- Planted Ancient Woodland Sites (PAWS)
- Plantation on Ancient Woodland Site (Priority Habitat)

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Land Adjacent The Piercefield PH, St Arvans, Chepstow	PROJECT
Ecological Designations	TITLE
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August 2021	DATE

Plan 6292/ECO3:

Habitats, Ecological Features

Key:

- Site Boundary
- Dense Scrub
- Tall Ruderal
- Rough Grassland
- Japanese Knotweed
- Hedgerow
- Tree Line
- Tree with Low Potential to Support Roosting Bats
- Tree

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Land Adjacent the Piercefield, St Arvans	PROJECT
Habitats and Ecological Features	TITLE
6292/ECO3	DRAWING NO.
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Appendix 6292/1:

Confidential Badger Appendix

ecology • landscape planning • arboriculture

aspect

Aspect Ecology Ltd
West Court
Hardwick Business Park
Noral Way
Banbury
Oxfordshire OX16 2AF

T: 01295 279721
E: info@aspect-ecology.com
W: www.aspect-ecology.com