



ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE



PRELIMINARY ECOLOGICAL APPRAISAL

WHITE GWENTHRIEW

Project name: White Gwenthriew, Sarn, Newtown, Powys,
SY16 4EQ

Grid Reference: SO19279037

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1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Planning permission will be sought for the conversion of a barn into residential accommodation at White Gwenthriew, Sarn.

Arbor Vitae were commissioned by Roger Parry and Partners to undertake a Preliminary Ecological Appraisal in order to assess the impact of the development on habitats and protected species.

1.2 SCOPE OF SURVEY

The survey is primarily designed to:

- Identify and record habitats and important ecological features on site;
- Evaluate the potential of the proposed development site to provide opportunities for protected species;
- Determine any likely impact which the development and landscape proposals may have on these.
- Identify opportunities for the enhancement of habitats and biodiversity features on site.

1.3 KEY PRINCIPLES

All ecological surveys conducted by Arbor Vitae Environment Ltd are underpinned by the following key principles, as outlined by CIEEM (2018):

Avoidance - Seek options that avoid harm to ecological features (for example, by locating on an alternative site).

Mitigation - Adverse effects should be avoided or minimized through mitigation measures, either through the design of the project or subsequent measures that can be guaranteed – for example, through a condition or planning obligation.

Compensation - Where there are significant residual adverse ecological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures.

Enhancements - Seek to provide net benefits for biodiversity over and above requirements for avoidance, mitigation or compensation.

2 SITE DESCRIPTION

2.1 LOCATION, LANDSCAPE, AND BACKGROUND

White Gwenthriew farm is located just off the A489 in Sarn, Newtown (Figure 1). The land surrounding the farm is largely improved agricultural grassland with mature native broadleaf trees and hedgerow at the periphery of the farm yard and buildings (Figure 2).

The proposals will involve converting the existing barn into several residential accommodation units. At present, a small section of the ground floor of the barn is in use as a workshop.

3 SURVEY METHODOLOGY

3.1 DESK STUDY

An initial desk study was composed to gain background information regarding any protected species or designations within the area. The main sources of information were MagicMap, Lle Geoportal and NBN Atlas.

3.2 SITE SURVEY

A site visit was made on 27/05/2021. The survey was carried out in accordance with CIEEM (2017) best practice guidelines. The objective of the survey was to find and record any signs of use by protected species and to note the habitat features present.

An assessment of the available habitats both on and adjacent to the site led to consideration of the potential of the site for the following protected species:

- Bats
- Breeding birds
- Great Crested Newt

The survey methodology was tailored to evaluate the area for these species in the following ways:

Bats

The objective of the survey was to find and record any signs of use by bats, for example:

- Droppings, sometimes in concentrations below roost sites,
- Feeding signs such as butterfly and moth wings,
- Staining of timber, brickwork around access points.

The general structure of the building was assessed for its potential to provide bats with roosting opportunities.

The site was assessed in terms of its suitability to support bat species. Hedgerow habitat and nearby potential habitat were assessed and recorded and potential impacts from the proposals considered.

Breeding birds

The site was assessed in terms of its suitability to support breeding bird populations. Hedgerow habitat and nearby potential habitat were assessed and recorded.

Great crested newts

Given that the proposals are minor and will impact upon the existing footprint and a small amount of amenity grassland, 250m was deemed an appropriate cut-off point.

A desk study and a ground search were conducted to search for any areas of open water within 250 metres. Waterbodies were then assessed based on the Habitat Suitability Index for great crested newts (Oldham et al., 2000 and ARG UK, 2010).

3.3 PERSONNEL

The survey was carried out by Phillipa Stirling MSc ACIEEM: Ecologist. NRW GCN licence number: S089109-1, NRW bat licence number: S089403-1.

3.4 CONSTRAINTS

There were no constraints to the survey being carried out successfully.

4 SURVEY RESULTS

4.1 DESK STUDY

The desk study found that within 1km of the site there were the following designations:

Name	Designation	Distance from site
Wood at Oak Cottage	Plantation on Ancient Woodland Site	0.9km
Sibwl Wood	Ancient Semi Natural Woodland Plantation on Ancient Woodland Site	0.8km
Wood at Little Cwmealr	Ancient Semi Natural Woodland	0.9km
The search included Ramsar, SSSI, SAC, SPA, LWS, NNR and LNR. ¹		

Results from the desk study revealed that within a 1km radius of the proposed development site the following protected species have been recorded:

Species	Distance	Protection
Great crested newt	0.9km	Habs Regs 2017 Wildlife and Countryside Act 1981.

4.2 HABITATS ON SITE

All habitats are classified using JNCC's Phase 1 Habitat Survey Handbook (JNCC, 2010).

Building

The barn on site is a mixture of materials and has been altered extensively over the years. The base of the barn is made up of blockwork and some brick infill. There is a lean-to extension at the north east facing elevation which is a blockwork structure with a tin roof.

The main part of the barn is timber framed with single skin timber board cladding to the elevations. There are two storeys within. The roof is corrugated tin resting on relatively modern timbers of planed wood. There are several sky lights within the roof which make the first floor well-lit. The ground floor is separated into several compartments most of

¹ SSSI: Site of Special Scientific Interest, SAC: Special Area of Conservation, SPA: Special Protection Area, LWS: Local Wildlife Site NNR: National Nature Reserve, LNR: Local Nature Reserve.

which are used for storage. One small area on the ground floor is a wood workshop using electrical machinery. This emits constant vibrations, noise and dust through the ground floor and above.

OS maps from 1886 indicate that a building has been present on site, covering part of the existing footprint. The barn has been altered significantly over the years and there does not appear to be any original features remaining. The barn is now at 90 degrees to where the original building was.

Hardstanding

The barn is surrounded by a mixture of stone chippings and bare earth.

4.3 ADJACENT HABITATS

Hedgerow/Mature trees

There is a row of mature trees to the south west which form the boundary of a field, presumably once managed as a hedgerow. Species within include oak, ash, hazel and hawthorn.

Improved grassland

The farmyard is immediately surrounded by improved grassland fields, used for grazing livestock.

Buildings

There is a farmhouse, a converted barn and two steel framed agricultural buildings on site in addition to the barn in question.

4.4 PROTECTED SPECIES

Bats

There was no evidence of bats found within the barn during the survey. The building is single skin throughout and there are no cavities or enclosed spaces. The building is well lit with natural daylight throughout and the timbers are relatively modern with no potential roosting features. The timber cladding is mostly tight-fitting and is not backed by any materials. Overall, the barn provides 'negligible' potential as a roosting site for bat species.

The adjacent farmhouse and mature trees may provide roosting sites for bat species and the tree corridors may provide commuting and foraging opportunities for bats in the landscape.

Breeding birds

There are swallows nesting within the barn and a total of seven nests were observed during the survey. Of these, three appeared to be active.

One Wren's nest was found inside a dis-used swallow nest on the ground floor.

Great Crested Newt

There are two records of GCN within 1km of the site. One record is from 1999 of a single GCN and one record is of a dead GCN from 2018. Both records are over 500m from the site.

Pond 1 provides 'poor' suitability as a breeding site for GCN according to the Habitat Suitability Index developed by Oldham *et al.* 2000. The pond sits 245m from the proposed barn conversion and the development would have no impact upon terrestrial habitats which might be used by GCN.

GCN HSI Calculator

		Pond Name	Pond 1
		Position	SO19029050
SI No	SI Description		
1	Geographic location	0.5	
2	Pond area	0.05	
3	Pond permanence	0.1	
4	Water quality	0.33	
5	Shade	1	
6	Water fowl effect	1	
7	Fish presence	1	
8	Pond Density	0.6	
9	Terrestrial habitat	0.33	
10	Macrophyte cover	0.3	
HSI Score		0.37	
Pond suitability (see below)		<i>Poor</i>	

5 POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

The proposed conversion will have no impact upon habitats of any ecological significance.

5.2 PROTECTED SPECIES ASSESSMENT

Bats

The barn provides 'negligible' potential as a bat roost and there was no evidence within to suggest that the building is in use by roosting bats.

Additional external lighting on site could disturb established flight lines and therefore mitigation will be needed.

Breeding birds

There are at least three pairs of swallows and one pair of wren's nesting within the barn to be converted. The conversion will result in the loss of nesting sites for these wild birds. Replacement nesting opportunities will need to be provided.

Great crested newt

The nearest pond sits at 245m from the site and provides 'poor' suitability as a breeding site, drying annually and representing a shallow hollow in an improved grassland field. The barn to be converted is surrounded by hardstanding and bare earth and the proposals will have no impact upon terrestrial habitats which might be used by GCN.

The conversion will have no impact upon GCN and no further survey work is required.

6 AVOIDANCE, MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

Habitat mitigation will not be necessary.

6.2 PROTECTED SPECIES MITIGATION

Bats

Any artificial lighting will be designed with nocturnal wildlife in mind. The following measures will be incorporated into lighting plans for the site:

- Hedgerows and key habitat features including mature trees on the site will not be illuminated in order to retain dark movement corridors for nocturnal wildlife. Illuminance along these features should be below 0.2 lux on the horizontal plane, and 0.4 lux on the vertical plane.
- Security lighting will be set on motion sensors with short timers (<1 minute) and should be LED lighting.
- External lights will be hooded and directed toward the ground to reduce upward light spill.
- A warm white spectrum will be adopted throughout the scheme to reduce blue light component (<2700Kelvin).
- Internal luminaires will be recessed where installed in proximity to windows to reduce glare and light spill. LED luminaires should be used internally where possible due to their sharp cut-off, lower intensity, and dimming capability.
- Luminaires will always be mounted horizontally with an upward light ratio of 0%.

Breeding birds

Three Woodcrete swallow cups will be placed into the adjacent open-front barn to the north-west. They will be placed at the gable end, no less than 5cm beneath the roof line.

One open front Woodcrete nest box will be placed into nearby vegetation for use by wrens.

Great crested newt

The proposals will have no impact upon GCN or terrestrial habitats which might be used by them and mitigation is not necessary.

6.3 ECOLOGICAL ENHANCEMENT

In order to enhance opportunities on site for protected species, the following measures will be implemented:

- Two Woodcrete bat boxes suitable for crevice dwelling species will be installed into nearby mature trees. The boxes will be at least 3m from ground level and have a clear flight path to the entrance point.

7 SUMMARY

Planning permission will be sought for the conversion of a barn into residential accommodation at White Gwenthrif, Sarn. Arbor Vitae were commissioned by Roger Parry and Partners to undertake a Preliminary Ecological Appraisal in order to assess the impact of the development on habitats and protected species.

The proposed conversion will have no impact upon habitats of any ecological significance.

The barn provides 'negligible' potential as a bat roost and there was no evidence within to suggest that the building is in use by roosting bats. Additional external lighting on site could disturb established flight lines and therefore mitigation will be needed.

There are at least three pairs of swallows and one pair of wren's nesting within the barn to be converted. The conversion will result in the loss of nesting sites for these wild birds. Three Woodcrete swallow cups will be placed into the adjacent open-front barn to the north-west. They will be placed at the gable end, no less than 5cm beneath the roof line. One open front Woodcrete nest box will be placed into nearby vegetation for use by wrens.

The nearest pond sits at 245m from the site and provides 'poor' suitability as a breeding site, drying annually and representing a shallow hollow in an improved grassland field. The barn to be converted is surrounding by hardstanding and bare earth and the proposals will have no impact

upon terrestrial habitats which might be used by GCN. The conversion will have no impact upon GCN and no further survey work is required.

Two Woodcrete bat boxes suitable for crevice dwelling species will be installed into nearby mature trees in order to enhance opportunities on site for protected species.

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FIGURE 1 LOCATION. 1:50,000



FIGURE 2 AERIAL PHOTOGRAPH



FIGURE 3 PONDS WITHIN 250M



Pond 1 sits at 245m from the site and provides 'poor' suitability as a breeding site for GCN.



APPENDIX 1 PHOTOGRAPHS



Upper floor of the barn. Tin sheets resting on a timber frame. Skylights along the length of the roof make the space light.



Lean-to extension at the north east facing elevation. Blockwork walls and tin roof.



North east facing roof and lean-to.



South west facing elevation.



Board cladding detail. The boards do not provide suitable crevices for roosting bats and are not attached to anything behind.



Pond 1.