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PRELIMINARY ECOLOGICAL APPRAISAL

CHETWYND GROVE

Arbor Vitae Environment Ltd, Lower Betton Farm, Cross Houses, Shrewsbury, Shropshire, SY5 6JD

Project name: **Chetwynd Grove, Bangor Road, Marchwiel, Wrexham, LL13 0TF**

Grid Reference: SJ37124720

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Prepared by: Phillipa Stirling BSc MSc ACIEEM

Reviewed by: William Prestwood BSc Director

Requested by: Base Architects

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1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Retrospective planning permission will be sought for a change of use of a dwelling to offices at Chetwynd Grange, Marchwiel.

Arbor Vitae were commissioned by Base Architects 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

Chetwynd Grove is located between Marchwiel and Cross Lanes in Wrexham. The property comprises a residential dwelling, and several commercial and agricultural structures. There is a car park and yard area in the centre, and the surrounding landscape seems to be agricultural grassland used for grazing and exercising horses.

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, Data Map Wales and NBN Atlas.

3.2 SITE SURVEY

A site visit was made on 13/05/2024. 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 newt

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. Natural Resources Wales bat licence number: S091037-1 and GCN licence number: S090921/1.

3.4 CONSTRAINTS

Given that the application is retrospective, the ecological assessment is limited to presenting the condition of the current building. Any conditions prior to change of use are essentially lost, and cannot be assessed.

4 SURVEY RESULTS

4.1 DESK STUDY

The desk study found that there are no statutorily designated sites within 1km of the search area. The search included Ramsar, SSSI, SAC, SPA, 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
Mammals		
Hedgehog	100m	s.41 NERC
Water vole	200m	Wildlife and Countryside Act 1981.

[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.

Common pipistrelle	300m	European Protected Species, Wildlife and Countryside Act 1981.
Birds		
Kingfisher Kestrel Redwing Fieldfare	300-1000m	Wildlife and Countryside Act 1981.
Reptiles		
Great crested newt	100m	European Protected Species, 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 structure which was surveyed is a former stable block, with planning permission for a residential conversion. The building is of brick construction with a pitched roof, covered by felt roofing tiles. The ridge is covered with clay tiles and internally the ceiling is boarded up to the rafters with no interior loft space. The portion of the building in use as an office has been fully fitted out internally. Two stable blocks remain in the building to the northern end. These both have boarded ceilings with timber tongue and groove panelling in place.

The roof overhangs the top of the wall plate and protruding rafters are visible. Each rafter has been cemented into place and this features only creates a small covered section, with no access into a crawl space or other voids. There is a small ventilation stack installed into the roof which consists of a small timber structure, with felt and clay roof tiles. Internal inspection of this feature was no possible but it is self-contained.

The floors are concrete throughout and alterations are limited to interior spaces. Externally the brickwork is in good condition and has been painted.

There is a small amount of ivy growth and a small rowan tree present on the north-west facing gable end and a few loose bricks on the corner of the south west wall.

Hardstanding

The building is surrounded entirely by either gravel or concrete hardstanding.

4.3 ADJACENT HABITATS

There are several other buildings present at the site including modern agricultural and traditional brick barns.

4.4 PROTECTED SPECIES

Bats

The exterior of the building does not appear to provide any potential roosting features which would be suitable for use by bats. The felt roofing tiles do not create any crevices or small voids which could be used, and the ridge tiles are cemented in place. Internally, the building has been 'fitted out' and is now entirely sealed.

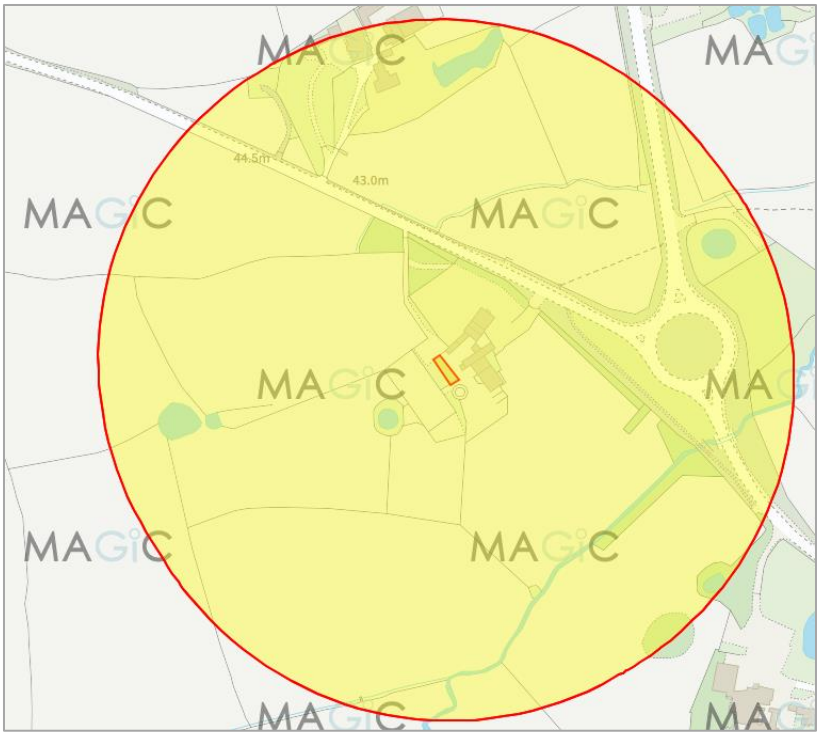
The adjacent stable blocks provide some interior potential roosting features e.g. between beams, but no evidence of bats was found inside these sections.

Breeding birds

There are at least 4x swallow nests within the adjacent retained stables.

Great Crested Newt

There are a total of 6 ponds mapped within 250m of the site. Of these, two are on the far side of a large road system. The pond to the south west of the yard has a record for GCN from 1992 and there are various records of this species within 250m, up to 2003.



5 POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

The habitats on site are limited to built features and hardstanding. The proposals do not appear to have impacted any ecologically significant habitat.

5.2 PROTECTED SPECIES ASSESSMENT

Bats

Given that the assessment is retrospective, it is impossible to report on the state of the building prior to its change of use. The retained stable sections give us some idea of what condition the building was in. Neither of the retained stables showed any evidence of bat presence, and externally, no potential roosting features were identified.

Any impact upon bat species is impossible to quantify at this stage, but given that no evidence of bats was found in the retained stable, this may suggest that no bats had been using the building prior to its change of use.

Opportunities for bats at the site will be required, to enhance habitats and roosting features present.

Breeding birds

Given that there are four swallow nests in the retained stable block, there could have been other swallow nests within the building which has been turned into an office. Mitigation is not possible at this stage but the opportunity will be taken to increase the number of nesting sites present.

Great crested newt

GCN have been recorded within 100m of the site but records date back to 2003 at the latest. These records are now over 20 years old but given the availability of ponds in the locality, and the known population of GCN within the area, it is reasonable to assume that at least some of the 6 ponds within 250m are inhabited by GCN.

However, the works carried out on site have taken place exclusively on areas of existing hardstanding, and the change of use relates solely to an existing building. It is therefore highly unlikely that GCN would have been impacted during the works to change the use of the building.

6 AVOIDANCE, MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

The buildings are of no intrinsic interest ecologically, other than for the species they support. No habitat mitigation is required.

6.2 PROTECTED SPECIES MITIGATION

Bats

As a precaution, a Wildlife Sensitive Lighting Plan will need to be retrospectively implemented, as follows:

- Any exterior security or decorative lights to be installed on the development site will be less than 3 m from the ground and fitted with hoods to direct the light below the horizontal plane, at an angle of less than seventy degrees from vertical, and shall not be fixed to, or directed at, bat boxes or gables or eaves.
- Security lighting will be set on motion sensors with short timers (<1 minute) and will be LED with a passive infrared trigger.
- 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 will 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

A minimum of four Woodcrete swallow cups will be installed into nearby buildings on site where they will be left undisturbed. There is a range of stables with a hayloft above which would be ideal for this purpose, see pictured in Appendix 1.

6.3.1 ECOLOGICAL ENHANCEMENT

Two Woodcrete general purpose bat boxes, suitable for crevice-dwelling species should be installed onto the external elevation of a nearby building. No lighting should be installed in the vicinity of the boxes. They should be at least 3m from the ground and face south or south west.

7 SUMMARY

Retrospective planning permission will be sought for a change of use of a dwelling to offices at Chetwynd Grange, Marchwiel. Arbor Vitae were commissioned by Base Architects to undertake a Preliminary Ecological Appraisal in order to assess the impact of the development on habitats and protected species.

Given that the application is retrospective, the ecological assessment is limited to presenting the condition of the current building. Any conditions prior to change of use are essentially lost, and cannot be assessed.

Any impact upon bat species is impossible to quantify at this stage, but given that no evidence of bats was found in the retained stable, this may suggest that no bats had been using the building prior to its change of use. Opportunities for bats at the site will be required, to enhance habitats and roosting features present. A Wildlife Sensitive Lighting Plan will be implemented retrospectively in order to protect the surrounding landscape from any effects of additional artificial lighting.

Given that there are four swallow nests in the retained stable block, there could have been other swallow nests within the building which has been turned into an office. Mitigation is not possible at this stage but the opportunity will be taken to increase the number of nesting sites present.

GCN have been recorded within 100m of the site but records date back to 2003 at the latest. These records are now over 20 years old but given the availability of ponds in the locality, and the known population of GCN within the area, it is reasonable to assume that at least some of the 6 ponds within 250m are inhabited by GCN.

However, the works carried out on site have taken place exclusively on areas of existing hardstanding, and the change of use relates solely to an existing building. It is therefore highly unlikely that GCN would have been impacted during the works to change the use of the building.

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FIGURE 1 LOCATION



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FIGURE 2 AERIAL PHOTOGRAPH



APPENDIX 1 PHOTOGRAPHS



East facing elevation



Interior of offices



Eaves overhang



Interior of retained stable



West elevation



Adjacent stables with hay loft. Proposed bat box location = ★ Swallow cups in open bay.