

PRELIMINARY ECOLOGICAL APPRAISAL

CWMAFAN

LLANAFAN FAWR

POWYS

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Report for Roger Parry and Partners

by

Arbor Vitae Environment Ltd

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ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE

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1 INTRODUCTION

1.1 BACKGROUND TO DEVELOPMENT

Arbor Vitae were commissioned to carry out a Preliminary Ecological Assessment of land at Cwmafan. This land will be the subject of a planning application for the erection of a poultry production unit and associated works.

Such operations have the potential to disturb protected species, if present, and therefore Arbor Vitae were commissioned by Roger Parry and Partners to undertake a Preliminary Ecological Appraisal.

This report presents the results of a field survey carried out on 11 October 2019

1.2 DETAILS OF PROPOSED WORKS

It is proposed to construct two new poultry houses to accommodate 100,000 broiler chickens. The buildings would have associated feed bins, hard-standing around the buildings and improved access through the existing farm yard.

1.3 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.

1.4 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

Cwmafan is a medium-sized stock farm in a relatively remote location approximately one kilometre south west of Llanafan Fawr. The holding lies in an elevated position at 260 metres AOD on an east facing slope with the land rising to the west to Lan Dwpa at a height of 378 m. Large areas of commercial forest lie to the north, north west and west of the farm, including the extensive Irfon Forest.

Much of the surrounding land is dominated by improved grassland.

3 SURVEY METHODOLOGY

3.1 DESK STUDY

An initial desk study was carried out to gain background information regarding protected species or designations within the area. The main sources of information were MagicMap and NBN Atlas.

3.2 SITE SURVEY

A site visit was made on 11 October 2019. 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:

- Badgers
- Bats
- Breeding birds

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

Badger

An area within 50 meters of the site was closely searched for the following signs of badger activity:

- Setts
- tracks and footprints
- latrines
- snuffle holes

Bats

Potential roosting features on site were noted and the site was assessed in terms of nearby connecting habitat and other features which could be of value to bats.

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.

3.3 PERSONNEL

The survey was carried out by Will Prestwood BSc, an experienced ecologist.

3.4 CONSTRAINTS

There were no constraints on the survey being carried out according to accepted guidelines and standards.

4 SURVEY RESULTS

4.1 DESK STUDY

The desk study found that within 5km of the site there were the following designations:

- Coed y Ciliau (SSSI) 1.5 kms to the southwest
- Afon Irfon (SSSI) 1.1 kms to the east and 1.1.kms to the west
- Caeau Llwyn Gorgan (SSSI) 2.7 kms south west
- Tyncoed Pasture (SSSI) 2.8 kms south east
- Upper Wye Tributaries (SSSI) 3 kms north east
- Cae Comin Coch (SSSI) 3 kms east

The search included Ramsar, SSSI, SAC, SPA, LWS and LNR. ¹

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

- Common pipistrelle bat
- Hedgehog
- Marsh fritillary butterfly (from site 0.5kms north east)
- Wide range of amber and red-listed birds species including:
 - Lesser spotted woodpecker
 - Grasshopper warbler
 - Yellowhammer
 - Crossbill
 - Curlew
 - Tree sparrow
 - Wood warbler
 - Willow warbler
 - Stonechat

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

4.2 HABITATS ON SITE

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

Improved grassland

The proposed area for the new poultry unit is currently improved grassland dominated by perennial ryegrass with occasional clover, chickweed, broad-leaved dock and creeping thistle.

4.3 ADJACENT HABITATS

Broad-leaved woodland

A small area of grazed, open woodland lies to the north of the site, within the same field. This is very open and is grazed and comprises mainly alder and occasional ash.

4.4 PROTECTED AND PRIORITY SPECIES

Badgers

There were no field signs to suggest that badgers use the field.

Bats

There are no suitable features for bat roosts on or near the site. None of the farm buildings are of a suitable structure. The lack of trees or hedgerows in the vicinity of the site results in little foraging habitat.

Breeding birds

There is no suitable habitat for breeding birds on the proposed site. Notable bird species recorded within one kilometre are associated with habitats such as woodland and hedgerows which are absent from the site.

5 EVALUATION OF RESULTS AND POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

The habitat affected by the proposed site, improved grassland, is of very low ecological interest.

5.2 PROTECTED SPECIES ASSESSMENT

No protected species will be affected by the proposals.

5.3 LOCAL SITES OF ECOLOGICAL IMPORTANCE

The detailed ammonia modelling, which includes nitrogen deposition and consequent plume depletion predicts that:

- The process contribution to annual mean ammonia concentration would marginally exceed the Natural Resources Wales lower threshold percentage of the Critical Level of $1.0 \mu\text{g-NH}_3/\text{m}^3$ at Coed Ciliau SSSI and there would also be exceedances of the lower threshold percentage of the lower bound of the Critical Load of 5.0 kg-N/ha at this SSSI.
- The process contribution to annual mean ammonia concentration would also marginally exceed the Natural Resources Wales lower threshold percentage of the Critical Level of $1.0 \mu\text{g-NH}_3/\text{m}^3$ at Caeau Llwyn Gwrgan SSSI.
- The process contribution to annual mean ammonia concentration would exceed the Natural Resources Wales lower threshold percentage of the Critical Level of $1.0 \mu\text{g-NH}_3/\text{m}^3$ at the River Wye SAC/River Irfon SSSI and there would also be exceedances of the lower threshold percentage of the Critical Load of 10.0 kg-N/ha at this SAC/SSSI.

The fitting of heat exchangers will reduce impacts but there would still be an exceedance of NRW's lower threshold percentage of the Critical Level and Critical Load at Coed Ciliau SSSI and River Wye Sac/River Irthon SSSI.

6 MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

The lack of ecological impact on the site renders mitigation unnecessary. However, there are opportunities to improve the general site for wildlife and this is discussed below.

6.2 PROTECTED SPECIES MITIGATION

The lack of impact on protected species renders specific mitigation unnecessary.

6.3 MITIGATION OF AMMONIA IMPACT

Further mitigation of potential ammonia impact on two statutory sites may be necessary and could be achieved either by modifications to the sheds (e.g. scrubbers) or by tree planting in the vicinity of the sheds. The online calculator provided by the Centre for Ecology and Hydrology indicates that the planting of a 35-metre-wide tree belt using oak and birch with Scots pine would reduce ammonia deposition by approximately 11% within 5 years and 20% within 25 years.

6.4 ECOLOGICAL ENHANCEMENT

New hedgerows

It is proposed to plant 716 metres of new hedgerow along the boundaries of the affected field and adjacent fields. These will replace existing wire fences and will be double-fenced to protect the new hedges against sheep and cattle. Hedges will consist of locally native species including hawthorn, blackthorn, hazel, field maple and holly. The hedges will serve to provide habitat connectivity between existing features on the farm and will provide improved habitat for small mammals, invertebrates and breeding birds.

7 SUMMARY AND CONCLUSION

Permission is being sought for the erection of two new poultry sheds to house broilers. The potential of such a construction prompted the need for an assessment of the ecology of the site and the potential for the scheme to impact the ecology of the site and adjacent or local habitats.

The site will be located on an area of improved grassland directly adjacent to the existing farmstead. No habitat of ecological interest will be directly impacted. An assessment was made of the site and its immediate surrounds to provide habitat

for badgers, bats and breeding birds. No evidence of these species on site was recorded and the habitat had no or little potential to support protected species.

A range of key species have been recorded within one kilometre including badgers, marsh fritillary and several amber or red-listed bird species. None of these are associated with the site or adjacent habitats.

An ammonia assessment has been produced which identifies three statutory sites of ecological interest at which there would be an exceedance of NRW's lower threshold percentage of the Critical Levels and Critical Loads. Fitting of heat exchangers will reduce this impact but at two sites, Coed Ciliau SSSI and River Wye Sac/River Irthon SSSI, levels will still be exceeded.

It is suggested that, in addition to further technical modifications to sheds, the establishment of a tree belt 35 metres wide would help to reduce ammonia levels by 11% in 5 years.

Further ecological and landscape enhancements will be achieved by the planting of 716 metres of native hedgerow. These three new hedges will provide habitat connectivity and, once mature, will provide improved habitat for small mammals, invertebrates and breeding birds.

REFERENCES

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Hundt L (2012) Bat Surveys: Good Practice Guidelines, 2nd edition, Bat Conservation Trust.

JNCC (2010) Handbook for Phase 1 habitat survey - a technique for environmental audit, ISBN 0 86139 636 7.

AS Modelling and Data Ltd (2019) A Report on the Modelling of the Dispersion and Deposition of Ammonia from the Proposed Broiler Chicken Rearing Houses at Cwmafan, Llanafan-Fawr, near to Builth Wells in Powys

FIGURE 1 LOCATION. 1:50,000

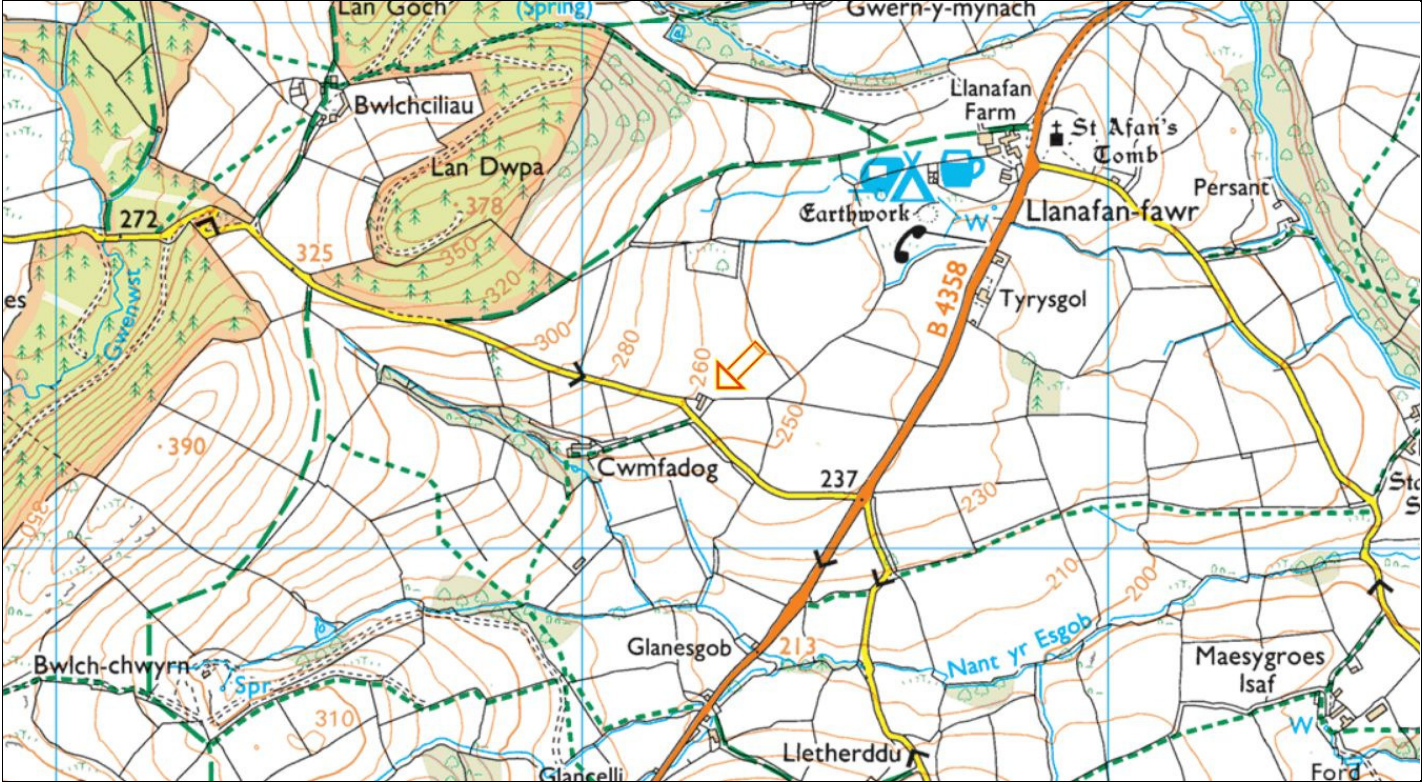


FIGURE 2 AERIAL PHOTOGRAPH

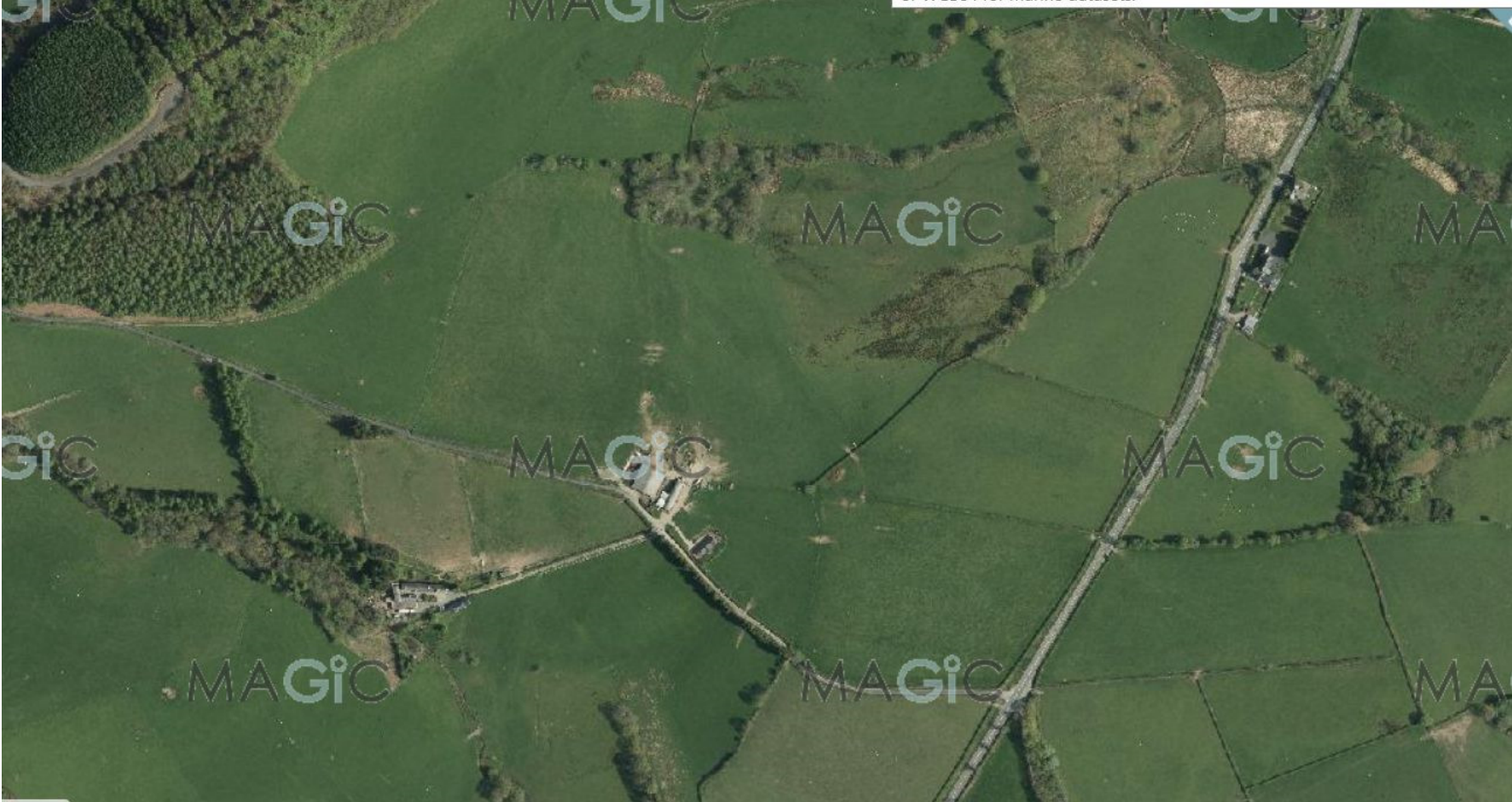
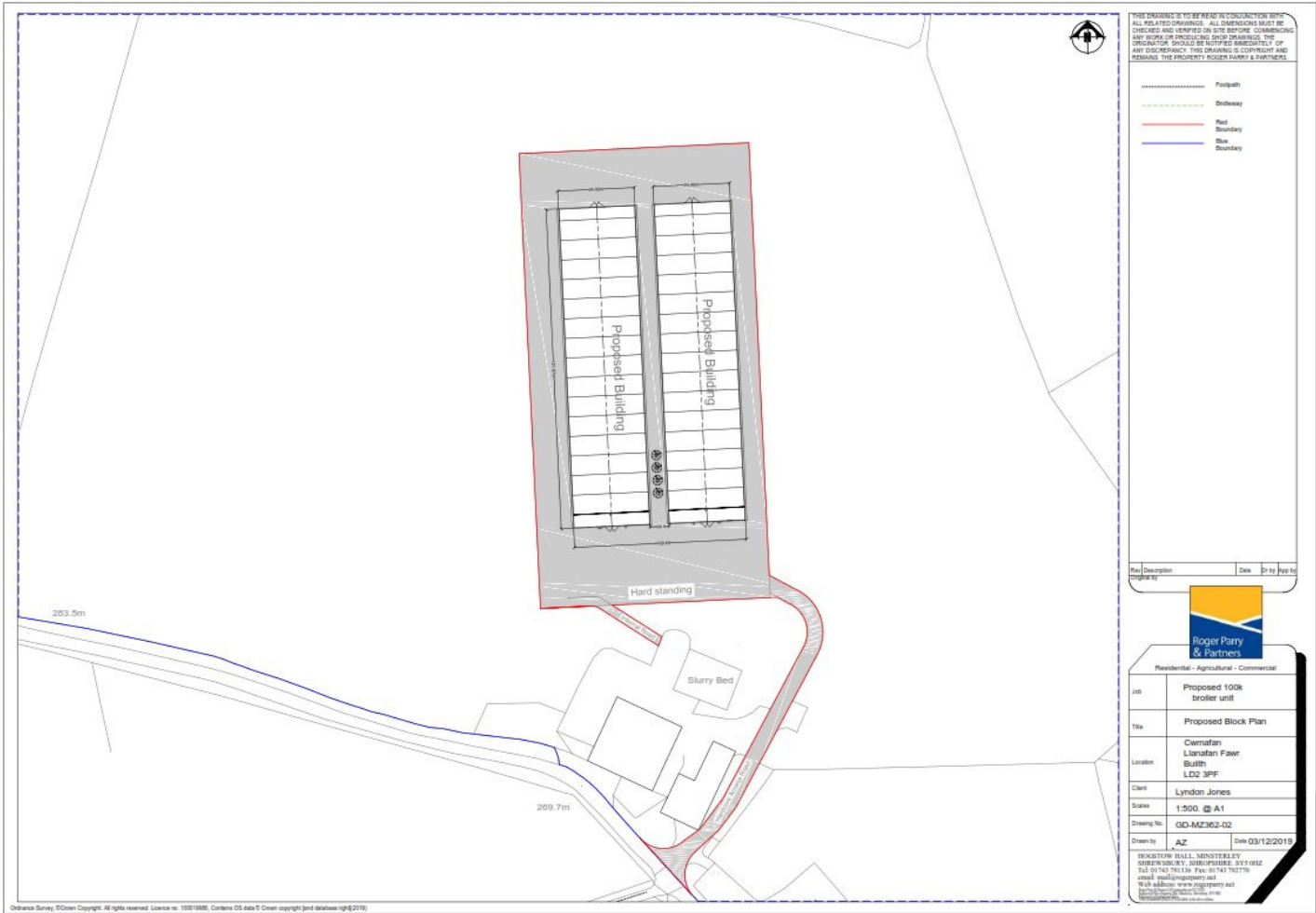


FIGURE 3 BLOCK PLAN



APPENDIX 1 PHOTOGRAPHS



THE SITE LOOKING FROM THE SOUTH



THE SITE LOOKING FROM THE NORTH

