



# ARBOR VITAE

ECOLOGY • FORESTRY • LAND USE



## **PRELIMINARY ECOLOGICAL APPRAISAL**

### **LAND AT TYN TWLL**

**Project name:** Tyn Twll, Llanarmon Dyffryn Ceiriog, Llangollen,  
LL20 7LH

**Grid Reference:** SJ12053449

**Date:** 23/08/2023

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**Requested by:** Roger Parry and Partners

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# 1 INTRODUCTION

## 1.1 BACKGROUND TO DEVELOPMENT

Planning permission will be sought for the construction of a single rural enterprise dwelling within an agricultural field at Tyn Twll.

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**

Tyn Twll farm is located 3.5km north-west of the village Llanarmon Dyffryn Ceiriog, Wrexham (Figure 1). The farm sits within a steep sided valley through which flows the Nant Cwm-llawenog, flooding annually (Figure 2).

The proposed site faces a motor cross track on the opposite side of the valley and there is a large agricultural shed adjacent to the site. The proposals will include the construction of a detached agricultural dwelling and a new access track. There is an existing field access point at the south-west corner of the field, from the lane.

## **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 23/08/2020. 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:

- Badger
- Bats
- Breeding birds
- Great Crested Newt
- Otter

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

#### **Badger**

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

- Setts,
- Tracks and footprints,
- Latrines,
- Snuffle holes.

### **Bats**

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).

### **Otter**

Any water courses within the area and appropriate terrestrial land were searched for the following field signs:

- Spraint,
- Footprints,
- Feeding remains.

## **3.3 PERSONNEL**

The survey was carried out by Phillipa Stirling MSc ACIEEM: Ecologist.

## **3.4 CONSTRAINTS**

There were no constraints to the survey being carried out according to all accepted guidelines.

# **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 |
|-----------------------------------------------------------------------|-------------------------------|--------------------|
| Berwyn                                                                | SPA<br>SSSI<br>SAC            | 0.4km              |
| Wood to the south-west                                                | Ancient semi-natural woodland | 0.35km             |
| Fedw Ty'n twll                                                        | Ancient semi-natural woodland | 0.3km              |
| Fedw Cwm-bach                                                         | Ancient semi-natural woodland | 1km                |
| The search included Ramsar, SSSI, SAC, SPA, NNR and LNR. <sup>1</sup> |                               |                    |

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                                                        |
|--------------------------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------|
| Otter*                                                                                                 | 0.5km    | European Protected Species,<br>Wildlife and Countryside Act 1981. |
| Goshawk<br>Marsh Harrier<br>Hen Harrier<br>Merlin<br>Peregrine Falcon<br>Hobby<br>Red Kite<br>Barn Owl | 0.5-1km  | Wildlife and Countryside Act 1981-<br>Schedule 1.                 |
| *Record from 1976.                                                                                     |          |                                                                   |

## 4.2 HABITATS ON SITE

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

### *Improved grassland*

The site forms a small plateau between two steep banks, above and below. The site itself has been agriculturally 'improved' and the sward now consists of: Italian ryegrass, white

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<sup>1</sup> 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.

clover, chickweed, broadleaved dock and common nettle. The field is grazed by sheep throughout the year. The wider site is stock fenced.

#### **4.3 ADJACENT HABITATS**

##### *Conifer plantation*

The east boundary of the site is a conifer plantation which houses extensive pheasant pens and feeders. The ground flora is therefore very limited.

##### *Semi-improved acid grassland/bracken*

The steep bank at the north boundary of the site is characterised by exposed rock, bracken growth and acid grassland species. Those recorded during the survey include: tormentil, sheep sorrel, bracken, foxglove and mat grass.

##### *Individual trees*

The lower bank below the site is also made up of semi-improved acid grassland but also has several individual trees growing including hawthorn and rowan.

##### *Hedgerow*

There is an old hawthorn hedge at the south-west boundary corner of the site which now consists of individual mature specimens.

#### **4.4 PROTECTED SPECIES**

##### *Badgers*

There are no historical records of badger at the site and no field signs were found within the search area or adjacent woodland block.

##### *Bats*

The site itself does not provide any potential roosting features and the adjacent conifer woodland does not appear suitable for roosting bats given no aged features are associated with the trees.

It is possible that bats are present in the landscape and could use the adjacent woodland for foraging and commuting within the landscape.

There are no records of bat species within 1km of the site although it is likely that several species reside in the wider area.

##### *Breeding birds*

The site offers no suitable habitat for breeding birds including ground nesting species. The adjacent woodland may offer some limited nesting in the higher branches but the ground flora has been removed entirely and offers very scarce resources.

#### *Great Crested Newt*

No ponds were identified within 250m of the proposed development site and therefore no further survey work is required with regard to this species.

#### *Otter*

This species has been recorded 0.5km from the site but the record was from 1976. This stretch of river remains shallow for much of the year with annual flooding through winter months.

From an initial inspection the river provides limited resting opportunities for otters and if this feature is in use by the species, it is likely to be on a temporary basis for commuting purposes.

## **5 POTENTIAL ECOLOGICAL IMPACT**

### **5.1 HABITAT ASSESSMENT**

The proposals will result in the loss of 0.1ha of improved grassland. The loss of this type of habitat on such a small scale will have a negligible impact upon the ecology of the landscape.

Improvements to the habitats on site will be made through the creation of a new species rich native hedgerow.

### **5.2 PROTECTED SPECIES ASSESSMENT**

#### *Badger*

The survey revealed no signs of use by badger and there are no historic records of badger at the site. The proposals will have no impact on this species and no further survey work or mitigation is required.

#### *Bats*

The proposals will have no impact upon roosting sites or bats directly. Given the remote location of the site, it will be necessary to implement a Wildlife Sensitive Lighting Plan to ensure that an increased human presence does not adversely impact nocturnal wildlife.

#### *Breeding birds*

The site is unsuitable for nesting and the proposals will have no impact upon breeding birds.

#### *Otter*

The site to be built upon does not provide any suitable terrestrial opportunities for otter and no evidence of this species was found during the survey. The proposals will have no impact upon this species.

The Wildlife Sensitive Lighting Plan will ensure that this nocturnal species, if present, remains undisturbed by the presence of artificial lighting on adjacent land.

## **6 AVOIDANCE, MITIGATION AND ENHANCEMENT**

### **6.1 HABITAT MITIGATION**

The extent and habitat to be lost is negligible and mitigation will not be required.

### **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 woodland and individual trees on the site will not be illuminated in order to retain dark movement corridors for nocturnal wildlife.
- 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.
- Lighting must be less than 3 lux at ground level and there shall be no light splay exceeding 1 lux along buildings, eaves or roof or adjacent hedgerows or trees.
- 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%.

### **6.3 ECOLOGICAL ENHANCEMENT**

A new species rich native hedgerow will be planted along the south boundary of the field site to following the existing sheep netting. The hedge will include: hawthorn, blackthorn, hazel, holly, dog rose, wild privet and guelder rose.

In order to improve opportunities on site for bats and breeding birds, the following wildlife features will be installed into the adjacent woodland:

- 1x 2F Schwegler bat box (or similar approved). This must be placed at least 3m from the ground.
- 1x 1B Schwegler bird box (or similar approved). This must be placed at least 2.5m from the ground.

## 7 SUMMARY

Planning permission will be sought for the construction of a rural enterprise dwelling within an agricultural field at Tyn Twll.

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 site faces a motor cross track on the opposite side of the valley and there is a large agricultural shed adjacent to the site. The proposals will include the construction of a detached agricultural dwelling and a new access track. There is an existing field access point at the south-west corner of the field, from the lane.

The proposals will result in the loss of 0.1ha of improved grassland. The loss of this type of habitat on such a small scale will have a negligible impact upon the ecology of the landscape.

The survey revealed no signs of use by badger and there are no historic records of badger at the site. The proposals will have no impact on this species and no further survey work or mitigation is required.

The proposals will have no impact upon roosting sites or bats directly. Given the remote location of the site, it will be necessary to implement a Wildlife Sensitive Lighting Plan to ensure that an increased human presence does not adversely impact nocturnal wildlife.

The site is unsuitable for nesting and the proposals will have no impact upon breeding birds.

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## 8 REFERENCES

- ARG UK (2010). ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. Amphibian and Reptile Groups of the United Kingdom
- Bat Conservation Trust (2018) Bats and artificial lighting in the UK. *Bats and the Built Environment series*, Guidance Note 08/18. Institution of Lighting Professionals.
- CIEEM (2017) Guidelines for Preliminary Ecological Appraisal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Chartered Institute of Ecology and Environmental Management, Winchester.
- Collins, J. (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> edn). The Bat Conservation Trust, London.
- 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.
- Mitchell-Jones, T. (2004) Bat mitigation guidelines. External Relations Team, English Nature.
- Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10(4), 143-155.

FIGURE 1 LOCATION. 1:50,000

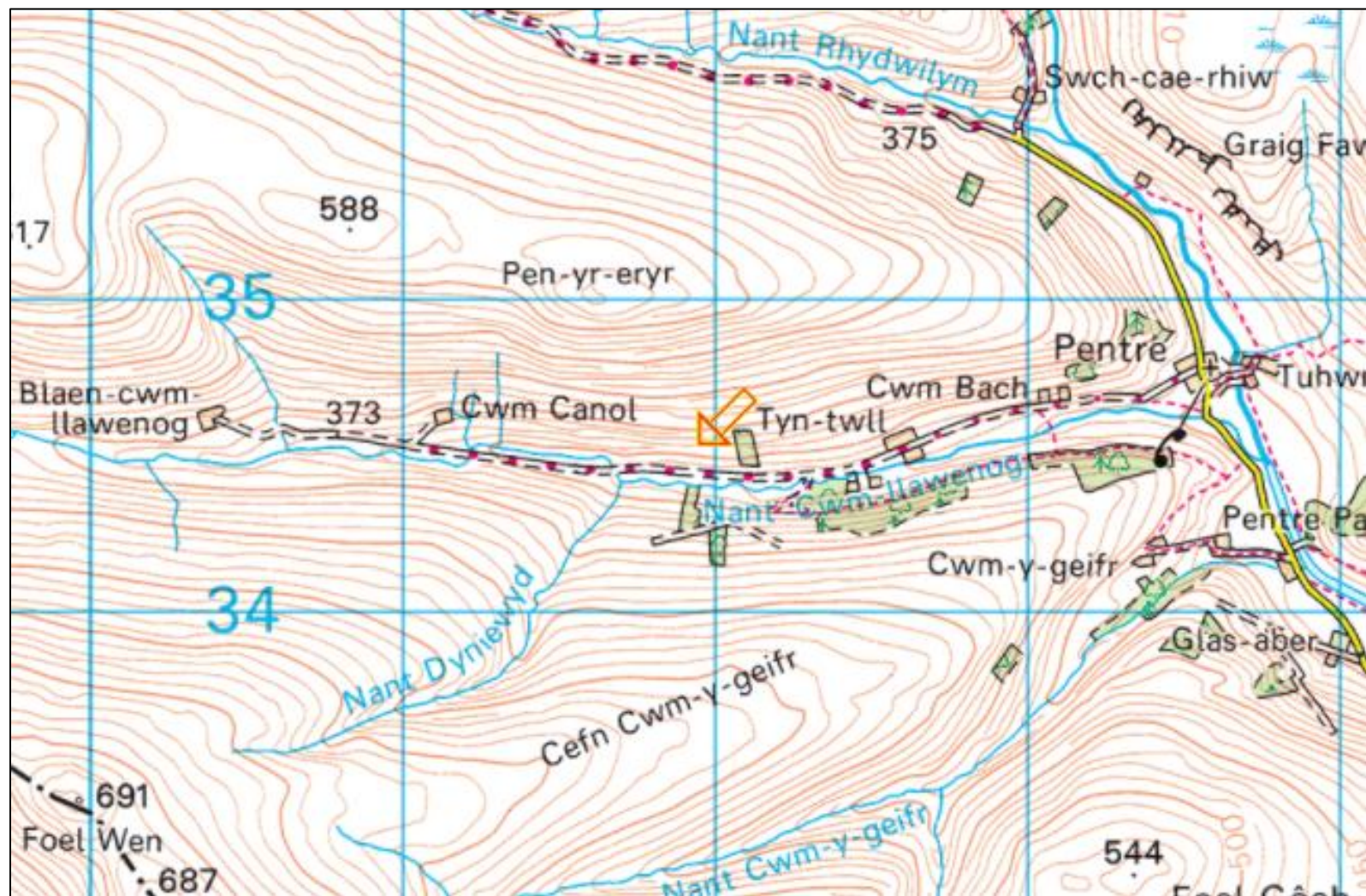
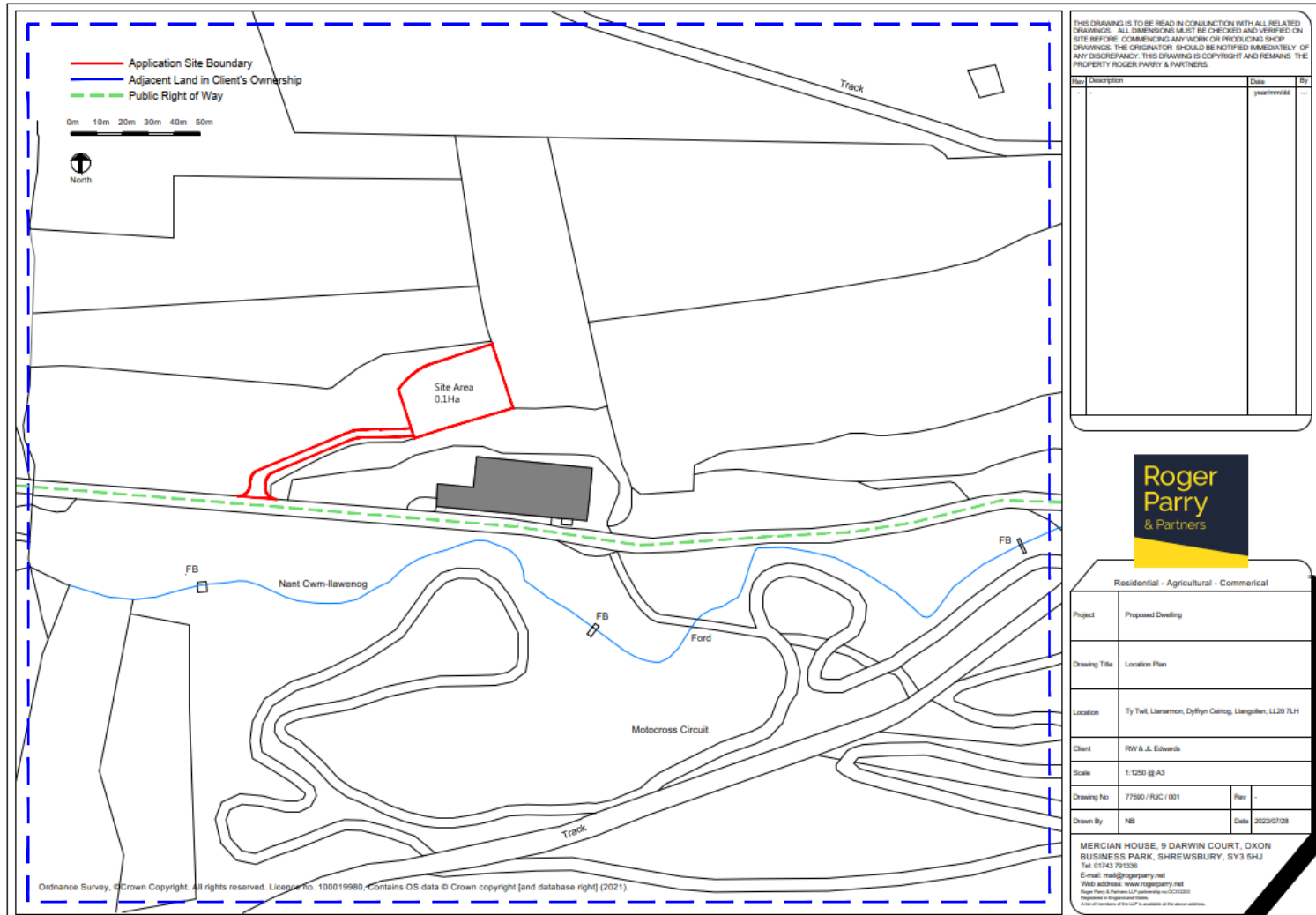


FIGURE 2 AERIAL PHOTOGRAPH



**FIGURE 3 PROPOSED SITE PLAN**



## APPENDIX 1 PHOTOGRAPHS



Existing field gate access to the site and old hawthorn hedgerow pictured.



The site and conifer plantation.



The site and steep bank dominated by bracken and semi-improved acid grassland.



The river at the basin of the valley.

