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PRELIMINARY ECOLOGICAL APPRAISAL

LAND ADJACENT TO ANMOR

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

Project name: **Land Adjacent to Anmor, Stryt Las, Rhosllanerchrugog, Wrexham, LL14 2HE**

Grid Reference: SJ29374576

Date: 26/11/2024

Prepared by: Charlotte Skinner MSc

Reviewed by: Phillipa Stirling MSc ACIEEM

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 an agricultural storage building on a piece of land in Rhosllanerchrugog, Wrexham.

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

The site is located on a section of land adjacent to a dwelling named Anmor, on the southern boundary of the village of Rhosllannerchrugog. The village can be found in between Wrexham and Llangollen, in Wales.

The land can be accessed from the road named 'Stryt Las' and the nearest major road is the A484, 2km to the east.

The surrounding landscape consists of residential dwellings to the north and the east, in addition to arable fields to the south and the west.

The proposed building will be constructed in a corner of a former coal mining site named Brandie Pits Shaft.

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 31/10/2024. 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:

- Badger
- Bats
- Breeding birds
- Great Crested Newt
- Hedgehog
- Reptiles

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

Badger

[redacted] 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).

Hedgehog

The site was assessed in terms of its suitability for hedgehog e.g. areas of rough vegetation, built structures with cavities beneath, availability of feeding areas.

Reptiles

The site was assessed based on its suitability to support reptile populations including connections to terrestrial land from water and suitable resting habitat nearby.

3.3 PERSONNEL

The survey was carried out by Phillipa Stirling MSc ACIEEM: Ecologist. Natural Resources Wales bat licence number: S094220-1 and GCN licence number: S090921/1. Assistant Ecologist: Charlotte Skinner MSc.

3.4 CONSTRAINTS

Breeding birds would not have been present at the time of the survey but previous nesting and appropriate nesting sites would have been apparent.

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
Stryt Las a'r Hafod	Sites of Special Scientific Interest	350m
Johnstown Newt Sites	Designated Special Area of Conservation	384m
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
Mammals		
Otter	0.9km	European Protected Species, Wildlife and Countryside Act 1981.
Hedgehog	0.3-0.9km	Wildlife and Countryside Act 1981: Schedule 6 The Natural Environment and Rural Communities (NERC) Act 2006
Common pipistrelle	0.5-0.9km	European Protected Species, Wildlife and Countryside Act 1981.
Water vole		Wildlife and Countryside Act 1981.
Birds		
Brambling Redwing Fieldfare Kestrel	0.5-1km	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.

Kingfisher		
Reptiles		
Grass snake	0.6km	Wildlife and Countryside Act 1981.
Amphibians		
Great Crested Newt	0.5-0.8km	Wildlife and Countryside Act 1981.

4.2 HABITATS ON SITE

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

Neutral grassland

The site consists of a fairly diverse range of grassland species, including Meadow foxtail, Common bent, Red fescue, Tall upright brome, Yorkshire fog and Timothy. It also contains the following forb species: Creeping buttercup, Ribwort plantain, Greater plantain, Jointed rush, White clover, Meadow vetchling, red clover, Birds foot trefoil, Bristly ox-tongue, Broadleaved dock, Dandelion, Knapweed, Soft rush, Hard rush, Spear thistle, Cow parsley, Upright hedge parsley. Perennial sow thistle is also very frequent throughout the grassland.

Bracken

The majority of the building will be located on an area that is currently a section of bracken.

4.3 ADJACENT HABITATS

Neutral grassland

Within the neutral grassland there appears to be spoil heaps, where large patches of Broom are restricted to. There are also areas of saturated ground, where it is almost exclusively Creeping buttercup and soft rushes.

Bare ground

There is a small patch of bare ground between the proposed building and the adjacent public path gateway.

Gorse scrub

There are patches of gorse scrub throughout the grassland.

Native hedgerow

H1: Southern boundary hedgerow with the following species: Holly, Hawthorn and Hazel in addition to bramble and bindweed that leads into the patch of bracken.

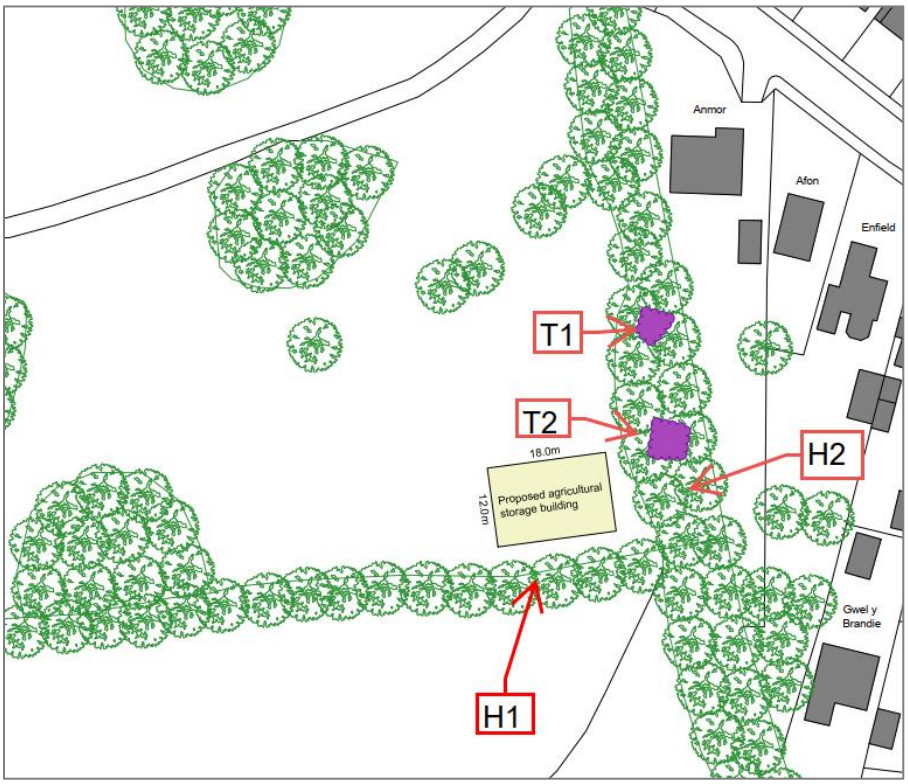
H2: Eastern boundary hedgerow with Holly, Hazel, Elder and Ash.

Individual trees

There are two trees within H2:

T1: Early mature Oak tree that had been recently pruned at the time of the survey.

T2: Early mature Oak tree with some minor ivy growth along the trunk and branches.



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.

Bats

The two trees that are in the western hedgerow were assessed as having 'low' potential as a bat roosting site. T1 has been recently pruned, with limited potential roosting features and T2 had little ivy growth with some small potential roosting features.

Breeding birds

The area of bracken and the H1 is a suitable habitat for generalist bird species. The neutral grassland is not a suitable habitat for ground breeding birds.

Great Crested Newt

No ponds were identified within 500m of the proposed development site; however the site is located approximately 350m from the Johnstown Newt site (SSSI), which is home to one of the largest known Great Crested Newt populations in Great Britain (JNCC). GCN has been recorded at around 500m from the site. The habitats on site provide suitable terrestrial opportunities for GCN, although there are no potential breeding sites nearby.

Stryt Las a'r Hafod is situated approximately 350m from the site, which is a SSSI, known for supporting one of the largest known breeding populations of the great crested newt in Great Britain, in addition to other common amphibians such as the smooth and palmate newt.

Reptiles

The grassland is a suitable habitat for reptile species, as there are areas of long grasses in addition to piles of wood within the site that offer suitable refuge for various reptile species. Grass snake has been recorded at 600m from the site previously.

Hedgehog

The area of bracken provides a suitable habitat for hedgehogs, in addition to the surrounding hedgerows. There are also large piles of wood within the adjacent grassland that provides suitable refuge opportunities for the species and foraging sites are plentiful.

5 POTENTIAL ECOLOGICAL IMPACT

5.1 HABITAT ASSESSMENT

The proposal will result in the loss of a small area of neutral grassland, in addition to a section of bracken. The proposed agricultural building will occupy an area of around 220m. Site plans do not indicate that a new access track will be required under the plans.

The loss of a small section of neutral grassland if of little ecological significance but will require some mitigation in the form of retained/enhanced grassland at the site.

5.2 PROTECTED SPECIES ASSESSMENT

Badger

There were no records of badger within [redacted] the site and no signs of badger on or adjacent to the site area, therefore, no mitigation for this species is required.

Bats

The two trees that are adjacent to the proposed building were assessed as having 'low' potential as a bat roosting site. A Wildlife Sensitive Lighting scheme will be implemented if artificial lighting is required for the new building, to avoid any light disturbance for bats and nocturnal species.

Breeding birds

The removal of the area of bracken has the potential to impact breeding birds, therefore, mitigation will be required.

Great crested newt

Studies have demonstrated that 95% of all summer refuges of GCN fall within 63m of their summer breeding pond (Jehle, 2000). Subsequent studies also found that capture rates of GCN were at their highest within 50m of a breeding site with a significant reduction in capture rates beyond 100m (Cresswell and Whitworth, 2004).

Both of the designate sites are located on the far side of the existing town of Rhos. Therefore, the built and developed land provide a significant barrier for terrestrial dispersal for great crested newts.

In addition, there are no ponds within 250m or 500m of the site and the proposals will result in the loss of a very small area of terrestrial habitat. If granted the permission, the proposals will have no negative impact upon the favourable conservation status of GCN within their natural range. Reasonable avoidance measures specific to GCN will be required to remove any residual risk.

Reptiles

The site provides suitable terrestrial habitat for reptile species and grass snake has been recorded within 1km. No evidence of reptiles was found at the time of the survey but works should proceed based on the likelihood of common reptiles being present locally.

The proposed site for the building does not provide suitable hibernation opportunities for reptiles and therefore winter months offer an appropriate time of year to complete work. As with GCN, a set of avoidance measures will be required.

Hedgehog

The site does offer suitable opportunities for hedgehogs and there are numerous records of the species within 1km of the site. General avoidance measures will be implemented.

6 AVOIDANCE, MITIGATION AND ENHANCEMENT

6.1 HABITAT MITIGATION

The remainder of open grassland at the site will be managed in perpetuity for the enhancement of the habitat. The following measures will be adopted:

- An annual mowing regime will be designed with no more than 2 cuts per year. The 2 cuts can take place in May and August only with all plant material removed. Ideally, an August cut will be the only one needed.
- Areas of bramble and bracken will be allowed to persist at the periphery of the site, but these habitats will not account for more than 10% of the overall area.
- Mowing will help to stop the establishment of scrub and individual trees but if this habitat does encroach on open grassland area, manual control will be used to remove them.

6.2 PROTECTED SPECIES MITIGATION

Bats

Wildlife Sensitive Lighting Plan- All artificial lighting will be designed with nocturnal wildlife in mind. The following measures will be included:

- 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.
- Any essential security lighting will be set on motion sensors with short timers (<1 minute) and should be LED lighting.
- Any essential 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

In order to mitigate for breeding birds, timing of the works needs to occur in phases.

Clearance of habitats that has the potential to conceal breeding birds, including the bracken will be completed during winter months, to avoid the breeding season (beginning of March- end of August).

All cut vegetation will be maintained as such, to avoid attracting wildlife into these areas.

Great Crested Newts and Reptiles

Legislation

Great Crested Newts (GCN) are a European Protected Species (EPS) and they and their habitats are fully protected under national (Wildlife & Countryside Act 1981 (as amended)) and European law (The Habitats and Species Regulations 2017 (as amended)). The combined legislation makes it illegal to:

- deliberately capture, kill or injure a great crested newt;
- damage or destroy a breeding site or resting place
- intentionally or recklessly obstruct access to any place used for shelter and protection, including resting and breeding places, whether occupied or not;
- deliberately, intentionally or recklessly disturb a great crested newt when in a place of shelter;
- possess a great crested newt, or any part of it, unless acquired lawfully;
- sell, barter, exchange or transport or offer for sale great crested newts or parts of them.

The following species of reptile are protected under the Wildlife & Countryside Act 1981 (as amended): Adder, slow worm, grass snake, smooth snake, common lizard. Smooth snakes and sand lizards are also European Protected species (EPS) which are protected under the Conservation of Habitats and species regulations 2017.

Where it is illegal to:

- disturb them while they occupy a structure or place used for shelter or protection;
- obstruct access to a place of shelter or protection;
- deliberately kill, injure, disturb or capture them;
- deliberately take or destroy their eggs;
- damage or destroy their breeding sites and resting places.

Induction of contractors

A toolbox talk will be given to all site personnel in order to make them aware of the possible presence of GCN and common reptiles, how to identify these and the avoidance measures to be used on site.

- A paper copy of the avoidance measures will be retained on site together with the contact details of a suitably qualified ecologist.

Timing & duration

- All works should take place during daylight hours when GCN and reptiles are unlikely to be moving around the area.

Site clearance

- All vegetation on site to be cleared will be done so during winter months. Vegetation
- levels will be maintained at a height of 10cm or less for a period of no less than 2 weeks prior to work on site starting.
- An experienced ecologist will carry out a ground inspection of the site before the turf stripping commences. If GCN are found or suspected to be present, a GCN mitigation licence will be sought and all work on site will be suspended until such a time that a licence is granted.
- If reptiles are found, the associated ecologist will be contacted for advice. Generally, common reptiles should be allowed to disperse from the area on their own.

Site compound

- The site compound will be situated on an area of existing hard standing to avoid creating resting places beneath stored materials etc.
- All site materials will be stored on pallets or other raised objects to avoid creating resting places/refuges.
- Any toxic or poisonous materials should be safely stored within a locked container.

Construction methods and special precautions

- All excavations on site will be covered at night or ramps will be provided to allow animals to exit excavations. All excavations will be checked for animals each morning prior to the re-commencement of works.

- All exposed new pipework and drains will be capped at night to avoid trapping animals.
- All excavated materials/waste will be stored in skips or similar and not on the ground where it could be used as a refuge/resting area by animals. Alternatively, all waste will be removed from site daily.
- All stored building materials that might be used as temporary resting places by animals will be stored off the ground on pallets or similar.

If GCN are found at any point during the development or activities outlined above, works must stop and an appropriately qualified ecologist should be contacted for advice, as well as Natural Resources Wales.

Contractors are prohibited from handling GCN.

6.3 ECOLOGICAL ENHANCEMENT

It is recommended that a minimum of 3x native broadleaved trees are planted at the site. The trees will be suitably guarded and fitted with supports. Species may include: oak, field maple, rowan.

7 SUMMARY

Planning permission will be sought for the construction of an agricultural storage building. 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 building will be constructed in a corner of a former coal mining site named Brandie Pits Shaft.

The proposal will result in the loss of an area neutral grassland, in addition to a section of bracken. The loss of a small section of neutral grassland is of very little ecological significance but will require some mitigation.

There were no records of badger within [redacted] the site, and no signs of badger at the site. No further survey work or mitigation for this species is required.

The two trees that are adjacent to the proposed building were assessed as having 'low' potential as a bat roosting site. A Wildlife Sensitive Lighting scheme will be implemented when planning the external lighting for the proposed building, to avoid any light disturbance for bats and nocturnal species.

The removal of the area of bracken has the potential to impact breeding birds, therefore, mitigation will be required.

Due to the vicinity of the Johnstown Newt site and Stryt Las a'r Hafod, reasonable avoidance measures specific to GCN will be implemented.

The site is suitable for reptile species, therefore general avoidance measures will be adopted during all work on site

A minimum of 3x native trees will be planted at the site to provide additional benefit for biodiversity.

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 (4th edn). The Bat Conservation Trust, London.

Cresswell, W. and Whitworth, R., 2004. An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt. Natural England Research Reports, p.36.

CYNGOR CEFN GWLAD CYMRU COUNTRYSIDE COUNCIL FOR WALES. (n.d.). Available at: https://naturalresources.wales/media/663230/SSSI_1376_Citation_EN001202e.pdf [Accessed 22 Nov. 2024].

Edgar, P., Foster, J. and Baker, J. (2010). Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth.

Gent, A.H., and Gibson, S.D, *eds* (2003) *Herpetofauna workers' manual.* Peterborough, Joint Nature Conservation Committee.

GOV.UK. (2015) Badgers: surveys and mitigation for development projects. [online] Available at: [Accessed 29 October 2021].

Harris, S., Creswell, P. and Jefferies, D. (1989) Surveying Badgers. 1st ed. London: The Mammal Society, pp.3-21.

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

Jehle, Robert. (2000). The terrestrial summer habitat of radio-tracked great crested newts (Triturus cristatus) and marbled newts (T. marmoratus). Herpetological Journal. 10. 137-142.

JNCC (n.d.). *Great crested newt (Triturus cristatus) - Special Areas of Conservation*. [online] sac.jncc.gov.uk. Available at: https://sac.jncc.gov.uk/species/S1166/.

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

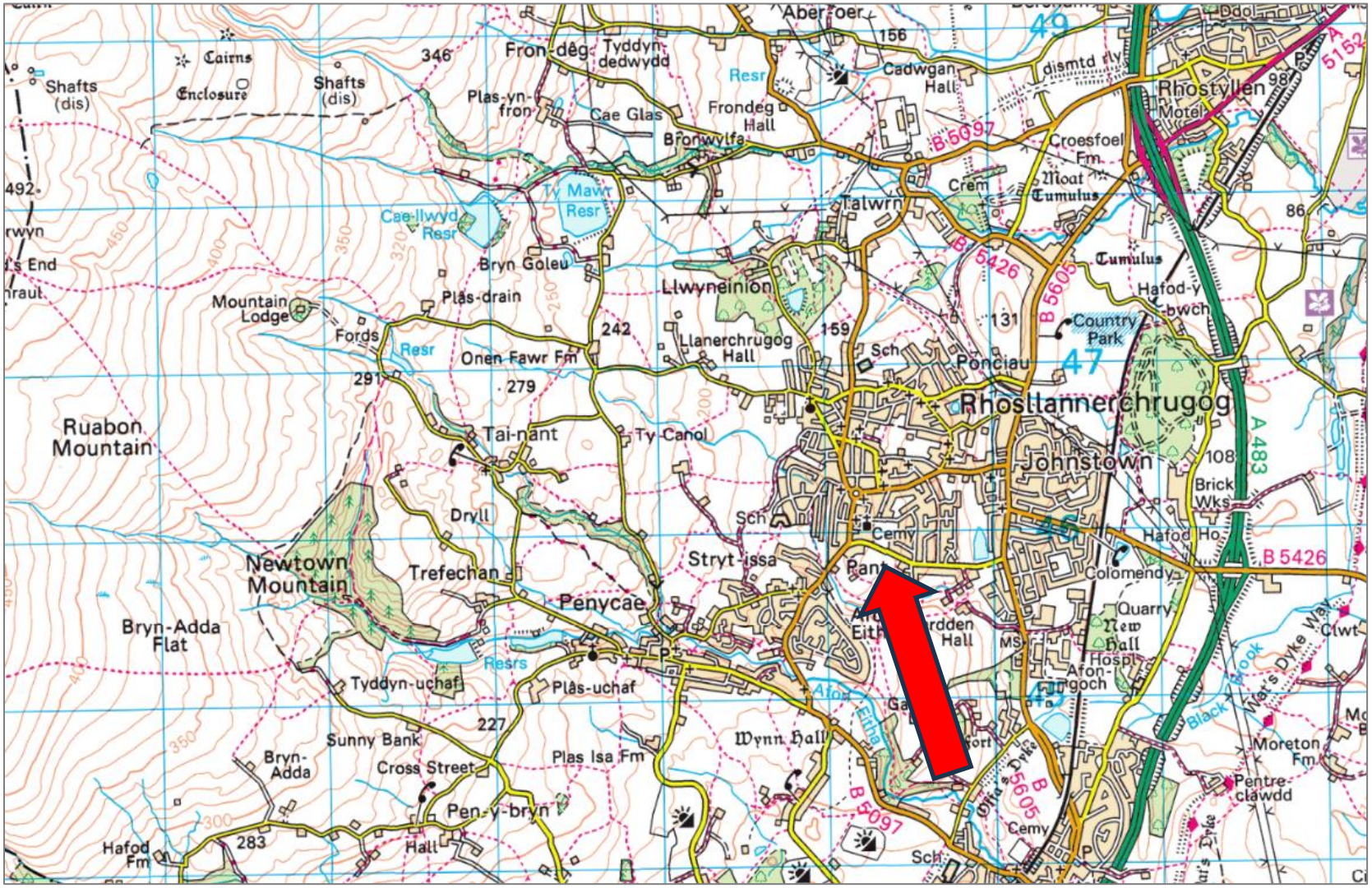
Mitchell-Jones, T. (2004) Bat mitigation guidelines. External Relations Team, English Nature.

Natural England (2002) Badgers and Development. 1st ed. Peterborough: Natural England, pp.2- 12.

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.

People's Trust for Endangered Species (2019) Hedgehogs and development. British Hedgehog Preservation Society. Accessed 11/04/2023.

FIGURE 1 LOCATION



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FIGURE 2 AERIAL PHOTOGRAPH



APPENDIX 1 PHOTOGRAPHS

	
Area of proposed development.	Neutral grassland.
	
T2 in H2.	T1 In H2.
	
Surrounding neautral grassland with piles of wood.	T1 and T2.