

Land at Greenacres
Brondeg
Heolgerrig,
Merthyr Tydfil
CF48 1TP



A Preliminary
Ecological Appraisal
By:

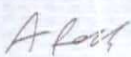

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On Behalf Of:

Mr and Mrs C. Connelly

February 2020

Client	Mr and Mrs C. Connelly
Project Name	Land at Greenacres, Brondeg, Heolgerrig, Merthyr Tydfil, CF48 1TP
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1 Executive Summary

- 1.1 Mr and Mrs C. Connelly are renewing their existing planning permissions for constructing two dwellings within the curtilage of their domestic residence at Greenacres in Brondeg, Merthyr Tydfil. These permissions relate to two plots of land: Plot 4 at the south-eastern corner of Greenacres, and Plot 5 at the south-western corner. Just Mammals Consultancy LLP were therefore commissioned to complete a Preliminary Ecological Appraisal (PEA) to highlight any ecological constraints or opportunities associated with the new dwellings in terms of biodiversity and protected species.
- 1.2 The ecological survey was completed in accordance with best practice guidelines on 18th December 2019. Situated in the largely residential area of Heolgerrig on the outskirts of Merthyr Tydfil, Greenacres is an actively used family residence set within 0.7 Hectares of domestic gardens. The grounds include the Nant Cwm Pant stream at the southern end which ultimately flows into The River Taff, to the east.
- 1.3 Although no part of the site is within a protected wildlife site, Cwm Glo a Glyndyrys Site of Special Scientific Interest (SSSI) is directly adjacent Greenacres to the south, largely designated on the basis of its extensive areas of marshy grassland, species-rich neutral grassland and acid grassland.
- 1.4 The desk study revealed 16 great crested newt records within 1km of the site, as well as a number of ponds within 500 m. Due to the presence of a small garden pond on-site, as well as suitable terrestrial habitat for the species, it is important that neither Plot 4 nor Plot 5 proceed until further survey effort has established the presence or likely absence of great crested newts, either using eDNA analysis or traditional survey approaches. A positive result is likely to trigger the need for a EPS development licence for ensuring the species is suitably safeguarded.
- 1.5 Since only indicative development layouts were available to inform this assessment, several broad avoidance and / or mitigation measures have been recommended to be integrated into final layout designs to safeguard wildlife and biodiversity. These include allowing sufficient protective buffers between the development footprint and areas of semi-natural broadleaved woodland and / or mature native trees in line with British Standards. However, an experienced and qualified ecologist must approve final layouts to ensure biodiversity is suitably safeguarded.
- 1.6 Work adjacent the stream at the base of the garden has the potential to impact the River Taff, its tributaries, notable species such as otter and the adjacent SSSI. Therefore, no work must take place until a Construction and Environmental Management Plan (CEMP) has been prepared and approved by the LPA. This document must adequately identify the risks of all potentially damaging activities to the watercourse and prescribe practical measures for avoiding or reducing such impacts during construction.
- 1.7 Since all woody shrubs and trees on site are suitable for nesting birds to some extent, this report presents suitable precautions for avoiding impacts to nesting birds, as well as compensatory habitat measures following any habitat removal.

2 Introduction

- 2.1 Mr and Mrs C. Connelly are renewing their existing planning permissions for constructing two dwellings within the curtilage of their domestic residence at Greenacres, Brondeg, Merthyr Tydfil, CF48 1TP. These permissions relate to two plots of land: Plot 4 (P/19/0259) at the south-eastern corner of Greenacres, and Plot 5 (P/19/0260) at the south-western corner.
- 2.2 It is understood that previous applications and renewals did not require formalised ecological assessments. However, it is also understood that Merthyr Tydfil County Borough Council recognise that both developments have the potential to cause ecological impacts. Just Mammals Consultancy LLP were therefore commissioned to complete a Preliminary Ecological Appraisal (PEA) for the two plots. This comprised an ecological survey of the site in accordance with current guidelines (CIEEM 2017). The survey was completed during the daytime on 18th December 2019 and included an assessment of habitats and their suitability for protected species.
- 2.3 Situated in the largely residential area of Heolgerrig on the western outskirts of Merthyr Tydfil, Greenacres comprises a detached residential dwelling with associated landscaping, gardens and hardstanding. The area is approximately 0.7 hectares (ha) and situated directly adjacent Cwm Glo a Glyndyrys Site of Special Scientific Interest (SSSI) to the south. The site's centre has a National Grid Reference (NGR) of SO 03609 06099, and lies at an altitude of approximately 235m Above Ordnance Datum (AOD).
- 2.4 The primary objective of this report is to highlight, as far as reasonably possible, any ecological constraints and opportunities associated with the new dwellings that might arise in relation to biodiversity and protected species. This includes initial site clearance as well as dwelling construction and their long-term use. Assessment aims have been broken down as follows:
- assessing the ecological value of on-site habitats and their suitability for protected and notable species;
 - assessing whether proposals are reasonably likely to impact protected species or ecologically valuable habitats;
 - using survey findings to recommend appropriate mitigation measures for safeguarding biodiversity; and
 - proposing measures for enhancing biodiversity in line with Planning Policy Wales 10 (PPW10).

3 Surveyor Experience

- 3.1 Andrew Ross (MCIEEM) completed the PEA and is the author of this report. Andrew has over ten years of experience working as an ecological consultant with considerable experience working to safeguard biodiversity at a range of development projects. As well as being a Full member of the Chartered Institute of Ecology and Environmental Management, Andrew also holds licences to survey bats, dormice, and great crested newts in England and Wales. Between 2017 and 2019, Andrew worked very closely with the Bat Conservation Trust on their Bat Mitigation Project where he helped investigate the success of numerous bat mitigation schemes in England/Wales many years after construction. Andrew is an Ecologist with the Just Mammals Consultancy LLP.

4 Survey Methodology

- 4.1 The PEA was completed on 18th December 2019 by an experienced ecologist. The site and its boundaries were appraised according to the standard methodology detailed in the 'Handbook for Phase-1 habitat survey' (JNCC 2010). All habitats were mapped, described and photographed. A digitised habitat map can be found in Figure 3 (see Appendix II) and photos in Appendix III.
- 4.2 The surveyor appraised the site's suitability for protected species. In particular, this included badger (*Meles meles*), bats, otter (*Lutra lutra*), dormice (*Muscardinus avellanarius*), water vole (*Arvicola amphibius*), reptiles and amphibians. Where present, field signs or the animals themselves, were also recorded. For great crested newts (*Triturus cristatus*), ponds within 500m of the site were identified using Ordnance Survey maps and aerial imagery. Other priority species listed under Section 7 of the Environment (Wales) Act were also considered, such as west European hedgehog (*Erinaceus europaeus*).

- 4.3 The PEA included a visual assessment of the external and internal parts of any outbuildings within the development footprint, with the aim of detecting any signs of bat presence. This involved examining outer surfaces from the ground and looking for signs of bat presence including bat faeces (droppings) on walls, ledges, doors and sills. A high-powered lamp was used to examine potential access and roosting areas. Any gaps or crevices in the structure were inspected as closely as possible.
- 4.4 A ground-level inspection of all trees likely to be removed or indirectly affected was also completed using close focussing binoculars and a powerful torch to record any signs of use by bat species. Potential Roosting Features (PRFs) such as cracks, cavities, decaying limbs, loose bark and dense ivy were recorded and inspected where possible. Any signs of staining (from urine or fur rubbing) and scratch marks below potential access points were noted, and a search was made for droppings underneath these features.
- 4.5 Invasive species, such as Japanese knotweed (*Fallopia japonica*), and Himalayan balsam (*Impatiens glandulifera*), were also recorded, where present.

5 Site Description

- 5.1 Greenacres is an actively used family residence, set within 0.7 ha of domestic gardens. The grounds include a section of the Nant Cwm Pant stream at the southern end which ultimately flows into The River Taff, approximately 1km to the east. The wider 1km largely comprises Cwm Glo a Glyndyrys SSSI sited directly adjacent Greenacres to the south, the residential area of Heolgerrig to the north, and Merthyr Tydfil town to the east beyond the busy A470.
- 5.2 Plot 4 near the south-east corner of Greenacres is approximately 780 square meters (0.08 ha), mostly comprising well-established amenity grassland, trees and woodland edge habitat. Plot 5 near the south-west corner is approximately 1000 square meters (0.10 ha), mostly comprising garden / allotment plots, woodland edge habitat, scrub habitat and outbuildings.

6 Survey Constraints

- 6.1 No major constraints were encountered during the PEA and all habitats on site were broadly identified with confidence. However, it must be noted that this PEA assessment is not intended to confirm the presence or absence of all plant species on site. This would require a more detailed botanical assessment over multiple site visits between April and September. Since the assessment took place during December, it is likely that some species were not recorded. However, it does provide a comprehensive ecological assessment of habitat types and dominant species at the time of the survey and highlights areas where further survey effort would be required.

7 Desktop Study

- 7.1 Although no part of the site is within a statutory site of nature conservation interest, the desktop study confirmed that Cwm Glo a Glyndyrys SSSI is situated directly adjacent Greenacres to the south. This SSSI also includes the Cwm Glo SINC which also extends into the grassland / scrub habitat to the east of Greenacres. The SSSI is largely designated on the basis of its extensive areas of marshy grassland, species-rich neutral grassland and acid grassland, as well as being one of the best sites in Britain for waxcap fungi. However, these habitat types are separated from Greenacres by at least 250m of mixed deciduous woodland, largely comprising ash (*Quercus robur*), birch (*Betula pendula*), beech (*Fagus sylvatica*), rowan (*Sorbus aucuparia*) and alder (*Alnus glutinosa*).
- 7.2 SEWBREC's record search reported a single area listed on the Ancient Woodland Inventory approximately 400m to the south-west of Greenacres.
- 7.3 SEWBREC's record search (unique reference 0190-617) reported 850 species records within 1km of the site. These are briefly summarised in the bullet list below.
- Land mammals – excluding bats – accounted for 22 records (i.e. 2.5% of all species records). These included water vole and badger records from the SSSI, as well as otter records along the River Taff to the east.
 - Bats accounted for 23 (i.e. 2.5%) of species records, including flight records for brown long-eared bat (*Plecotus auritus*) and lesser horseshoe bat (*Rhinolophus hipposideros*).

- Reptiles and amphibians accounted for 30 records (3.4%), with a single grass snake (*Natrix natrix*) recorded from the SSSI approximately 450m to the south-west. As well as palmate newt (*Lissotriton helveticus*) and common toad (*Bufo bufo*), the data search also reported the presence of 16 great crested newt records from the SSSI as well as the Heolgerrig area. The closest such record was from 642m to the west.
- Birds accounted for 180 (i.e. 20%) of species records. As well as the Schedule 1 species like barn owl (*Tyto alba*) and kingfisher (*Alcedo atthis*), the data search also reported several Section 7 species including song thrush (*Turdus philomelos*), nightjar (*Caprimulgus europaeus*) and skylark (*Alauda arvensis*).
- Vascular plants accounted for 421 records (48%), including species such as bluebell (*Hyacinthoides non-scripta*), devil's-bit scabious (*Succisa pratensis*) and yellow archangel (*Lamium galeobdolon*) reported within 1km.
- Lichens and bryophytes accounted for 23 records (2.6%).
- Fungi accounted for 63 records (7.1%), most of which were species of wax-cap recorded from the SSSI.
- Invertebrates accounted for 117 records (13%), including several records of Marsh Fritillary and various species of moth and dragonfly within 1km.
- Fish accounted for 5 (i.e. 0.6%) of the records. These were associated with the River Taff and its tributaries, including Atlantic salmon (*Salmo salar*) and brown trout (*Salmo trutta*).

- 7.4 In terms of great crested newts, aerial photography and OS maps of the local area revealed a number of ponds within 500 m of the survey area, including a single garden pond on site between Plots 4 and 5 (see Figure 6).

8 Survey Results

- 8.1 The PEA survey was completed on Tuesday the 18th of December 2019 by an experienced ecologist. Details of the conditions under which the survey was conducted are given in Table 1 below. Wind speeds shown employ the Beaufort scale.

Table 1: Summary of Survey Activity and Weather Conditions

Survey Type	Date	Timing	Weather Conditions
Day time PEA habitat assessment, including protected species assessment	18/12/2019	11.30 – 13.30 hours Greenwich Mean Time	Air temperature: 6.9°C Cloud cover: 8/8 oktas Wind speed: F2, light breeze Conditions: Dry
Surveyor	Andrew Ross		

- 8.2 Habitats present within and outside of the development footprints of Plots 4 have been mapped (see Figure 5), broadly following the codes and conventions described in the Phase 1 Habitat Survey Handbook (JNCC 2010). Table 2 below describes the on-site habitats. The most dominant plant species are also listed. Photographs of the site are provided in Appendix III.

Table 2: Summary of Phase 1 Habitat Notes

Phase-1 Habitat Classifications and Descriptions	
J3.6 Buildings	
Building descriptions are provided in Table 5 below.	
J4 Bare Ground	
Greenacres includes a tarmac driveway and turning circle around Building 1. The area at Target Note 1 (TN1) comprises an active development area for a new dwelling.	
J1.2 Amenity Grassland / Semi-Improved	
The largest proportion of Plot 5, and a good proportion of Plot 4, comprises well-established garden lawn habitat. Grass species included Yorkshire fog (<i>Holcus lanatus</i>), red fescue (<i>Festuca rubra</i>) and creeping bent (<i>Agrostis stolonifera</i>). Forbs included dandelion (<i>Taraxacum</i> agg), creeping buttercup (<i>Ranunculus repens</i>), bulbous buttercup (<i>Ranunculus bulbosus</i>), daisy (<i>Bellis perennis</i>), and a dense covering of moss in the more shaded areas near the tree canopy.	
A2 Scrub / J1.4 Introduced Shrub	
Both Plots 4 and 5 include areas of garden planting around the borders of the amenity grassland, driveway and allotment plots. Species typically comprised holly (<i>Ilex aquifolium</i>), dogwood (<i>Cornus</i> sp), scaly male fern (<i>Dryopteris affinis</i>), Primula sp, foxglove (<i>Digitalis purpurea</i>), bamboo species and stonecrop (<i>Petrosedum</i> sp). Occasional non-invasive Rhododendron sp was also recorded.	
The walled garden boundary at Target Note 4 features well-established garden planting including snowberry (<i>Symphoricarpos albus</i>), holly, <i>Rosa</i> sp, evergreen shrubs, male ferns, ivy (<i>Hedera helix</i>) and foxgloves.	
A1 Broadleaved Semi-natural Woodland	
Area of deciduous woodland / woodland edge habitat comprising ash (<i>Fraxinus excelsior</i>), field maple (<i>Acer campestre</i>), sycamore (<i>Acer pseudoplatanus</i>), rowan, hazel (<i>Corylus avellana</i>), alder and beech. Several trees featured common polypody (<i>Polypodium vulgare</i>) and moss or ivy growth. Shrubs included laurel species, <i>Aucuba</i> sp, holly and bramble. The understory and ground layers were typically shaded, with species comprising broad buckler fern (<i>Dryopteris dilatata</i>), scaly male fern, hart's tongue (<i>Phyllitis scolopendrium</i>) and opposite-leaved golden saxifrage (<i>Chrysosplenium alternifolium</i>).	
A3 Scattered Trees and tree lines	
Apart from the wooded areas, Greenacres featured several tree lines and scattered trees, including two mature pedunculate oaks (TN2) within Plot 4. Lines of dense mature Leylandii planting along the east boundary (TN6), as well as planted conifer and maple (<i>Acer</i> sp) trees along the norther-eastern boundary (TN7) were also recorded.	
Other scattered trees included hawthorn (<i>Crataegus monogyna</i>), <i>Prunus</i> sp, Yew (<i>Taxus baccata</i>), Chamaecyparis sp and Leylandii sp.	
G2 Stream	
Rocky stream (Nant Cwm Pant) flowing west to east at the base of a steep slope at the southern end of the garden. Moderate flow at the time of survey with moss-covered boulders and fern growth along the edges.	
J2.5 Wall	
The stone walls, particularly the feature running along the western edge of the driveway, typically features a large covering of pleurocarpus and acrocarpus mosses, lichens and ferns such as wall rue (<i>Asplenium ruta-muraria</i>) and maidenhair spleenwort (<i>Asplenium trichomanes</i>).	
J2 Boundary (Fence)	
Intact post-and-rail and close-board timber fencing around all site boundaries.	

- 8.3 Target Notes used to describe habitats not readily conforming to recognised types and evidence of, or suitability for, protected and priority species are described in Table 3. A Phase 1 map showing the habitats, building layout and Target Notes is displayed in Figure 5. Photographs of the site are provided in Appendix III.

Table 3: Target Notes

Target Note	Description
Target Note 1	Active development area for a new dwelling.
Target Note 2	Two pedunculate oaks within development footprint of Plot 5.
Target Note 3	Walled pond between Plots 4 and 5. At least 0.5m deep and unlikely to dry out in spring / summer. Water surface covered with duckweed (<i>Lemna minor</i>), with wall covered with mosses, lichens and ferns.
Target Note 4	Walled garden boundary with well-established garden planting including snowberry, holly, <i>Rosa</i> sp, evergreen shrubs, male ferns, ivy and foxgloves.
Target Note 5	3m high rocky bank with fern-grown and evergreen shrubs.
Target Note 6	Line of dense mature Leylandii planting.
Target Note 7	Line of planted conifer and maple (<i>Acer</i> sp) trees.

- 8.4 The broadleaved semi-natural woodland along the southern edges of Plots 4 and 5 is reasonably continuous with the adjacent SSSI, separated only by a post-and-rail fence boundary. Despite

the presence of some conifers and non-native species like sycamore, most of the canopy consisted of native broadleaved species so was classified as 'broadleaved semi-natural woodland' according to JNCC's criteria. Canopy species were typical of woods on relatively dry basic soils. Although certainly mature, the age and height structure of trees was not noticeably diverse and the absence of veteran or ancient trees did not indicate the woodland to be obviously ancient. Furthermore, examination of historical aerial photos from 1945 indicate that only some of the trees were present in 1945 and the area is not listed under the Ancient Woodland Inventory. Nevertheless, the presence of ancient woodland indicator species like broad buckler fern, hart's tongue and opposite-leaved golden saxifrage indicates the habitat meets at least some of the criteria for 'lowland mixed deciduous woodland' as a Section 7 Habitat.

- 8.5 Although the vegetated parts of the site provide suitable foraging and sett-building habitat for badgers, no badger setts or evidence of current use by badger were recorded.
- 8.6 No dormouse nests or characteristically gnawed hazel nuts were recorded during the survey. However, the on-site woody habitats – including the garden trees and shrubs – are suitable habitats for dormice. Although the presence of dormice in summer nests in trees and shrubs (between May and October inclusive), and possibly hibernation nests at ground level (between November to April inclusive), cannot be completely ruled out without further survey effort, the likelihood of dormice being present is extremely low due to the very small extent of habitat, complete absence of any dormouse records within 1km and absence of field signs. As explained more fully in the discussion (see below), detailed dormouse surveys are therefore not recommended in this instance.
- 8.7 The survey area contained 3 buildings as displayed in Figure 5 (see Appendix II), all of which were assessed during the survey. Table 5 below briefly summarises the suitability of each building for roosting bats as indicated by their condition, presence of Potential Roosting Features, evidence of roosting or live sightings. Suitability criteria follows guidelines as stipulated by the Bat Surveys Good Practice Guidelines (Bat Conservation Trust, 2016).

Table 4: Suitability of Buildings for Roosting Bats

Building Ref	Description	Potential Roosting Features (PRFs)/ Evidence of Use	Suitability
1	Domestic bungalow with hipped roof (outside development footprint).	Some PRFs associated with tiled roof.	<u>Low-Moderate</u>
2	Breezeblock outbuilding used as storage area with flat, corrugated roof and attached garage.	No external PRFs recorded and interior unsuitable for day roosting.	<u>Negligible</u>
3	Timber shed	No external PRFs recorded and interior unsuitable for day roosting.	<u>Negligible</u>
4	Caravan	No external PRFs recorded and interior unsuitable for day roosting.	<u>Negligible</u>

- 8.8 Only Building 1 (the main residential bungalow) featured any PRFs and was assessed as having a 'low' level of suitability for day-roosting bats. However, this was outside the footprint of the proposed development work and no impacts are proposed. It is therefore not considered further in this report. All outbuildings that would be affected by the development of Plot 4 had only 'negligible' suitability.
- 8.9 Apart from the wooded areas, Greenacres also features several mature or veteran scattered trees. Large specimens of ash and beech are sited directly adjacent the footprint of Plot 5, while two large pedunculate oaks are sited in the central area of Plot 4. A dense line of mature *Leylandii* trees has also been planted along the eastern boundary directly adjacent Plot 4. In terms of their suitability for roosting bats, no trees on site featured obvious PRFs from ground-level. However, the two Oak trees at Target Note 2 and many of the mature trees adjacent Plot 5 were sufficiently mature that more elevated survey effort may reveal the presence of suitable features. Such tree specimens were therefore classified as having a 'low' suitability for roosting bats according to the Bat Surveys Good Practice Guidelines (Collins 2016).
- 8.10 The Nant Cwm Pant stream at the southern end of Greenacres flows west to east at the base of garden. It was shallow with a moderate flow at the time of survey with moss-covered boulders and fern growth along its margins. In terms of protected species, surveyors recorded no evidence of burrowing by either rat (*Rattus rattus*) or water vole along the stream. Despite the

presence of otter records along the River Taff to the east, the stream is considered too shallow and far away from other suitable foraging resources. Therefore, neither otter nor water vole are reasonably likely to be present on site and are not considered further in this assessment.

- 8.11 Although on-site habitats do not conform to the grassland mosaics typically associated with reptile species, the shrubby garden habitats and allotment plots at Plot 4 are nonetheless suitable for occasional use by grass snake, which could potentially use the stream for dispersal activities. Slow worms (*Anguis fragilis*), which have small territories, are less likely to have colonised the site, particularly due to the absence of any records within 1km.
- 8.12 The freshwater pond on site has some suitability for GCN. Following a daytime Habitat Suitability Index (HSI) assessment of this pond, it was given a score of 0.65 meaning it has 'average' suitability for GCN. Most of the terrestrial habitat at Greenacres was suitable for great crested newt dispersal, refuge and foraging activities to some extent and particularly the wooded areas, wood piles, old vegetated walls and garden planting. Furthermore, the stream at the base of the garden would not prevent a significant barrier to their dispersal. Since great crested newts are known to use terrestrial habitat up to 500 m from their breeding ponds, the wider landscape must also be taken into consideration. From reviewing maps and aerial photographs, there appear to be at least three other ponds within 250m of the survey area and a further two ponds within 500m that could be used by breeding populations of great crested newt. The locations of these ponds are shown in Figure 6.
- 8.13 All trees and garden shrubs on site provide suitable habitat for nesting birds to some extent, and the habitats are likely to be occupied by a range of garden and woodland species during the spring and summer months.
- 8.14 In terms of invasive species, occasional *Rhododendron* was recorded adjacent some of the trees in Plot 5. However, since the isolated specimens were self-contained with no evidence of spreading, these are unlikely to be *Rhododendron ponticum* but instead represent a planted variety.

9 Discussion and Conclusions

- 9.1 Plot 5 at Greenacres mostly comprises well-established garden lawn habitat. Although closely mown and well-managed, the plant species recorded are more likely to represent semi-improved grassland instead of more typical amenity seed mixes which tend to be dominated by perennial rye-grass (*Lolium perenne*). Plot 4 includes a larger surface area of small allotment plots.
- 9.2 Generally, the most valuable habitats within the zone of influence for both plots are the mature tree specimens, the lowland mixed deciduous woodland (likely to conform to a Section 7 Habitat) and the stream at the base of the steep gradient to the south. The stone walls with well-established garden plantings, ferns and bryophytes along the western boundary and adjacent the driveway are also a notable feature.
- 9.3 The areas of semi-natural broadleaved woodland, as well as several mature or veteran oak, ash and *Prunus* sp trees are sited within or directly adjacent both plots. Development of each plot therefore has the potential to remove wooded areas, physically damage the trees themselves, damage their root systems or degrade their continued ecological functioning.
- 9.4 Despite the reasonably close proximity of both footprints to the SSSI and SINC, neither would cause any direct losses to the habitats present, or cause damage / degradation by dust-deposition. However, sections of the stream at the base of the garden flow directly adjacent Cwm Glo a Glyndyrys SSSI and Cwm Glo SINC after it leaves the site. Therefore, proposals have some potential to degrade these wildlife sites in the event of surface run-off or water pollution incidents. Were this to occur, such impacts would inevitably affect the ecological functioning of the stream itself and may also impact species associated with the River Taff such as otter or Atlantic salmon.
- 9.5 Although none of the outbuildings within Plot 4 are considered suitable for roosting bats, the two oak trees at Target Note 2 were suitable. Many of the mature trees along the woodland edge and western boundary directly adjacent Plot 5 were also sufficiently mature that more elevated survey effort may reveal the presence of suitable features. All such tree specimens were therefore classified as having a 'low' suitability for roosting bats according to the Bat Surveys Good Practice Guidelines (Collins 2016).

- 9.6 The presence of great crested newts on site is unknown at this stage. Considering the size of each plot (approximately 0.1 ha each) and their distance to potential breeding ponds, an offence would be 'likely' if the on-site pond is used by great crested newts for breeding. However, such an offence would be 'highly unlikely' if great crested newts are absent from the on-site pond but only present in off-site ponds over 100m away. This has been established using the Natural England Licence Risk Assessment Tool. However, it must be noted that the Risk Assessment Tool does not take into account such factors as the population size-class or nature of terrestrial habitat connectivity between breeding ponds and the site.
- 9.7 Both plots are also suitable for nesting birds in the tree and shrub habitats during the spring and summer months. Since proposals have the potential to remove suitable nesting bird habitat, precautionary measures and mitigation must be put in place to ensure that no nesting birds are disturbed during the work and there is no net loss of nesting sites. In particular, all nesting birds are protected under the provisions of the Wildlife and Countryside Act 1981 (as amended), and active bird nests cannot legally be disturbed or removed.
- 9.8 In terms of other protected and priority species, Plots 4 and 5 are not considered suitable for otters, water voles or dormice. Although potentially suitable for badgers, there is no evidence the site has ever been used for sett-building activities. Although both plots provide some suitability for foraging / commuting bats, West European hedgehog and widespread amphibians, the site's small size means it is unlikely to be an important resource.

10 Recommendations

- 10.1 Due to the potential for great crested newts on site, it is important that neither Plot 4 nor Plot 5 proceed until further survey effort has established the presence or likely absence of this species. As a minimum, such an assessment must establish presence / absence in the on-site garden pond – either using eDNA analysis or traditional survey approaches. If present, a suitable mitigation strategy must be adopted. A positive result is likely to trigger the need for a EPS development licence for ensuring this species is suitably safeguarded.
- 10.2 Since only indicative development layouts for Plots 4 and 5 were available to inform this PEA, it is recommended that the following avoidance and / or mitigation measures are incorporated into the final layout to safeguard wildlife and biodiversity. Note that any such layout design will be influenced by the presence of great crested newts if they are recorded during further survey effort. Irrespective of the presence / absence of great crested newt, an Ecological Impact Assessment (EclA) must be completed and approved by the LPA once layout designs for the two plots are suitably advanced.
- 10.3 Due to the close proximity of both plots to native mature tree specimens (particularly the oaks at TN 2 and ash trees at TN4) and areas of semi-natural broadleaved woodland, any future layout must, as a minimum, allow for the protection of these areas following guidance set out by British Standards (BS 5837:2012 Trees in relation to design, demolition and construction). Such protection must incorporate their root protection areas (RPAs) throughout the construction phase and above-ground vegetation from physical damage by robust protective fencing. As an enhancement measure, any new planting scheme must reinforce the existing woodland via additional woodland habitat using native woodland species.
- 10.4 In the interest of integrating bryophytes and fern-like species into the new development, it is recommended that the stone walls at Target Notes 3 and 4 are prioritised for retention and integrated into new layouts where feasible.
- 10.5 Work adjacent the stream at the base of the garden has the potential to impact the watercourse itself as well as the River Taff, notable species such as otter and possibly the adjacent SSSI. It is therefore important that these features are protected from any adverse impacts during any future development work, such as silty run-off or water pollution incidents. Therefore, no work must take place until a Construction and Environmental Management Plan (CEMP) has been prepared and approved by the LPA. This document must be produced in conjunction with the appointed contractor and adequately identify the risks of all potentially damaging activities to the watercourse. It must also prescribe practical measures for avoiding or reducing such impacts during construction. Although above and beyond the scope of this PEA to prescribe specific recommendations before the contractor has been appointed, the following control measures would be expected:

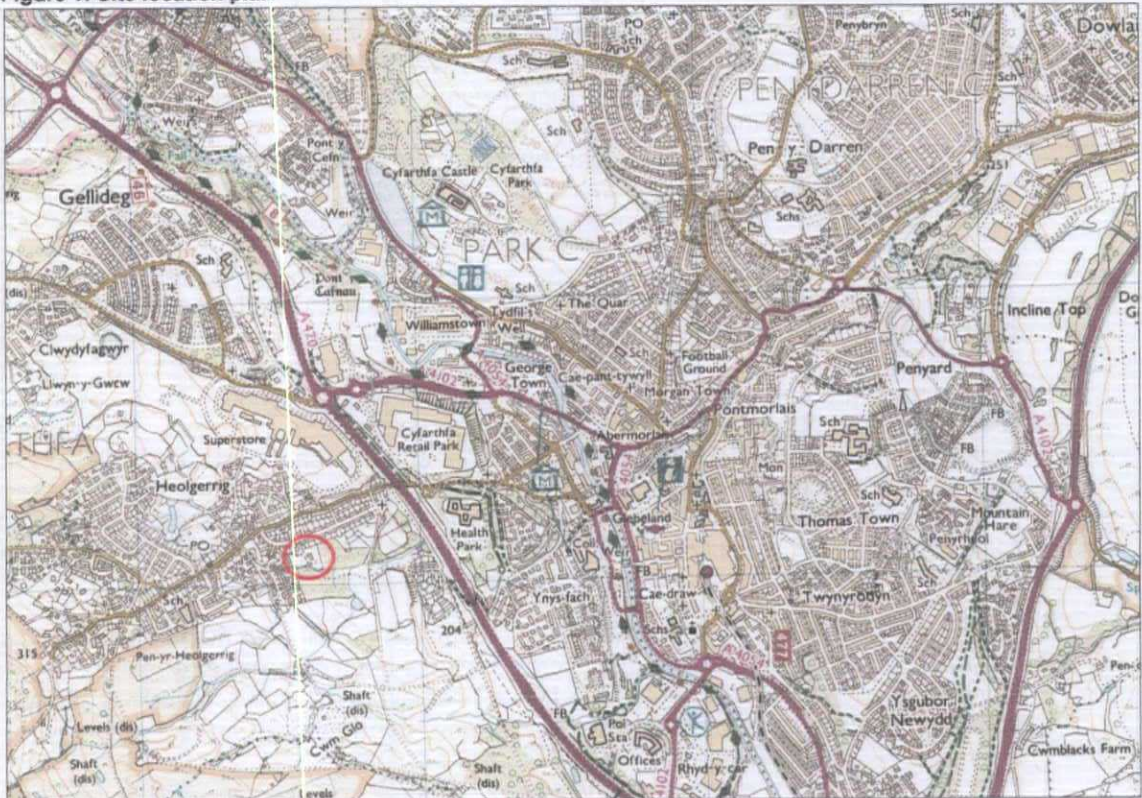
- The document must adhere to Guidance for Pollution Prevention document GPP5 '*Works and maintenance in or near water*' (NRW 2018) and Pollution Prevention Guidelines PPG6 '*Working at construction and demolition sites*' (Environment Agency 2012);
 - No work must be carried out in the watercourse itself;
 - Since the adjacent stream, SSSI and River Taff are susceptible to pollution events, the working site must not only adopt measures to prevent such events from occurring, but also minimise their impact if they do occur;
 - A 'Pollution Risk Assessment' and 'Pollution Incident and Emergency Response Plan' must be approved (and updated as necessary) by the Site Manager to mitigate the risk of pollution and follow guidelines set out in GGP 21 '*Pollution incident response plans*';
- 10.6 Since all woody shrubs and trees on site, as well as the outbuildings associated with Plot 4, are suitable for nesting birds to some extent, precautions must be made during site clearance activities if any such habitat will be removed. Once a nest is established, birds must have access to it at all times until the young have fledged and the nest is no longer active. The only effective way to prevent this is to remove on-site vegetation before the nesting bird season of any given year. This runs from March to August (inclusive) for most species. Therefore, any on-site vegetation must be removed between September and February (inclusive). If this is not possible, then an experienced ecologist must attend site to ensure that no active nests are present prior to site clearance. If an active nest is found, a cordon must be established to mark a safe working zone to prevent the nesting site from being disturbed. The cordon must remain in place until an ecologist confirms that any chicks have fledged.
- 10.7 To compensate for the loss of nesting bird habitat, an appropriate number of bird boxes must be installed on nearby trees before site operations have been completed. Precise specifications and numbers of bird boxes must be advised once final layout designs have been finalised. However, suitable models are likely to include the following: Schwegler 1B box for small birds; Schwegler 2GR boxes for small birds; Schwegler 2H robin box.

11 References

- Anon (2017). '*Guidelines for Preliminary Ecological Appraisal - 2nd Edition*'. Chartered Institute of Ecology and Environmental Management, Winchester
- BS42020:2013 (2013) '*Biodiversity – Code of Practice for Planning and Development*'. British Standards Institution, London
- Collins, J. (Ed.) (2016). '*Bat Surveys for Professional Ecologists – Good Practice Guidelines, 3rd Edition*'. Bat Conservation Trust, London
- Joint Nature Conservation Committee (1993). '*Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit*'. JNCC, Peterborough
- Rose, F. (1981). '*The Wild Flower Key*'. Frederick Warne, London

Appendix I: Site Plans

Figure 1: Site location plan



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Figure 2: Aerial photo of Greenacres showing development footprints for Plots 4 and 5

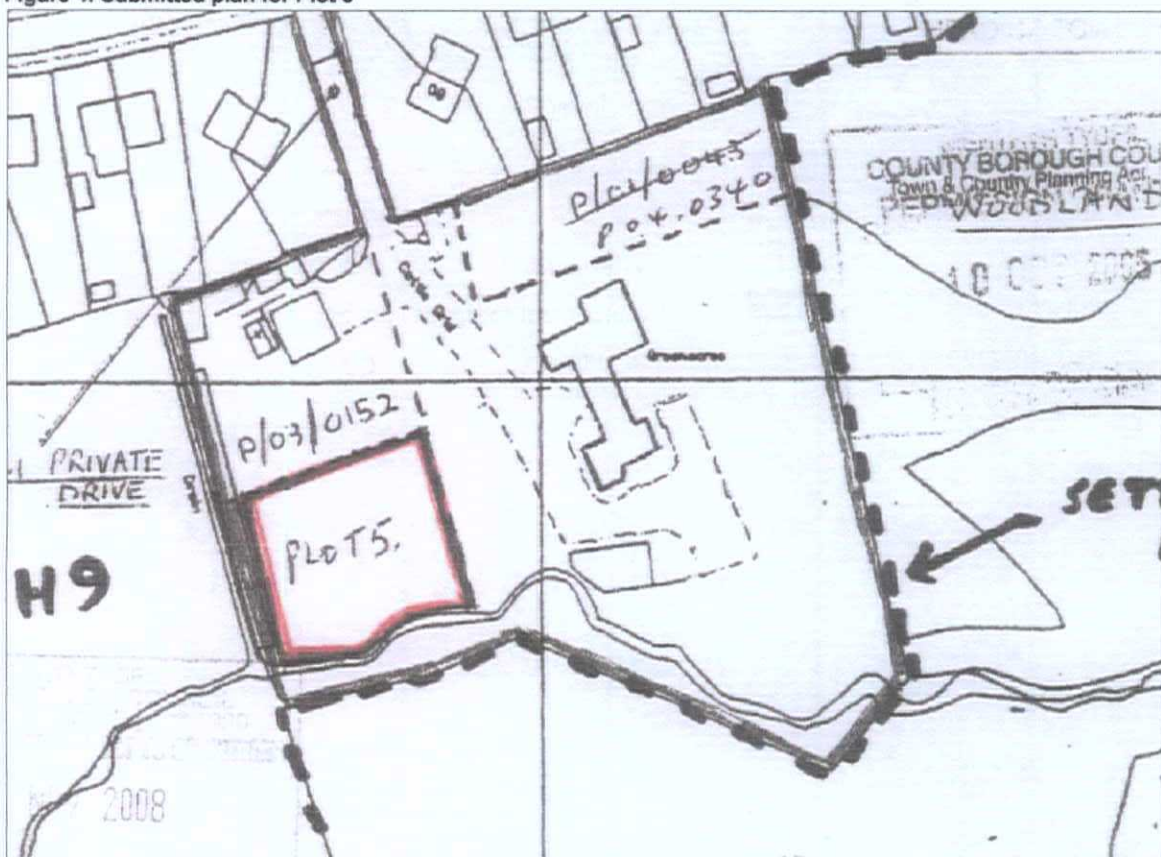


(Source: Google Satellite Imaging 2020)

Figure 3: Submitted plan for Plot 4



Figure 4: Submitted plan for Plot 5



Appendix II: Survey Findings

Figure 5: Phase 1 habitat map

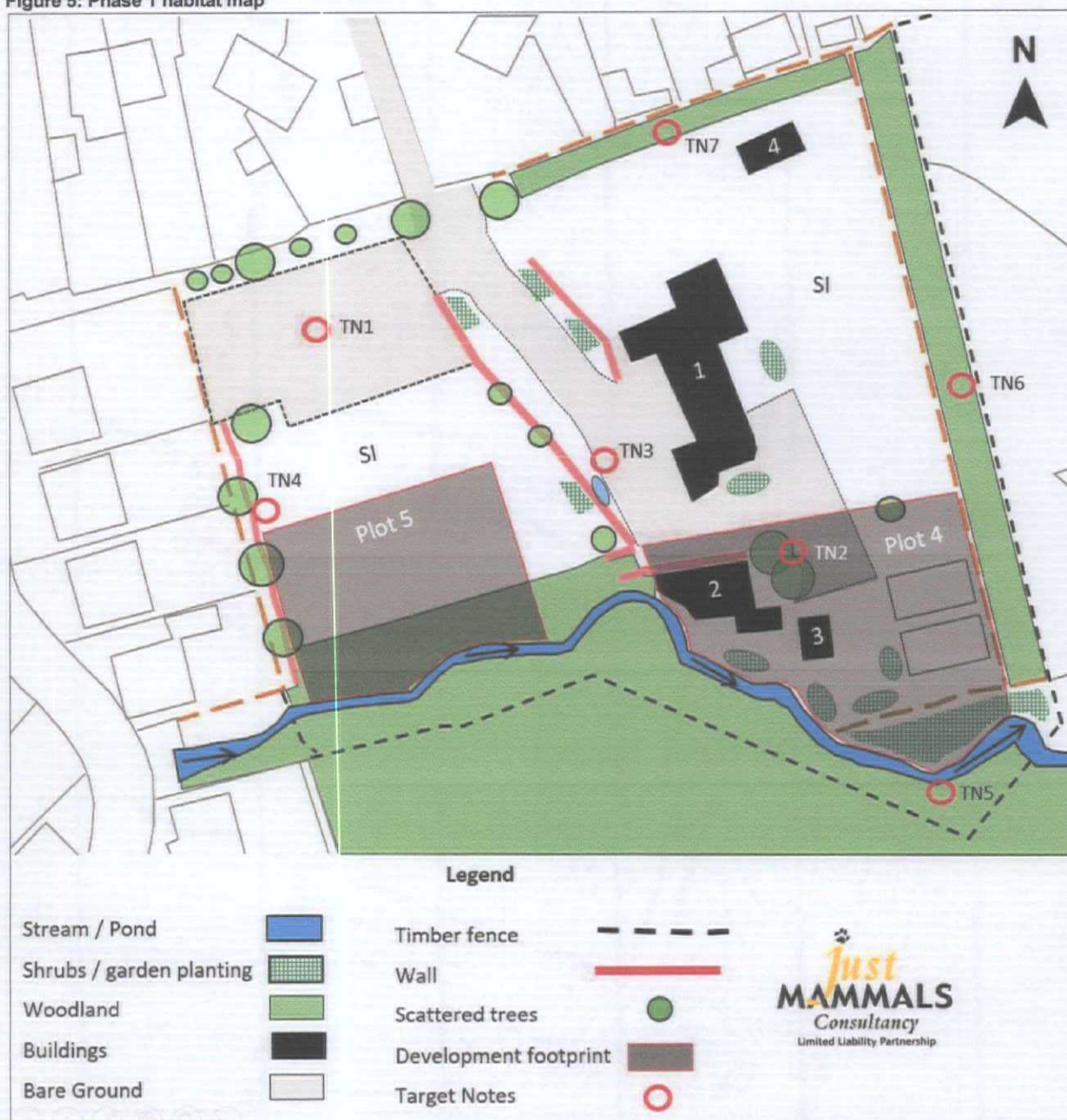
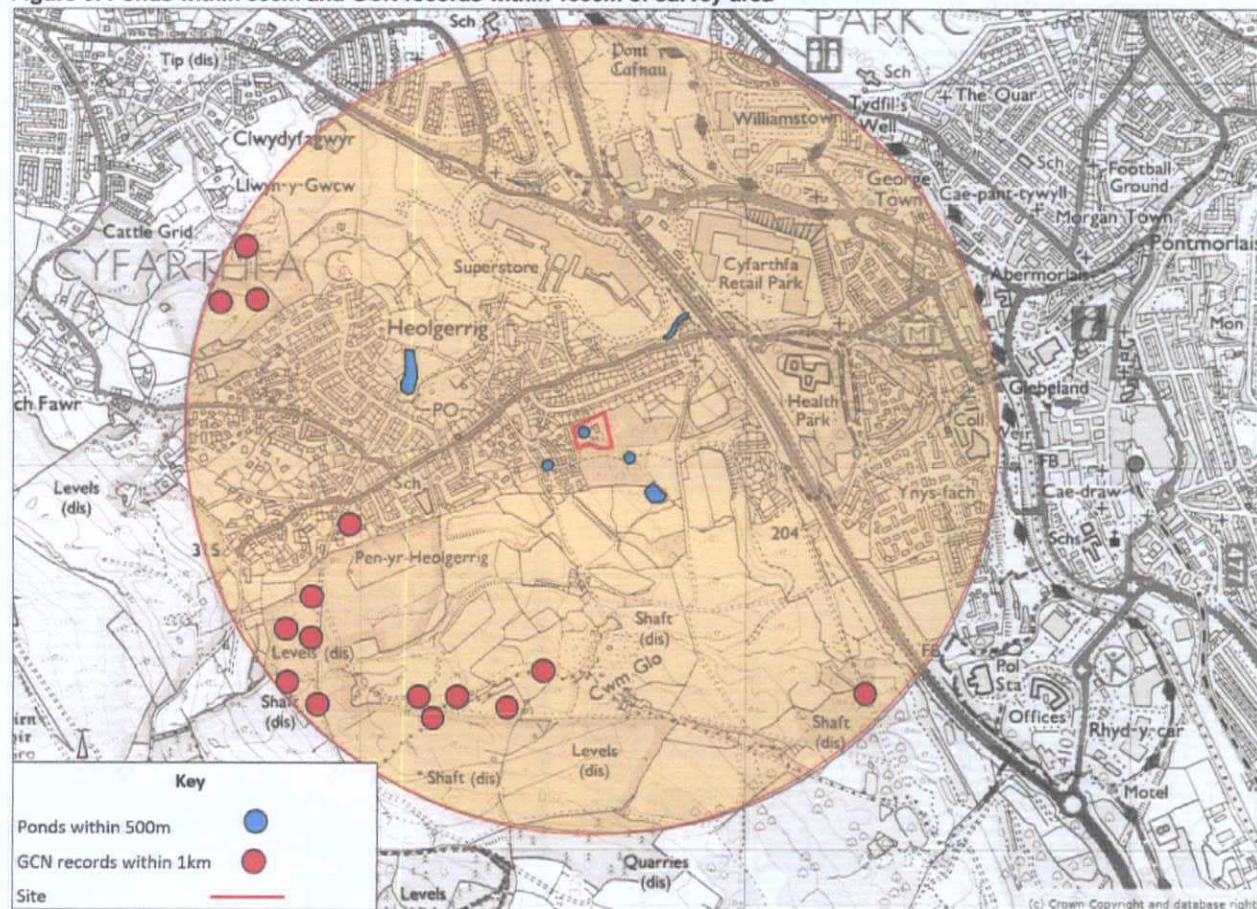


Figure 6: Ponds within 500m and GCN records within 1000m of survey area



Appendix III: Site Photographs

Plate 1: Development footprint of Plot 5 at western end of site



Plate 2: Site entrance looking south



Plate 3: Development of Plot 1 at north-western corner



Plate 4: Stream at southern end of site



Plate 5: Allotments at south-eastern end of site which includes footprint of Plot 4



Plate 6: Garden Pond



Appendix IV: Relevant Legislation

All species of bat in Britain, and their places of rest are protected under the provisions of the Wildlife and Countryside Act 1981 (WCA), Section 9(1), 9(4)(a) and 9(4)(b) as amended by Schedule 12 of the Countryside and Rights of Way Act 2000. Further protection is afforded by the Conservation of Habitats and Species Regulations 2017. In relation to structures used by bats for shelter or protection (i.e. roosts), this legislation makes it an offence to either intentionally or recklessly damage, destroy or obstruct access to any site used by bats, whether bats are present at the time or not, or to intentionally or recklessly disturb bats within a roost.

Infringements under this legislation include building demolition, removal of hollow trees, blocking, filling or installing grills over old mines or tunnels, building alteration or maintenance work, re-pointing of stone walls, getting rid of unwanted bat colonies, re-roofing, remedial timber treatment, re-wiring or plumbing in roofs, treatment of wasps, bees or cluster flies (Mitchell-Jones, 1992; Childs, 2001). Greater horseshoe bat, lesser horseshoe bat, Bechstein's bat, greater mouse eared bat and barbastelle are included in Annex II of the Conservation of Habitats and Species Regulations 2017 and hence require special protection.

Maximum penalties for committing offences relating to bats or their roosts can amount to imprisonment for a term not exceeding six months or to fines of up to Level 5 on the standard scale under the Criminal Justice Act 1982/1991 (i.e. £5000 in April 2001) per roost or bat disturbed or killed, or to both. Bodies corporate and their directors/secretaries are liable for offences under the 2017 Regulations and the WCA. Additionally, where such an offence results in the offender benefitting in a monetary form from the illegal action, confiscation or civil recovery of the proceeds can occur under the Proceeds of Crime Act 2002.

It is sensible to assess as soon as possible if bats are present at potential sites for development – preferable before the land is acquired. In some cases the period required for adequate survey work may span more than one calendar year. If a development, including demolition or change of use, is likely to impact on bats and their roosts then a licence will usually be required. Adequate survey results are a necessary input to any licence application. If bats are not found until late in the development stage this may result in delays while a licence is sought and even in offences being committed.

The law with respect to dwellings and other structures is applied equally. Where disturbance is deemed likely to have a significant effect on bats to survive, breed and rear their young or will affect the local distribution and abundance of the species, a European Protected Species licence issued by Natural Resources Wales. A licence application must demonstrate that the development will not be detrimental to the maintenance and conservation status of the species concerned.

This explanation must be regarded only as a guide to the law. For further details, reference must be made to the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2017 and the Countryside and Rights of Way Act 2000.

Just Mammals Consultancy is an ecological consultancy based in Mid-Wales. Specialising in legally protected mammal, reptile and amphibian species, but providing a wide range of ecological services, it provides appropriate expertise on behalf of a range of clients.

Clients include government departments, local and regional authorities, development agencies, commercial and industrial enterprises as well as statutory nature conservation organisations, wildlife trusts and other charitable bodies.

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