

Biodiversity Strategy

PROJECT TITLE: Proposed residential scheme

SITE ADDRESS : Land to the north of Crabtree Walk, Trefechan

DATE: 29th October 2019

Dear Sir/Madam,

Planning consent is being sought for a housing development within a parcel of land to the north of Crabtree Walk, Trefechan. The site measures approximately 2.8ha in size and is centred at SO 03424 09076. An extended phase 1 habitat survey of the site was completed by Ecological Services Ltd in August 2018. The survey found the site consists of semi improved grassland, bracken dominated scrub, scattered trees, dry stone walling and tall ruderal vegetation. The survey methodology and recommendation can be found in the report '*Extended Phase One Ecology Survey, Land at Trefechan, Merthyr Tydfil*' dated January 2019.

Comments were made on the development proposals through a pre-application enquiry to Merthyr Tydfil County Borough Council in June 2019. Additional work was recommended by the council ecologist to support any future planning applications for the site. In response to the comments made two bat transect surveys and two periods of static monitoring were completed and details are provided below. The details within this document are provided to help refine the ecology mitigation and compensation measures for the site in line with the proposed site layout for the development. A bungalow which was originally proposed for retention as the development was created around it is now proposed for inclusion within the site boundary. A bat scoping survey will be completed with the findings reported and submitted to support this planning application.

1. Bat Transect Surveys - 2019

A summer and autumn bat transect survey were completed within the site boundary. Two surveyors walked a defined route around the site during each survey visit. All bat calls were recorded using Anabat and EM Touch bat detectors and analysed using Analook and Kaleidoscope software.

Bat Transect Surveys

Two bat transect surveys were undertaken around the site. The surveyor route is shown in Appendix 1.

1) Date - 23rd July 2019

Weather Conditions - 15°C, Dry with a light breeze

Surveyors Present - Angus Scott and Archie Scott

Sunset Time - 21:13

First bat recorded was a common pipistrelle foraging to the north east of the site at 21:59. A small amount of pipistrelle activity was noted in this corner of the site by common pipistrelle bats, thought to be one or two individuals foraging in the same area. Occasional calls from common pipistrelle bats across the remainder of the site and a single noctule bat heard and observed flying across the site in a north easterly direction at 22:09.

2) Date- 13th October 2019

Weather Conditions - 10°C, moderate cloud cover, calm and dry.

Surveyors Present - Scott Watkins and Keith Allen

Sunset Time - 18:25

Higher number of bats observed feeding within the site boundary. Main areas of activity were around the wooded area adjacent to the current houses, the north east and south eastern corners of the site. Higher numbers of common pipistrelle bats were recorded than the summer transect survey. Again there were also an increase in Noctule activity on site than in previous survey work with occasional myotis species bat calls. During the time

when light levels allowed the visual scrutiny of the bat activity, it was obvious that the feeding bats made repeated passes.

Static Bat Surveys

Two periods of static bat monitoring have been completed within the site boundary. Two Anabat Express bat detectors were left for a period of 5 nights each time to record bat activity within the area, the location of the detectors is shown on Appendix 2. All recorded data was downloaded and assessed using Analook soft ware. The survey periods and a brief description of the activity recorded is given below.

- Dates of Static Monitoring 15th - 19th July

A fairly low level of bat activity was recorded during the monitoring session. Common and Soprano Pipistrelles were the most common species of bat recorded on the site. An occasional noctule call was also noted. The majority of activity was noted between sunset and midnight.

- Dates of Static Monitoring 10th - 15th October

A much higher level of bat activity was recorded during this period of monitoring. Majority of activity each night was recorded early in the evening with the earliest call recorded at 18:49 by a lesser horseshoe bat. Frequent myotis calls were noted each evening with occasional common pipistrelle, lesser horseshoe, noctule and brown long eared bats also recorded. A much higher number of calls were recorded by anabat 1 which is located close to the small woodland area within the site.

The highest levels of bat activity were recorded during the 13th October. There were abundant bat calls recorded from between midnight and dawn. The majority of calls were from a myotis species of bat through to be a whiskered/ Brandt's and a higher level of lesser horseshoe bats recorded during this night as well.

Conclusions

No evidence of roosting activity within the buildings by bats was noted during the walked transect surveys. Whilst bat activity was noted early in the evening during the walked

transects, the bats did not appear from the direction of the buildings. This does not conclusively rule out the presence of roosting bats in the buildings however.

The higher levels of bat activity with a greater variety of bat calls, most notable lesser horseshoe bat, during the autumn survey is interesting. However given the location of the surrounding mines and caves in the wider area perhaps not unexpected. Bats are likely to be commuting to their hibernation sites in readiness for winter or mating spots. The retention of dark corridors to allow continued commuting use of the site by bats will be important.

2. Reptile Mitigation Strategy

The extended phase 1 survey completed in 2018 found the land within the site boundary to have at least moderate potential for common reptile species to be present within the site boundary. Refugia surveys for reptiles were not recommended for this site due to concerns of disturbance by members of the public and the large number of natural basking sites found across the site. It was thought unlikely that reptiles would use refugia resulting in a false negative result. Instead it was recommended that presence of reptiles within the site is assumed and a series of mitigation and compensation measures implemented during any future development works.

Whilst it is thought highly unlikely that great crested newts are present within the site boundary, their presence cannot be entirely ruled out. As a precautionary approach, all contractors will be briefed on the potential for great crested newts in the site and will be vigilant of them. If great crested newts are encountered within the site boundary at any point during the proposed site clearance, all work will cease. Advice will be sought from a suitably experienced ecologist. The advice may include that work cease until a European protected species licence is sought from Natural Resources Wales (NRW).

Construction Mitigation Measures

The land within this site boundary consists of longer and shorter semi improved grassland, rubble piles / dry stone walling, woodland, scrub and tall ruderal vegetation. The habitats within the site are thought to have potential for use by reptiles for ***basking and foraging***

during the months of ***March to September inclusive***. The rubble / dry stone walling and tree roots are also thought to have hibernation potential for reptiles. The ***hibernation season*** runs from ***November to February inclusive*** but depends on temperatures at the time of year.

The below mitigation measures will be implemented during the construction and development process to ensure reptiles are protected from any negative impacts.

- Areas of natural vegetation currently present within the site boundary will be retained around the north and western boundary of the site as shown on the site plan provided within Appendix 3. These areas will be securely fenced off prior to the start of site clearance works using heras fencing or similar. No machinery, site materials or site personal will be allowed into this area without written agreement from the supervising ecologist.
- All site contractors will be given a tool box talk covering the legislation protecting reptiles, what reptiles look like, where to find the and what to do if they are found prior to site clearance works starting.

Vegetation Clearance - Grassland & Scrub

- Grassland vegetation clearance work within the site will be undertaken between the 1st April and 30th September. This timing restrictions ensure that reptiles are active and likely to move away from the development site of their own accord.
- In the first instance the vegetation will be cut, using hand tools where possible or an adjustable flail attachment on a JCB, to a height of between 100-150mm. The cut material will be raked and removed from the site boundary.
- Any reptiles present should naturally move away of their own accord due to the disturbance from cutting. However if any reptiles or other fauna are encountered during this operation they will either be carefully collected and moved away onto the undisturbed areas of the site or allowed to do so of its own accord.
- After 24 hours the grass will be cut to ground level (a maximum height of 50mm) and the arisings raked and removed the site. Any reptiles or other fauna will be treated as above.

Destructive Searching

- Once the grassland and scrub have been cut to ground level the ecologist will walk over the site and assess the potential of these areas to continue to support reptiles. If the ground is rocky or a thatch of vegetation remains targeted areas will be subject to supervised destructive searching.
- Any areas of ground that require destructive searching will be supervised directly by a suitable experienced ecologist. A JCB using a toothed bucket will gently remove the top 10cm of soil allowing any animals present to escape. The soil will be removed in strips and moved to the side. At the end of the day the soil will be tracked back into the ground to leave bare earth.
- If at any point reptiles are observed, the JCB will stop and the supervising ecologist will retrieve the animal. The reptile will then be put in a secure container and moved to the retained areas of vegetation within the site boundary. A log of animals caught will be kept and shared with the county ecologist once clearance works have been completed.

Woodland, Trees & Tree Roots

- Given the potential for nesting birds to use the tree canopies and reptiles to use the tree roots, the timing of the removal of trees is important. Any tree that requires removal will be removed in two stages.
- First stage - the trees to be removed will be cut down to a height of 50cm above ground level between the 1st September and 1st March. The brash will be removed from the site or chipped.
- Second stage - the tree roots will be grubbed up using a toothed bucket of a JCB or an appropriate sized digger. The roots will be removed under ecological supervision and any reptiles found will be captured and moved to the retained habitat areas. The roots systems will be removed slowly and gently to allow any reptiles present to escape. All roots will then be removed from the proposed development site. The second stage cannot be completed during the winter months of October to February inclusive.

-
- Tree root removal will only take place after the two stage grassland cut. Cutting the grass before removing the root systems and reptiles which might have been present, will naturally be encouraged to move from the site making them less likely to be using the tree roots.

Rubble / Dry Stone Walling

- All rubble or dry stone walling within the site boundary will be removed between the months of 1st April and 30th September. This timing restrictions ensure that reptiles are active and likely to move away from the development site of their own accord.
- Do to the size and weight of some of the materials within the site their removal will require the use of machinery such as a JCB or similar machine. Machinery drivers will be given a tool box talk on the potential presence of reptiles and what to do if one is seen. The materials will be removed as gently as possible to allow any sheltering animals to escape.
- A portion of the stone work will be retained to create rubble piles within the retained vegetation areas to the north and west of the site and some small sections of dry stone walling within the site boundary.
- Once all vegetation and material have been cleared from within the site boundary, the construction site footprint must remain in a vegetation free state. This will help to reduce the likelihood of reptiles using the site while construction works are underway.

Post Construction Mitigation Measures

Once the construction works have been completed any reptiles within the area will naturally be able to recolonise the development site. The below compensation measures will be implemented within the wider site to improve the area for use by reptiles and sustain the population into the future.

- Any fencing used within the site boundary will allow the passage of small animals such as reptiles through the development site. This will allow reptiles to naturally recolonise areas of suitable habitat within the site boundary once development

works are complete. Fencing will either be raised 13cm from the ground or will have 13cm by 13cm gaps cut into it every 3m.

- Enough of the rubble recovered from the dry stone walling across the site will be retained and used to create habitat piles within the retained vegetation to the north and west of the site. Four piles measuring 2m by 2m and at least 1m high will be created in the approximate areas shown in Appendix 3.
- A section of dry stone walling which allows reptiles access into the rubble interior of the wall will be created along the periphery of the public open space to the south east of the site and by the proposed path at the south west of the site. The walling will measure at least 5m in length and 1m in height. Some cement maybe required to allow the feature to be compliant with health and safety requirements. The exact design and location of the walling will be agreed with the supervising ecologist and county ecologist in writing, prior to its construction.
- The retained vegetation areas to the north and west of the site will requires some form of management to prevent bracken encroachment and the establishment of new planting. The grassland vegetation will be subject to a 2 yearly cut as minimum to help retain areas of shorter and longer vegetation suitable for reptiles.

3. Nesting Birds

The wooded areas and scattered trees have the potential to be used by ***nesting birds*** between the months of ***March to August*** inclusive. Tree removal is required to facilitate the proposed development works.

- Any tree removal work above ground level will be completed outside of the bird nesting season of March to August inclusive. If this is not achievable an ecologist must inspect any trees or ground vegetation with the potential for birds to be present, for active birds' nests prior to removal works beginning. If an active nest or activity indicating a nest might be present is identified a buffer zone of 5m around the nest must be observed until the chicks have fledged. Only then can the vegetation be removed and this can take up to 6 weeks.

-
- Integrated bird boxes must be installed within 25 % or 10 separate new buildings on site. The bird mitigation will be installed as high as possible within the walls, no lower than eaves height. The nest boxes will be fitted into the block work during construction of the building and the access hole will be left exposed.
 - The below boxes will be installed and photographs of each box type are provided in Appendix 4. If the below bricks are unavailable, a different specification of box can be used providing it is agreed in writing with the supervising ecologist:
 - 1x 1sp Schwegler Sparrow Terrace box in units 1 and 4,
 - 1 x Schwegler Brick Nest Box (Type 24) in units 14 and 12,
 - 1 x WoodStone Build in Swift Next Box B in 20 and 21,
 - 4 x WoodStone Build in Open Next Box in units 28, 34, 35 and 42

4. Lighting

Wildlife sensitive lighting of the site will be critical to ensure it remains useful for a range of nocturnal animals. The bat transect surveys found a good level of usage by bats in the autumn time in particular. It is important that lighting does not restrict their movement across the landscape. Along the protected dark corridors light levels will be reduced to as close to 1 Lux that is practically possible to achieve.

Lighting will be installed only where there is a necessity and that there is a genuine need to mitigate for health and safety implications for the people using the development site. The lighting on site will have no UV content. All lighting mounted on stanchions will be downward angled and of such a design that limits any light spill laterally outside of the designated target area. Recessed bulbs or LED's and/or baffles can be used to control this.

In regards to bats and lighting the Bat Conservation Trust have made the following recommendations:

- Do not "over" light. This is a major cause of obtrusive light and is a waste of energy. Use only the minimum amount of light needed for safety. There are published

standards for most lighting tasks, adherence to which will help minimise upward reflected light.

- Eliminate any bare bulbs and any light pointing upwards. The spread of light should be kept near to or below the horizontal.
- Use narrow spectrum bulbs to lower the range of species affected by lighting.
- Use light sources that emit minimal ultra-violet light. Insects are attracted to light sources that emit ultra- violet radiation.
- Reduce light-spill so that light reaches only areas needing illumination. Shielding or cutting light can be achieved through the design of the luminaire or with accessories, such as hoods, cowls, louvers and shields to direct the light.
- Reduce the height of lighting columns. Light at a low level reduces ecological impact. However, higher mounting heights allow lower main beam angles, which can assist in reducing glare.
- For pedestrian lighting, use low level lighting that is directional as possible and below 3 lux at ground level.
- Use embedded road lights to illuminate the roadway and light only high-risk stretches of roads, such as crossings and merges, allowing headlights to take up the slack at other times.
- Limit the times that lights are on to provide some dark periods for wildlife.

Light Colour can also impact on disturbance. Stone (2014) recommends that Warm White LED light is used as this has a reduced disturbing effect on bats, and prey that bats feed upon.

Best Wishes

Ash Harris
Director
Ecological Services Ltd

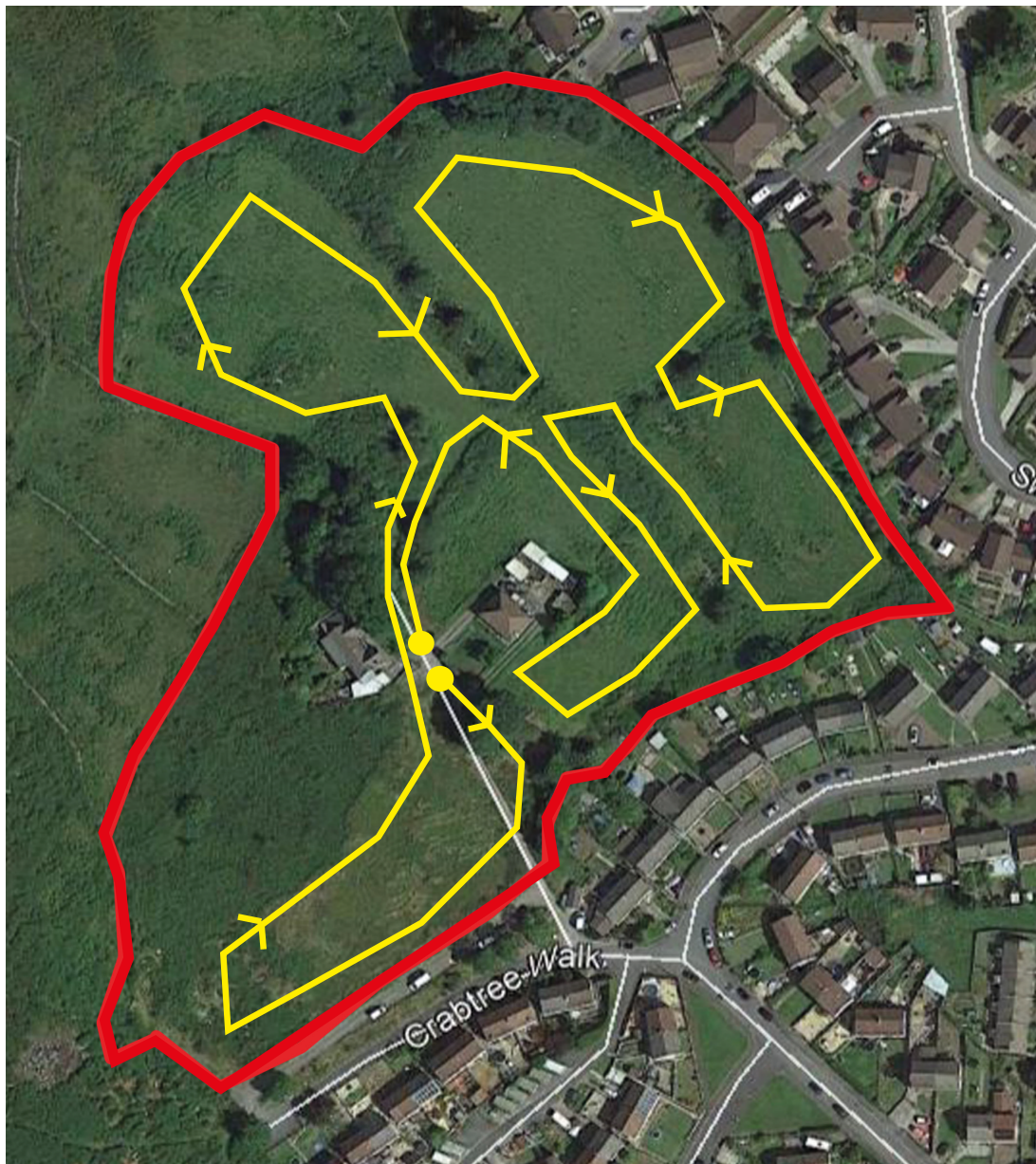
Signed: Ash Harris **Date:** October 2019

Appendix 1 - Bat Transect Surveyor Route

LAND ADJACENT TO CRABTREE
WALK, TREFECHAN

Transect Route

October 2019



— Approximate Transect
Route taken by surveyors

Appendix 2 - Location of Static Bat Detectors

LAND ADJACENT TO CRABTREE
WALK, MERTHYR TYDFIL

Anabat Locations

October 2019



Approximate Anabat Location
during Static Monitoring

Appendix 3 - Proposed Reptile Mitigation

CRABTREE WALK, TREFECHAN, MERTHYR TYDFIL.



Appendix 4 - Proposed Bird Boxes

- WoodStone Build in Swift Next Box B



- Schwegler Brick Nest Box (Type 24)

- 1sp Schwegler Sparrow Terrace box



- WoodStone Build in Open Next Box