

Bats & Trees Survey Report



Project: PV Array Site

Instructed by: Morgan Sindall

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1. Introduction

The applicant is seeking permission to develop a parcel of land adjacent to Goitre Lane, Merthyr Tydfil. The site is located on the northern outskirts of Merthyr Tydfil town in the county borough of Merthyr Tydfil. Current proposals include the construction of a Photovoltaic Array on the sloping area of a larger parcel of land, to the north east.

An Updated Preliminary Ecological Assessment (PEA) of all land within the development boundary was completed by Ecological Services Ltd in December 2023. The PEA report highlighted a number of ecological considerations that would be required should development plans for the site progress. One consideration was the use of the site by bat species therefore bat surveys of any trees have been proposed prior to any removal or pruning.

An Arboricultural Impact Assessment (AIA) was undertaken by Arboricultural Technician Services Ltd. The development proposals will require the loss of a small number of trees scattered around the site. Tree locations can be found within the Arboricultural Report including: Tree Survey Data & Tree Constraints Plan, Arboricultural Impact Assessment, Tree Protection Plan and Method Statement by ArbTS dated November 2024. For completeness trees within and outside of the site boundary (but within a zone of influence) were surveyed.

Ecological Services Ltd were instructed to undertake bat surveys within the proposed development site to inform the proposals at site. Advice on surveying trees for bat use can be found in the BCT Survey Guidelines 2023 (4th Edition).

1.1 Site Description

The proposed development site comprises a parcel of land to the north east of a larger parcel of land and is centred at NGR SO0515708293. The proposed development site sits within a wider plot of land and there is no clear boundary between parcels of land proposed for development. The original instruction for survey work covered the land within the wider site boundary. Development proposals for individual areas of the wider site boundary are now being progressed.

The site lies adjacent to Pen Y Dre School in the north and First Avenue to the east. To the south of the PV Array site a new primary school is proposed. In the south, south east and south west the wider landscape is dominated by residential dwellings and associated infrastructure with the town of Merthyr Tydfil approximately 1.8 km to the south of the site. To the north just beyond Pen Y Dre School lies the A465, the landscape beyond comprises open countryside with hedge bound fields, small areas of woodland and open moorland.

1.2 Survey Constraints

No survey constraints were experienced during the ground level tree assessments of trees (GLTAs). The survey visit was undertaken when no leaves were present on the trees and visibility around each tree was possible.

1.3 Surveyor Experience

Beth Lewis is an associate member of Chartered Institute of Ecology and Environmental Management (CIEEM). Beth is an ecologist with 6 years experience undertaking a wide range of flora and fauna surveys. All survey work is undertaken following JNCC Phase 1 Survey Guidelines and CIEEM Guidelines for Preliminary Ecological Appraisal (2nd Ed 2017).

Vicky is an ecologist with at least nine years' experience. She has worked in larger consultancies previously completing a wide range of flora and fauna surveys, completed professional training courses and attended informal botanical meetings to gain valuable knowledge. This experience allows Vicky to assess and identify common habitats as per the JNCC Phase 1 Survey Guidelines. Vicky is also a licenced dormouse and great crested newt worker and holds licences from Natural Resources Wales for both species.

1.4 Legislation

All British bats are a European protected species and are protected under the Conservation of Habitats and Species Regulations 2017. In summary, they are protected from:

- Deliberate capture, killing and injuring,
- Deliberate disturbance of a breeding site or resting place,
- Damage or destruction of a breeding site or resting place.

Schedule 5 of The Wildlife and Countryside Act (1981) also protects all species of British bat and their roosting locations. British bats are protected from intentional or reckless disturbance and or obstruction of their roosting places. Barbastelle, Bechstein's, Noctule, Brown long-eared, common pipistrelle, soprano pipistrelle, greater horseshoe and lesser horseshoe bats are also listed in section 7 of the Environment (Wales) Act 2016 which makes them a key species to sustain and improve biodiversity.

2. Ground Level Tree Assessment for Bat Roost Suitability

An assessment of trees for their potential bat roosting suitability should start with a ground level tree assessment (GLTA). The aim is to assess a tree, via visual inspection and binoculars, for features which bats could use. The surveyor is looking for any cavity, gap or crack in the tree which bats could use for roosting purposes.

All trees proposed for removal or to be affected by the development proposals were subject to a GLTA. For was of reference the tree numbering used within the ArbTS report is used within this report. Whilst many of the trees will remain, they could be subject to noise and light disturbance from the proposed works and development. Therefore for the purposes of this section of the report all trees are subject to the same level of survey work.

2.1 Survey Methodology

Each tree was subject to a GLTA on the 12th February 2024. This is an optimal time of year to undertake such surveyors as the leaf cover is at its minimum so features high up within the tree can be seen.

The surveyors stood at the base of each tree and visually inspected it using close focusing binoculars. The tree is then categorised into NONE, FAR or PRF bat roost potential based on the features observed. An extract of Table 4.2 and 6.2 from the BCT Bat Surveys for Professional Ecologists - Good Practice Guidelines 2023 (4th Edition) is given below on how trees should be categorised.

Suitability	Description of Roosting Features
NONE	Either no PRFs in the tree or highly unlikely to be any
FAR	Further Assessment Required to establish if PRFs are present in the tree
PRF	A tree with at least one PRF present
PRF-I	Tree with PRFs which are only suitable for individual or very small numbers of bats due to size of lack of suitable surrounding habitat
PRF-M	Tree with PRFs which are / is suitable for multiple bats. Maternity colony maybe present

Table 1 - Bat Roost Categories for Trees

2.2 Survey Results

The site encompasses 3 trees and 6 tree groups listed within the AIA report along with 1 additional tree identified during this ecological survey visit (T6, T7, T8, G6, G7, G8, G9, G10, G11 and Additional Tree A). Additional Tree A has an approximate grid reference of SO 05141 08193 and is located on the eastern boundary of the site, further east than the G6 scrub line.

See Table 2 for result and Appendix 1 for tree photographs. An extract of the Tree Protection Plan from ArbTS is provided in Appendix 2 with the trees and tree groups surveyed.

Tree No.	Tree Tag	Species	PRF Height	PRF Aspect	PRF Type	DBH	Bat Roost Suitability	Notes
T6	-	Sycamore	-	-	-	Approx. 15 cm	NONE	Within thick scrub. Splits into 6 tall stems. No PRFs present.
T7	-	Oak	-	-	-	Approx. 30 cm	NONE	1 main trunk with thin ivy stems. Stems are too sparse and thin. Ivy is tight to trunk of tree and so does not create any plating or cavities. No PRFs present.
T8	-	Sycamore	-	-	-	Approx. 20 cm	NONE	Multi stemmed tree at edge of scrub line. No PRFs present.
G6	-	Hawthorn mixed scrub	-	-	-	-	NONE	Thin stemmed scrub line. No PRFs present.
G7	-	Goat willow group	Feature A- 30 cm- 100 cm.	Feature A- North	Feature A- splits	-	Feature A- NONE	Multiple trees within group. Trees are multi stemmed. Feature A- 1 tree has long, superficial splits extending along upper side of trunk. No cavities within and so no shelter afforded for bat roosting. Feature B- stem has decay hole extending up trunk. No sheltered cavity within for bat roosting.
			Feature B- 100 cm- 150 cm	Feature B- North	Feature B- decay hole		Feature B- NONE	
G8	-	Goat willow group	Feature A- 3.5 m	Feature A- N/A	Feature A- Splintered limb	-	Feature A- NONE	2 multi-stemmed trees. Feature A- Splintered top of limb where branch has broken off. Feature B-long split in trunk. East aspect has small opening and extends to a larger opening through trunk to west aspect. Wedge shaped cavity at top and bottom of feature allowing for individual opportunistic bat to roost in crevice.
			Feature B- 2.5 m	Feature B- East	Feature B- split		Feature B- PRF-I (LOW)	
G9	-	Goat willow group	-	-	-	-	NONE	Group of multi-stemmed trees. Sprawling horizontal branches. No PRFs present.

Tree No.	Tree Tag	Species	PRF Height	PRF Aspect	PRF Type	DBH	Bat Roost Suitability	Notes
G10	-	Goat willow group	-	-	-	-	NONE	Group of multi-stemmed trees. Sprawling horizontal branches. No PRFs present.
G11	-	Goat willow group	-	-	-	-	NONE	Group of multi-stemmed trees. Sprawling horizontal branches. No PRFs present.
Additional Tree A	-	Unknown	Feature A- 3.5 m	Feature A- west	Feature A- split	Approx. 35 cm	PRF-I (MODERATE)	Feature A- large split in main trunk of tree. Cavity looks to be sheltered from elements with thin but long entrance (approx 1 m long).

Table 2 - Tree Assessment Information

Trees T6, T7, T8 and tree groups G6, G7, G9, G10 and G11 had no PRFs present and therefore are classified as having **NONE** bat roost suitability.

Tree group G7 has 2 potential roost features present. Feature A and Feature B have **NONE** bat roost suitability. These were superficial splits within the trunk that did not extend into the trunk deep enough to provide any sheltering opportunities for bats from inclement weather or predation. These did not extend into the trunk further than the initial entrance of the splits, leaving them too shallow to allow for any bat roost suitability.

Tree group G8 has 2 potential roost features present. Feature A has **NONE** bat roost suitability. This feature was an upward facing splintered end where a limb has previous snapped off. All splits within the end end of the limb were insignificant and provided no crevices large enough for bats to roost. The upward nature of the limb end meant there was no shelter from the elements. Feature B has **PRF-I bat roost suitability**. This feature was a vertical split whin the main trunk. The split extends though the entire trunk and has 2 entrances. The cavity looks to be tight from the east but wider on the western opening, giving little thermal insulation. Individual, opportunistic bats could roost within the presumed, wedge shaped crevice at the top or bottom ends of the split.

Additional Tree A is located at the east boundary of the site, further east than G6 scrub line (approximately grid reference: SO 05141 08193). This tree has 1 potential roost features present. Feature A has **PRF-I bat roost suitability**. This is a vertical split within the main trunk which could extend into a larger cavity within the tree. The thin opening is large enough for bats to occupy the cavity but tight enough to provide some shelter from inclement weather.

2.3 Survey Recommendations

All **NONE** bat roost suitability trees can be removed without further consideration to bat roosting use.

G8 and Additional Tree A have been identified as having potential roost features (PRFs) with bat roost suitability for individual numbers of bats potentially. **G8 and Additional Tree A are categorised as PRF-I trees.** Removal of trees G8 and Additional Tree A should be avoided in the first instance. If removal of these trees or cannot be avoided, they must be removed over winter when bats are least likely to be present.

3. Conclusions and Recommendations

Survey work has been undertaken to establish the presence or likely absence of roosting bats within trees outlined in the ArbTS (2023) AIA report. The proposed development works within the site boundary will result in the loss of some trees to create a suitable access into the development site and also to accommodate future construction work. Based on the Arboricultural Impact Assessment dated 6th November 2023 and a rough boundary of construction work provided by Morgan Sindall, 3 trees (T6-T8), additional Tree A and 6 groups of trees (G6-G11) are within the site boundary for the PV Array development.

Trees within this site (T6, T7, T8, G6, G7, G9, G10 and G11) were found to have **NONE** bat roost suitability. All can be removed with no further consideration to bat roosting use.

Whilst roosting use of **PRF-I category trees** by bats has not been confirmed, G8 and Additional Tree A contained features that bats could use. Given the transitory nature of bats the probability of finding them within a tree is limited unless year round surveys are undertaken. As a precaution, when trees with limited suitable bat roosting features are identified but roosting use is not confirmed mitigation measures are still required.

- **The below recommendations are made for G8 and Additional Tree A:**
- Removal of **PRF-I** bat roost trees should be avoided where possible in the first instance.
- A sensitive lighting scheme should be considered if lighting is necessary within close proximity to **PRF-I** bat roost trees to avoid disturbance to potential roosting bats within PRFs.
- Noise disturbance from temporary site works and/or from the permanent development should be kept to a minimum when in proximity to **PRF-I** bat roost trees to avoid disturbance to potential roosting bats within PRFs.
- **If removal of PRF-I bat roost trees is unavoidable the below recommendations are made:**
- **PRF-I** bat roost trees must be felled during the winter when bats are least likely to be present.
- If bats or evidence of bat use is found within any tree proposed for removal or reduction all work must cease. NRW will be contacted for advice on how to proceed. Their advice is likely to include that a development licence from NRW is sought prior to the tree being pruned.

Reference List

- Bat Conservation Trust (2023) '*Bat Surveys for Professional Ecologists; Good Practice Guidelines*' (4th Edition)
- Henry Andrews (2018) '*Bat Roosts in Trees: A Guide to Identification and Assessment for Tree-care and Ecology Professionals*'
- ArbTS (22nd Novemebr 2024) '*Arboricultural Report including: Tree Survey Data & Tree Constraints Plan, Arboricultural Impact Assessment, Tree Protection Plan and Method Statement*'

Appendix 1 – Tree photographs



Photograph 3. T7. Oak. No PRFs present. Ivy stems are thin and sparse and do not create plating or cavities. NONE bat roost suitability.



Photograph 4. T7. Oak. View from south aspect.



Photograph 6. G6. Hawthorn and mixed scrub. View from south of site. No PRFs present. NONE bat roost suitability.



Photograph 7. G6. Hawthorn and mixed scrub.
View from north of site.
Photograph 5. 18 Sycamore. No PRFs present.
NONE bat roost suitability.



Photograph 8. G7. Goat Willow group. View from north of entire tree group. NONE bat roost suitability.



Photograph 9. G7. Goat Willow group. Feature A. NONE bat roost suitability.



Photograph 10. G7. Goat Willow group. Feature B. NONE bat roost suitability.



Photograph 11. G8. Goat Willow group. View from north of tree group. PRF-I (LOW) bat roost suitability.



Photograph 12. G8. Goat Willow Feature B- PRF-I (LOW) bat roost suitability.



Photograph 13. G8. Goat Willow group. Feature A- NONE bat roost suitability.



Photograph 14. G9. Goat Willow group. No PRFs present. NONE bat roost suitability.



Photograph 15. G10. Goat Willow group. No PRFs present. NONE bat roost suitability.



Photograph 16. G11. Goat Willow group. No PRFs present. NONE bat roost suitability.



Photograph 17. Additional Tree A. View from west of tree. PRF-I (MODERATE) bat roost suitability.



Photograph 18. Additional Tree A. Feature A- PRF-I (MODERATE) bat roost suitability.

Appendix 2 – Tree Locations

