



Merthyr Tydfil County Borough
Council
Rhydycar Bridge, Merthyr Tydfil
Ecological Constraints Report

Document Ref: ECR-MTCBC-2101

ISSUE	REVISION	STAGE	DATE	PREPARED BY	APPROVED BY	SIGNED
-------	----------	-------	------	----------------	----------------	--------

1	-	DRAFT	22 Nov 2021	ESH	BF	
---	---	-------	-------------	-----	----	--



CONTENTS

CONTENTS	2
EXECUTIVE SUMMARY	3
1. INTRODUCTION	4
Background.....	4
Scope	4
Aims	4
2. METHODOLOGY	5
Desk Study	5
Walkover Survey	5
Preliminary Bat Roost And Nesting Bird Assessment	5
Otter Survey.....	6
Limitations	6
3. RESULTS	7
Desk Study	7
Walkover Survey	10
Preliminary Bat Roost And Nesting Bird Assessment	10
Rope Accessed Aerial Assessment	10
Otter Survey.....	10
4. LEGISLATION & POLICY	11
Overview	11
Wildlife And Countryside Act 1981 (As Amended)	11
Environment (Wales) Act 2016	12
National Planning Policy Framework	12
Merthyr Tydfil Council Local Development Plan (Adopted January 2020).....	12
5. CONCLUSIONS & RECOMMENDATIONS	14
Sincs	14
Bats.....	14
Birds	14
Fish	14
Otter	14
Pernicious Weeds.....	14
Other Considerations And General Recommendations	15
6. REFERENCES	16
APPENDICES	17
Appendix I - Site Location	18
Appendix II - Site Photos	19

EXECUTIVE SUMMARY

Ecoleg LLP were commissioned by Merthyr Tydfil County Borough Council to undertake an ecological assessment at Rhydycar Footbridge on the Afon Taf to ascertain ecological constraints to the proposed bridge replacement works and associated vegetation clearance.

Following an initial scoping visit and subsequent walkover survey, several constraints were identified as potential constraints to the proposals. Ecological features of note included priority habitats such as broadleaved woodland and running water. Such habitats were considered potentially suitable to support protected species such as bats, nesting birds, and otters. The presence of the invasive species Japanese knotweed was also identified.

Follow up surveys were subsequently commissioned and undertaken by Ecoleg in order to establish the likely presence and/or absence of the above species. Following endoscope inspection of the bridge structure it was determined that the bridge has negligible potential for roosting bats. No signs of otter holts were recorded within 100m up or downstream of the bridge and no bridges were nesting on the bridge structure.

Recommendations to avoid/reduce ecological impacts due to the proposals include; undertaking any vegetation clearance outside of the nesting bird season, a tool box talk delivered to contractors ahead of commencement and the inclusion of localised enhancements to benefit local wildlife and improve the resilience of the ecosystem within the context of the site.

1. INTRODUCTION

Background

- i. Ecoleg LLP were commissioned by Merthyr Tydfil County Borough Council (MTCBC) to undertake an ecological constraints survey at Rhydycar Bridge, Merthyr Tydfil ahead of the proposed replacement of the existing footbridge.
- ii. Rhydycar Bridge is located to the southwest of Merthyr Tydfil town centre, the bridge spans the Afon Taf and lies in an urban setting. The site is centred at national grid reference SO 04909 05648.

Scope

- iii. The bridge is scheduled for removal to allow for a wider replacement bridge. The proposed bridge would allow space for both pedestrians and cyclists and help to work towards MTCBC's sustainable transport plan¹.

Aims

- iv. This report presents the findings of the ecological surveys undertaken, highlights any ecological constraints for the proposed works and provides recommendations to avoid impacting local wildlife and breaches of any ecological legislation. The report will be submitted as part of the planning application.

¹ <https://www.merthyr.gov.uk/media/1214/spg-4-sustainable-design-chapter-6.pdf>

2. METHODOLOGY

- i. Baseline ecological conditions at the site were established via a combination of desk-based consultation, Extended Phase 1 Habitat survey and bat roost assessment of the bridge in July and August 2021.

Desk study

- ii. The desk study undertaken by South East Wales Biodiversity Records Centre (SEWBReC) was provided by MTCBC. The desk study provides records of rare, protected or notable flora and fauna at the site and within a radius of 2km extending from the site boundary. The search criteria also included information relating to the location and citation details (where available) for any sites designated for their nature conservation interest such as Special Areas of Conservation (SACs), Sites of Special Scientific Interest (SSSIs) or Sites of Importance for Nature Conservation (SINCs).

Walkover survey

- iii. An initial walkover was undertaken on 12/07/2021 by a suitably qualified ecologist. Habitats considered to have potential to support rare, protected or otherwise notable species of flora and fauna were noted, as were any direct signs of these species (e.g. Eurasian badger *Meles meles* setts and latrines) and any incidence of invasive weed species (e.g. Japanese knotweed *Reynoutria japonica*) noted. The bridge structure was assessed from above and below using high powered torch and near-focusing binoculars.
- iv. A follow-up rope accessed aerial assessment of the bridge and an otter survey of the river was undertaken on 07/08/2021².

Preliminary bat roost and nesting bird assessment

- v. During the initial field survey and subsequent roped accessed endoscope assessment the bridge was assessed for its potential to support roosting bats and was categorised in relation to the bat roosting features (BCT, 2016). The categories are as follows:
 - **Known or confirmed roost**
 - **High** - A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
 - **Moderate** – A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.

² Full member of the Institute of Environmental Sciences (IES), with 7yrs experience of habitat and protected species surveys and a NRW bat survey licence and an Associate Member of the Chartered Institute of Ecology & Environmental Management (CIEEM), with 7yrs experience of habitat and protected species surveys.

- **Low** – A structure with one or more potential roost sites that could be used by individual bats opportunistically.
 - **Negligible** – Negligible habitat features on site likely to be used by roosting bats
- v. A rope accessed roost assessment using endoscopes was undertaken on 07/08/2021 by two suitably qualified ecologists³. to investigate the depths of crevices created by cracks in the concrete underneath the bridge. Details of crevices were noted and individually assessed for their potential to support bats. A search was also carried out for direct evidence of bats such as staining and droppings.
 - vi. Other features suitable for nesting birds such as scrub, dense Ivy (*Helix hedera*), and direct evidence such as nests and nest building/breeding activity by birds was also examined.

Otter survey

- vii. An Otter (*Lutra lutra*) survey was undertaken on 07/08/2021 inline with the best practice guidelines (Chanin P, 2003). The survey covered 100m upstream and downstream of the bridge, signs of otter were searched for such as; holts, spraints, slides and prints.

Limitations

- viii. Biological records obtained from third parties and presented in the desk study do not represent a full and complete species list for the area. The records are mostly provided by individuals on an *ad-hoc* basis, often meaning there are areas of deficiency in the data. If species records are not present it may be as a result of the area being under surveyed and as such no records have been returned, lack of species should therefore not be disregarded.
- ix. Ecological surveys are limited to factors which affect the presence of plants and animals, such as time of year, migration patterns and behaviour. With summer survey visits it is possible that certain species may have been overlooked or under-recorded during the assessment as optimal survey periods vary from species to species.
- x. Overall the initial survey and subsequent aerial assessment of the bridge was considered sufficient to inform this assessment and recommendations.

³ Full member of the Institute of Environmental Sciences (IES), with 7yrs experience of habitat and protected species surveys and a NRW bat survey licence and an Associate Member of the Chartered Institute of Ecology & Environmental Management (CIEEM), with 7yrs experience of habitat and protected species surveys.

3. RESULTS

Desk study

- i. SEWBRc data search confirmed that no statutory designation was afforded to the site itself, however Cwm Glo a Glyndyrys lies 500m west of the site. There are no other statutory designated site within 2km of the site.
- ii. The data enquiry returned 21 Sites of Importance to Nature Conservation (SINC) within a 2km radius. It also returned approximately 25 recorded locations of ancient woodland sites within 2km. Most of the sites are considered to be of limited ecological relevance to the site works. Reasons include physical separation by natural and anthropogenic terrain barriers, which prevent commuting of species associated with their designations. Also the nature of the bridge replacement works being small within a local context. Table 1. Includes sites which were considered to be of at least some relevance to the proposals.

Table 1-Designated SINC information

Distance (m)	Site name	Designation
0	Afon Taf	The major river in the County Borough. Includes areas of bankside habitats, particularly towards the south where the river corridor is less industrialised than further north. Associated habitats are chiefly semi-natural woodland, including areas of ancient semi-natural woodland and linear wet woodlands. There are also numerous neutral grasslands, scrub patches and bracken stands, as well as small areas of marshy grassland and tall herb vegetation. Notable features of the river course include cobble banks which support localised plants. Otter occurs throughout the length of the river which is known to be of value to a wide variety of birds, fish, bats and reptiles.
461	Rhydycar West	Very extensive mosaic of ffridd enclosures supporting complex of semi-upland and lowland habitats, partly contained within conifer plantation. Main components are ancient semi-natural woodland fragments, other semi-natural woodlands, wet heathland, dry heathland, marshy grassland and semi-improved neutral grasslands. Also there are some bracken slopes, scrub, small ponds, streams and sections of dismantled railway. There are areas of semi-improved acid grasslands to the south especially. The habitats intergrade to form a complex mosaic, and may therefore also include some small areas of improved or low diversity semi-improved grassland, but any such areas are a very minor component. Great crested newt occurs in small pools; noctule and pipstrelle bats have both been recorded. Nationally rare and scarce invertebrates are varied and common throughout the area.

464	Cwm Glo	The SINC contains the Cwm-Glo a Glyndyrus SSSI which is of international significance for grassland fungi. Extensive areas of marshy grassland, species rich neutral grassland and acid grassland alongside woodland and heath supporting an impressive variety of protected, rare and uncommon species including marsh fritillary butterfly (<i>Euphydryas aurinia</i>), Great Crested Newt (<i>Triturus cristatus</i>), big blue pinkgill (<i>Entoloma bloxamii</i>) and olive earthtongue (<i>Microglossum olivaceum</i>).
1230	Blaen-canaid	Series of species-rich semi-improved neutral grassland enclosures surrounded by a large conifer plantation. Also contains small areas of acid and marshy grassland and some scattered scrub and hedges.
1368	Cwm Taf Fechan	The SINC contains Cwm Taf Fechan SSSI. The limestone geology gives rise to limestone woodlands, species-rich calcareous grasslands, species-rich neutral grasslands and calcareous scrub. Many species of interest have been recorded from the woodlands which are the designated feature of the SSSI. The neutral and calcareous grasslands of the valley slopes and bottom are typically species-rich. Otter ranges along the Afon Taf Fechan, which also supports a range of native fish species including salmon. Nationally rare and scarce invertebrate and bryophyte species have been recorded from the SSSI.
1454	Glynmil	Mosaic of semi-upland ffridd habitats at the western edge of Merthyr Common, partly on old colliery spoil tips. Comprises mainly unimproved and semi-improved acid grasslands, with smaller areas of marshy grassland, acid flush, dry acidic heath, bracken slopes and scrub. Also includes an area of ancient semi-natural oak woodland, and numerous smaller areas of wet woodland. Localised purple moor-grass pastures, with areas of acid flush and unimproved acid grassland, are present. Several ponds and numerous small streams run through the wooded areas.
1567	Cwm Taf Fields and Cefn Coed Tip	Linear series of fields between the Afon Taf Fawr and the A470, also containing areas of semi- natural woodland and a re-vegetated limestone slag tip from the former Cyfarthfa Ironworks as well as smaller areas of semi-improved acid grassland, scrub, bracken slopes and dry heathland. The fields are a mosaic of damp and dry neutral grasslands with species-rich areas. The woodlands are variable in character, including areas of wet willow woodland, acid oak woodland and some base-rich ash woodland near the calcareous tip. The thin soils on the tip plateau support a unique type of calcareous grassland.
1571	Cyfarthfa Park	Part of an area of mainly ornamental parkland within Merthyr Tydfil. The SINC includes semi- natural woodland and several enclosures of neutral grassland in the eastern half of the park. Also includes small areas of plantation woodland and scrub and several woodland ponds.
1617	Cwm Woods	Area of ancient semi-natural woodland within a much larger conifer plantation. The grassy field layer has locally abundant bluebell. Also includes some associated areas of bracken, dry heathland, scrub, marshy grassland and acid grassland. A range of localised bird and moth species have also been recorded.

1854	Abercanaid Fields	Series of fields laying either side of the A470 containing mainly species-rich semi-improved grasslands and marshy grasslands. Also some small areas of semi-natural oak/birch woodland, scattered scrub and trees. Site also includes Webber's pond, a private nature reserve with well-developed marginal emergent vegetation, a section of the Glamorganshire Canal and an adjacent disused railway embankment which supports unimproved and semi-improved acid grassland, bracken slopes and trees.
1932	Pentrebach Fields	Linear series of species-rich semi-improved neutral grassland fields alongside disused railway embankment. The short-grazed grasslands are dominated by fine-leaved grasses and support abundant mesotrophic herbs. Site also contains scattered dense scrub and bracken slopes. An area of dry heathland dominated by ling heather is present in the north of the site, occurring in a mosaic with acid grassland.
1943	Merthyr Common South	Large upland/semi-upland common along hill ridge between two major rivers. Comprises extensive unimproved and semi-improved acid grasslands, dry heathlands and bracken slopes, together with acid flushes, marshy grasslands, wet heathlands, grass-heath and gorse scrub, forming a complex mosaic. Includes numerous ponds and streams (including a section of the Nant Bargoed, extensive outcrops of rock and some disused quarries. Parts of the site are situated on old colliery spoil; these have largely re-vegetated with acid grasslands and heathlands, but calcareous influences also occur locally.
1943	Cwm Taf Fawr	Section of major river tributary of the Afon Taf. The river extends into Brecon Beacons National Park to the north. Includes adjacent woodlands, which are relatively undisturbed in the upper reaches and more urban in character further downstream. The upper reaches in particular are of high ecological value, comprising limestone gorge woodland with a rich ground flora. Numerous rare plant species occur here. Further south the riverside woodland is more acid in character, but nevertheless supports a relatively diverse ground. The site also includes some adjacent areas of species-rich calcareous, neutral and acid grasslands. The calcareous grasslands in particular support numerous species which are scarce in the County Borough. Otter ranges along the Afon Taf Fechan, which also supports a range of native fish species including salmon.

Source: MTCBC Review Of Sites Of Importance For Nature Conservation 2018

- iii. For the majority of sites listed in Table 1. Only mobile species will be of relevance due to their physical separation. These may included foraging and commuting birds and bats as well as Otter that could disperse from nearby SINC's containing woodland and search for additional foraging and or breeding opportunities on or near to the site.
- iv. A range of species were returned by the desk study and included terrestrial mammals, fish, birds, invertebrates reptiles and amphibians.
- v. Terrestrial mammal records supported at least six species of Bat across 94 records, 25 records of Otter (mostly associated with the river Taff) and a range of other notable species including, water vole, hedgehog, badger, stoat, polecat and red squirrel.

- vi. Nearby bird records included Kingfisher *Alcedo atthis*, Starling *Sturnus vulgaris*, European Bullfinch *Pyrrhula pyrrhula*, Peregrine *Falco Falco peregrinus*, Hobby *Falco subbuteo*, Linnet *Linaria cannabina*, Redwing *Turdus iliacus*, Nightjar *Caprimulgus europaeus*, *Motacilla cinerea*, Osprey *Pandion haliaetus* and Barn Owl *Tyto alba*.
- vii. Other species of note include Salmon *Salmon salar*, Marsh Fritillary *Euphydryas aurinia*, the rare parasitic wasp Shimmering Ruby-tail *Chrysis fulgida*, Great Crested Newt *Triturus cristatus* and Grass Snake *Matrix helvetica*.

Walkover survey

- viii. During the walkover a limited range of habitats were identified. The majority of the working footprint was occupied by the Afon Taf and associated riparian corridor. River banks were dominated by man-made stone walls, scrub, trees and Japanese knotweed. Habitats surrounding the proposed working area include hardstanding (roads, car parks and footpaths), amenity grassland, scrub and trees along the river bank.

Preliminary Bat roost and nesting bird assessment

- ix. A series of repeating lateral cracks are present in the concrete underneath the bridge, the cracks that were accessible from the ground were endoscoped and it was determined that they were too shallow (1-2cm) and exposed to support roosting bats. However, the majority of the cracks/potential features could not be accessed from the ground, therefore the bridge was assessed as having low potential for roosting bats from the ground-level.
- x. No evidence of nesting birds, their nests or nesting activity was identified during the entirety of the scoping visit and subsequent return visit. The bridge itself provides limited nesting opportunities for birds, however the surrounding vegetation may be utilised. In addition, pigeons were noted nesting under the road bridge to the south of the site

Rope accessed aerial assessment

- xi. Following closer inspection and endoscopy of all the potential features, it was confirmed that all the cracks were similar in depth (1-2cm) and the bridge was re-assessed as having negligible potential for roosting bats. (*See photos in Appendix*)

Otter survey

- xii. The walkover survey along each river bank up to 100m from the site of the proposed works did not provide any evidence of Otter presence (footprints, sprint or holts etc.). Whilst the site and its immediate surrounds are likely to be unsuitable for breeding sites/holts due to the lack of suitable features and the high levels of disturbance, foraging and commuting otter using the site cannot be precluded.

4. LEGISLATION & POLICY

Overview

- i. Developers must ensure the construction and operational activities for the proposed scheme comply with the national nature conservation legislation and with regional and local biodiversity policies.
- ii. The following legislative and planning policy context has been used to inform the assessment of the relative ecological value of the site, potential constraints to development and recommendation for enhancements.

Wildlife and Countryside Act 1981 (as amended)

- iii. The main pieces of legislation regarding the protection of species and habitats in Wales and England are the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended). These pieces of legislation provide a range of protection for many species, and also create protected sites (including Sites of Special Scientific Interest (SSSIs), Special Protection Areas (SPAs) and Special Areas of Conservation (SACs)). Activities which have the potential to harm protected species must be appropriately considered and mitigated, as must those with the potential to impact on protected sites. In some instances, activities occurring some distance from a designated site have the potential to cause adverse effects and must be considered within an impact assessment.
- iv. Bats are also afforded protection within England and Wales under the Wildlife and Countryside Act 1981 (as amended); Countryside and Rights of Way Act 2000; Natural Environment and Rural Communities Act 2006. Bats are also afforded protection locally via the Merthyr Tydfil Local Biodiversity Action Plan.
- v. Invasive non-native species are regulated via a combination of the Invasive Alien Species (Permitting and Enforcement) Order 2019 and Section 14/Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (henceforth referred to as 'the 1981 Act').
- vi. Otters are strictly protected by the Wildlife and Countryside Act 1981 (as amended) and by the EC Habitats Directive, (transposed into domestic law through the Conservation (Natural Habitats &c) Regulations 1994 (as amended) (the Habitats Regulations). Under the Habitats Regulations otters are classed as a European protected species and therefore given the highest level of protection.
- vii. The deliberate capturing, disturbing, injuring or killing of an otter is prohibited, as is damaging or destroying a breeding site or resting place (for example an otter holt).
- viii. All wild birds are protected under the 1981 Act. It is an offence to take, damage or destroy the nest or eggs of any wild bird while it is in use or being built. Schedule 1 species are afforded additional protection from disturbance whilst breeding.
- ix. Under the Salmon and Freshwater Fisheries Act 1975 it is an offence to unlawfully take or kill any salmonid or freshwater fish, disturb any spawn or spawning fish, or any bed, bank or shallow habitat on which any spawn or spawning fish may be. It is also unlawful to disturb

the food resource of freshwater fish. The Salmon and Freshwater Fisheries Act 1975 also protects the passage of salmonids. Additionally, migration routes for European eel *Anguilla anguilla* are protected by the Eels (England and Wales) Regulations (2009). Atlantic salmon, brown trout/sea trout and European eel are also listed as species of principal importance under Section 7 of the Environment (Wales) Act 2016.

Environment (Wales) Act 2016

- x. Local Authorities and public bodies have a statutory duty 'to seek to maintain and enhance biodiversity in Wales' when carrying out their normal functions. Section 7 of the Act contains a list of species and habitats of 'principal importance to the conservation of biodiversity in Wales' to acts as an aid to guide public bodies in implementing their duty. In order to do this, the local authority (MTCBC) must consider the impact of the proposed works on protected habitats and species.
- xi. Under the Wildlife & Countryside Act 1981 (as amended) all wild birds are protected against killing or injury and their nests against damage or destruction whilst they are being built or contain eggs/dependent young.

National Planning Policy Framework

- i. In terms of planning policy, at national level, Chapter 6 of Planning Policy Wales (PPW), 2018 (which relates to conserving and enhancing the natural environment) requires Local Authorities (and public bodies) to take measures to:
 - Promote the conservation of landscape and biodiversity, in particular the conservation of native wildlife and habitats;
 - Ensure that action in Wales contributes to meeting international responsibilities and obligations for the natural environment;
 - Ensure that statutorily designated sites are properly protected and managed;
 - Safeguard protected species; and
 - Promote the functions and benefits of soils, and in particular their function as a carbon store.

Merthyr Tydfil Council Local Development Plan (Adopted January 2020)

- ii. Several from MTCBC's adopted LDP were considered relevant to the proposals, including the following:

Policy EnW1: Nature Conservation and Ecosystem Resilience Development proposals will be required to promote the resilience of ecosystems. In particular, proposals will be required to maintain and enhance biodiversity interests unless it can be demonstrated that: 1. The need for the development clearly outweighs the biodiversity value of the site; and 2. The impacts of the development can be satisfactorily mitigated and acceptably managed through future management regimes.

Policy EnW2: Internationally and Nationally Protected Sites and Species Development likely to have an adverse effect either directly or indirectly on the conservation value of an internationally or nationally designated site, including the area, structure and function of designated features, will only be permitted where it is demonstrated that: 1. There is no suitable alternative to the proposed development; and 2. It can be demonstrated that the benefits from the development clearly outweigh the special interest of the site; and 3. Appropriate compensatory measures are secured; or 4. The proposal contributes to the protection, enhancement and positive management of the site. Development proposals likely to affect protected species will only be permitted where it is demonstrated that: 1. The population size, range, distribution and long-term prospects of the species will not be significantly adversely impacted; 2. There is no suitable alternative to the proposed development; 3. The benefits of the development clearly outweigh the adverse impacts on the protected species; and 4. Appropriate, avoidance, minimisation, mitigation, compensation and enhancement measures are provided.

Policy EnW3: Regionally Important Geological Sites, Sites of Importance for Nature Conservation, Local Nature Reserves and Priority Habitats and Species Development proposals likely to have an adverse impact on Regionally Important Geological Sites, Sites of Importance for Nature Conservation, Local Nature Reserves, or Priority Habitats and Species will only be permitted where it can be demonstrated that: 1. The need for the development clearly outweighs the conservation value of the site; 2. Adverse impacts on nature conservation features or geological features can be avoided; 3. Appropriate and proportionate mitigation and compensation measures can be provided; and 4. The development maintains and where possible enhances biodiversity and geodiversity interests.

Policy EnW4: Environmental Protection Development proposals will be required to demonstrate they will not result in an unacceptable impact on people, residential amenity, property and / or the natural environment from either:

- Pollution of land, surface water, ground water and the air;
- Land contamination;
- Hazardous substances;
- Land stability;
- Noise, vibration, dust, odour nuisance and light pollution; or
- Any other identified risk to public health and safety.

5. CONCLUSIONS & RECOMMENDATIONS

- i. In general, the proposed works could potentially have adverse impacts on a number of protected species in the absence of appropriate mitigation and survey. However, following appropriate ecological survey effort and recommendations set out below, it is considered unlikely that the proposals will impact existing ecological features adversely within the context of the site.

SINCs

- ii. Vegetation clearance within Afon Taf SINC should be kept to a minimum and the County Ecologist should be informed when the works commence. Any vegetation lost should be replanted. In addition best practice pollution prevention measures should be put in place to prevent silt and construction material entering the river.

Bats

- iii. The bridge is considered to have negligible potential to support roosting bats. No further surveys are required.

Birds

- iv. No active nests or nesting activity was observed during the surveys. However, suitable foraging and nesting habitat such as trees and scrub exist along the riparian corridor. It is understood that vegetation clearance will need to be undertaken to clear the structure and allow access for contractors and equipment. To avoid damaging nesting birds, their nests and/or eggs, it is recommended that vegetation clearance be undertaken outside of the main bird nesting season (typically March - September inclusive). In so doing it is considered that an adverse impact to these species is very unlikely. Vegetation clearance can be undertaken in advance of works commencing to allow works to take place in the summer.

Fish

- v. The Afon Taf is known to support salmon along with numerous other fish species. A pollution prevention plan for the works is essential to avoid silt and construction material entering the river and potentially killing fish.

Otter

- vi. No direct evidence of Otter was identified during the survey. However it is known from the desk study that it is likely Otter use this stretch of the river for foraging and commuting, therefore their presence at least on an irregular basis cannot be precluded. Work should be undertaken during daylight hours to avoid disturbing foraging and commuting otters. In the unlikely event that an otter or other signs of otter activity (holt, sprint, footprints) are discovered during the works, all works should stop immediately and a suitably qualified ecologist contacted on how to proceed.

Pernicious weeds

- vii. The ecological walkover survey identified an extensive stand of Japanese knotweed along both banks of the river on both sides of the bridge. Japanese Knotweed is Schedule 9 Invasive weed and under this schedule's provisions it is an offence to cause the spread of Japanese knotweed. The proposed works may risk disturbance and or spread of this weed

within the local context and therefore a method statement to prevent spread and ideally eradicate the species should be implemented as part of the works.

Other considerations and general recommendations

- viii. Consideration should be given to localised enhancement measures as part of the proposals. Bat/bird boxes could be installed on trees which stand on land within council control, preferably on or directly adjacent to site.
- ix. A Toolbox talk should be given to contractors undertaking repair works or vegetation clearance. The talk will address precautionary measures pertaining to the project, nesting birds, bats, otter, fish and pernicious weeds.
- x. The banks of the river could be replanted with suitable native species on completion of the works. This would increase the ecological value of the site and improve the condition of the Afon Taf SINC.

6. REFERENCES

Bat Conservation Trust (2016) *Bat Surveys for Professional Ecologists – Good Practice Guidelines*. Bat Conservation Trust, London.

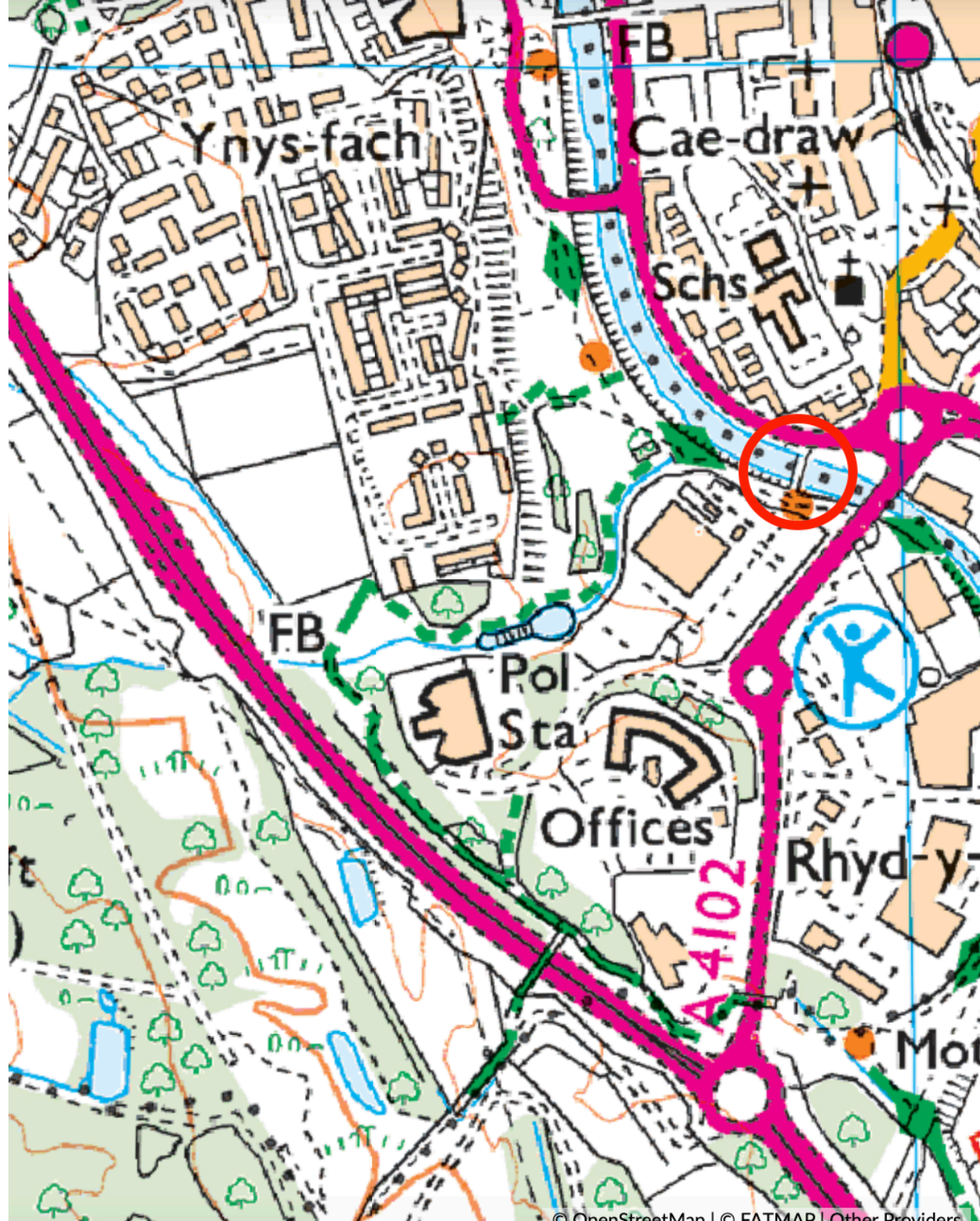
Dietz & Kiefer (2016) *Bats of Britain & Europe*. Bloomsbury Publishing.

Mitchell-Jones, A.J. (2004) *Bat mitigation guidelines; January 2004*. English Nature. Peterborough.

Russ, J (2012) *British Bat Calls: A Guide to Species Identification*. Pelagic Publishing.

APPENDICES

APPENDIX I - Site location

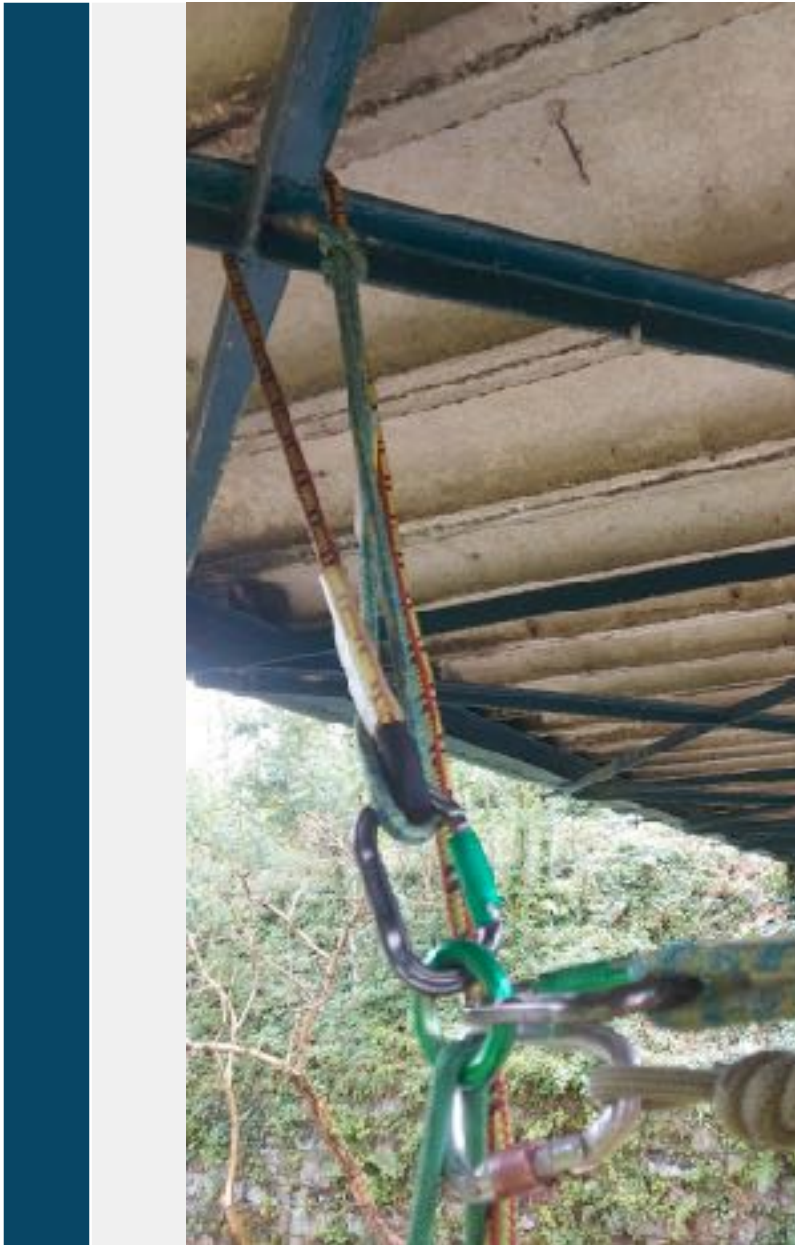


APPENDIX II - Site photos

Target Note	Image	
		Overview of the bridge



View from underneath the bridge - horizontal cracks in the concrete can be seen.



View from underneath the bridge - anchor placed underneath to help with endoscope placement



Example crack underneath the bridge - 15mm x 20mm