

Feeder Pipe Bridge, Abercynon
Preliminary Ecological Appraisal
Report for Rhondda Cynon Taf Borough
Council

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Executive Summary

Temple was commissioned in January 2023 by Rhondda Cynon Taff Borough Council to carry out a Preliminary Ecological Appraisal of land immediately either side of the Feeder Pipe across the River Taff in Abercynon, South Wales (henceforth referred to as 'the Site'). This comprised a Phase 1 habitat survey, protected species assessment and ecological evaluation. This survey was required in support of planning permission for conversion of the current pipe bridge to a pedestrian foot bridge across the River Taff. The main findings are as follows:

- The Site predominantly comprised a river with shale beach on the Northern side with hardstanding public footpath to either end of the bridge. The surrounding landscape was made up of hardstanding, semi-natural broadleaved woodland, tall ruderal and bracken.
- The site is not subject to any statutory designations, 16 non-statutory nature conservation designations are located within 15km of the site. Two non-statutory sites are located within the Site; The Taff and Rhondda Rivers SINC and the Lower Taff and Edwardsville Woods SINC
- Habitats present are considered of importance within the regional vicinity of the Site only but may assume higher where they support protected and/or notable species.
- **Roosting and foraging bats** – There is a potential for roosting bats to be present within the abutments and wall structures at either end of the bridge, which will likely be affected by the proposed works. As impacts on the bridge and walls are unavoidable, further surveys will be required to establish the presence or likely absence of bats;
- **Otters** – Habitat suitable for otters is present in the river and surrounding woodland habitat. Further surveys are required to establish if any signs of otters are present. If so then measures must be undertaken to avoid harm or disturbance to resting or foraging area or holts.
- **Breeding birds** – Habitat suitable for breeding birds is present therefore measures must be undertaken to avoid harm to breeding birds during proposed development.
- **Reptiles** - Habitat suitable for reptiles is present therefore measures must be undertaken to avoid harm to reptiles during proposed development.

Where possible on the basis of information available to date, recommendations to enhance the importance of the Site for biodiversity in accordance with the Environment (Wales) Act 2016 and national and local planning policies, have been provided. These include the provision of bird nesting opportunities and provision of roosting opportunities for bats.

1 Introduction

BACKGROUND TO COMMISSION

- 1.1 Temple was commissioned in January 2023 by Rhondda Cynon Taff Borough Council to carry out a Preliminary Ecological Appraisal (PEA) of land at the old feeder pipe bridge, Abercynon (the Site). The appraisal was carried out in order to provide ecological information to inform a planning application for a proposed new footbridge and public footpath across the River Taff. The appraisal considers land within the planning application site boundary (hereon referred to as 'the Site') as shown in Appendix 1.

SCOPE OF THE REPORT

- 1.2 The aim of this appraisal is to provide baseline ecological information about the Site. This will be used to identify any potential ecological constraints associated with the proposed development and/or to identify the need for additional survey work to further evaluate any impact that may risk contravention of legislation or policy relating to protected species and nature conservation. Where possible, this report outlines any avoidance, mitigation, compensation and enhancement measures as may be required to ensure compliance with legislation and policy.
- 1.3 This appraisal is based on the following information sources:
- A desk study of the site and land within a 2km surrounding radius of the site boundary, including a search for internationally important wildlife sites within a 15km surrounding radius;
 - A Phase 1 habitat survey (JNCC, 2010) of the Site to identify and map the habitats present;
 - A protected species assessment of the Site to identify features with potential to support legally protected and/or priority species including those defined by the Environment (Wales) Act 2016 as Species of Principal Importance (SPI); and
 - An evaluation of the Site's importance for nature conservation.
- 1.4 This appraisal has been prepared with reference to best practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2017) and by the Bat Conservation Trust (Collins, 2016), as well as that which is detailed in British Standard 42020:2013 *Biodiversity - Code of Practice for Biodiversity and Development* (BSI, 2013).

- 1.5 The PEA was undertaken by Jess Clitheroe BSc, an ecologist with nine years' experience who is trained and competent in carrying out Phase 1 habitat surveys and protected species assessments.
- 1.6 Site location, designated site location, habitat and survey maps are presented in Appendix 1 with a botanical species list of plants recorded in Appendix 2 and target notes for features too small to map in Appendix 3. Photographs of the site are presented in Appendix 4. Details on relevant legislation is presented in Appendix 5.

SITE CONTEXT AND STATUS

- 1.7 The site is centred on Ordnance Survey National Grid reference ST 09209 95484. The site lies on the outskirts of Abercynon, Rhondda Cynon Taff, part of the site is subject to a non-statutory conservation designation. The site is bordered for the most part by agricultural land as well as commercial and domestic dwellings.

DEVELOPMENT PROPOSALS

- 1.8 These surveys are required in support of an application for the conversion of the old disused feeder pipe bridge to a public footpath bridge across the river. At the time of creation landscaping plans were not available but we understand the development is to be mainly hardstanding

RELEVANT LEGISLATION AND PLANNING POLICY

- 1.9 The following key pieces of nature conservation legislation are relevant to this appraisal. A more detailed description of legislation is provided in Appendix 5:
- The Conservation of Habitats and Species Regulations 2017 (as amended) (commonly referred to as the Habitats Regulations);
 - Wildlife and Countryside Act 1981 (as amended);
 - Environment (Wales) Act 2016;
- 1.10 The Planning Policy Wales (PPW) (Cabinet Secretary for Energy, Planning and Rural Affairs, 11th Ed. 2021) works with the objective to ensure the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales.
- 1.11 River and lowland, mixed deciduous woodland on the Site are listed under Section 7 of the Environment (Wales) Act 2016. Section 7 lists habitats in Wales which are considered to be of key significance to sustain and improve biodiversity in Wales. It

states that all reasonable steps must be taken to maintain and enhance the types of habitat included on this list.

NOMENCLATURE

- 1.12 A botanical species list, including scientific names in accordance with Stace (2019), is provided in Appendix 2. Common names of species, in accordance with the Natural History Museum Species Dictionary (Natural History Museum (2022)), are used throughout this report with scientific names given at first mention for fauna and flora.

2 Methodology

DESK STUDY

2.1 The following data sources were reviewed to provide information on the location of statutory designated sites¹, non-statutory designated sites², legally protected species³, Species and Habitats of Principal Importance⁴, and other notable species⁵ and habitats⁶ that have been recorded within a 2km radius of the Site:

- South East Wales Biological Records Centre (LERC ref 0223-786), the local Biological Records Centre was used principally for species records and information on non-statutory sites;
- MAGIC (<http://www.magic.gov.uk/>) - the Government's on-line mapping service. Information was sought concerning: the presence of ancient semi-natural woodland; statutory designated nature conservation sites; internationally important sites within 15km; and extant or historic European Protected Species Mitigation licences for bats; and
- Ordnance Survey mapping and publicly available aerial photography to search for habitat features including proximity to nearby habitat and how the site connects to surrounding habitat.

2.2 A summary of key records provided by the desk study is presented in Section 3 of this report. All records have been used to inform the assessment of the potential for protected or otherwise notable species to be present at the Site to provide a preliminary view of the Site's ecological importance, but these are not presented in full in the report.

HABITAT SURVEY

2.3 The habitat survey of the Site was carried out on the 21st February 2023 in dry, breezy conditions by Jess Clitheroe. This survey covered the entire Site including boundary

¹ **Statutory designations** include Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites (referred to collectively as National Site Network sites in England), National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR).

² **Non-statutory sites** are designated by local authorities (e.g. Sites of Importance for Nature Conservation or Local Wildlife Sites).

³ **Legally protected species** include those listed in Schedules 1, 5 or 8 of the Wildlife and Countryside Act 1981; Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended); or in the Protection of Badgers Act 1992.

⁴ **Species/Habitats of Principal Importance** are those defined by Section 7 of the Environment (Wales) Act 2016.

⁵ **Notable species** include Species of Principal Importance under the Environment (Wales) Act 2016; Local Biodiversity Action Plan (LBAP) species; Birds of Conservation Concern (Stanbury *et al.* 2021); and/or Red Data Book/nationally notable species (JNCC, undated).

⁶ **Notable habitats** include Habitats of Principal Importance under the Environment (Wales) Act 2016; those included in an LBAP; Ancient Woodland Inventory sites; and Important Hedgerows as defined by the Hedgerow Regulations 1997.

features. Habitats were described and mapped following standard Phase 1 habitat survey methodology (JNCC, 2010) and marked on a paper base map and subsequently digitised using ESRI ArcGIS software. Habitats were also assessed against descriptions of Habitat of Principal Importance as set out by the JNCC (BRIG, 2008)⁷ where appropriate.

- 2.4 Records for dominant and notable plants are provided, as are incidental records of birds and other fauna noted during the habitat survey. The latter have been used to justify the potential presence of important ecological features where applicable. Common names are used where widely accepted – for amphibians, birds, fish, mammals, reptiles and vascular plants. Scientific names are provided for other groups but at first mention only if there is also an accepted common name.
- 2.5 The Site was also surveyed for the presence of invasive plant species as defined by Schedule 9 of the Wildlife and Countryside Act 1981 (as amended); however, detailed mapping of such species is beyond the scope of this commission and locations on the habitat plan are indicative only.
- 2.6 Target notes are used to provide information on specific features of ecological interest (e.g. invasive plant species) or habitat features that were too small to be mapped (Appendix 3).

SITE EVALUATION

- 2.21 Where sufficient baseline data are available, the Site's ecological importance has been evaluated broadly following guidance issued by CIEEM (CIEEM, 2018) which ranks the nature conservation importance of a site according to a geographic scale of reference: international, national, regional (South East Wales), metropolitan, county, vice-county or other local authority-wide area (Rhondda Cynon Taff); and of importance within the immediate surrounds of the Site only. In evaluating the nature conservation importance of the Site, the following factors were considered: nature conservation designations; species/habitat rarity; naturalness; fragility and connectivity to other habitats. Where no importance has been assigned this is due to insufficient information.
- 2.22 An assessment of likely ecological impacts has been undertaken in accordance with CIEEM guidelines (CIEEM, 2018) only where clear evidence is available to substantiate

⁷ Collection of data required to confirm that certain habitats (including rivers and ponds) meet criteria for HPI is beyond that obtained during a Phase 1 habitat survey. In these cases, the potential for such habitats to meet relevant criteria is noted but further surveys to confirm this assessment may be recommended.

and justify the findings. In the absence of such evidence, the ecological feature is merely identified as a potential constraint to development. Reference is also made to Section 6 of the Bat Mitigation Guidelines (Mitchell-Jones, 2004) and Natural Resources Wales standing advice and includes a summary of the scale of impact according to bat roost type and development effect, if known.

- 2.23 Where ecological constraints to development are identified, further survey requirements and/or mitigation measures that are proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development are described. In addition, in accordance with the Planning Policy Wales (PPW) (Cabinet Secretary for Energy, Planning and Rural Affairs, 11th Ed. 2021 and local/regional planning policies, opportunities to enhance or create benefits for wildlife are provided where this is possible based on the information available to date.

DATA VALIDITY AND LIMITATIONS

- 2.24 Every effort has been made to provide a comprehensive description of the Site; however, the following limitations apply to this assessment.
- The protected species assessment provides a preliminary view of the likelihood of protected species occurring on the Site. It should not be taken as providing a full and definitive survey of any protected species group. Additional surveys may be recommended if on the basis of the preliminary assessment or during subsequent surveys it is considered reasonably likely that protected species may be present and potentially affected by the proposed development.
 - Even where data for a particular species group are provided in the desk study, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest, the area may simply be under-recorded.
 - Where only four figure grid references are provided for protected species by third parties, the precise location of species records can be difficult to determine and they could potentially be present anywhere within the given 1km x 1km square. Equally, six figure grid references are accurate to the nearest 100m only.
 - The Phase 1 habitat survey does not constitute a full botanical survey or provide accurate mapping of invasive plant species.
 - Part of the Site was inaccessible due to being privately owned land with no access, however these sections were able to be adequately assessed from outside the area and this was not considered impactful to the overall results of the survey;

- The bank on the southern side of the river was inaccessible making full survey impossible, however this could be surveyed from the opposite bank using binoculars and the bank was able to be adequately assessed from this side, and this was not considered impactful to the overall results of the survey;
- The survey was carried out in late February, which means that early flowering plant species and evidence of breeding activity for some fauna would not have been evident.
- Ecological survey data are typically valid for 12-18 months unless otherwise specified (CIEEM, 2019). Data used to support a bat mitigation licence application to Natural Resources Wales must be from the most recent survey season; depending on the timing of the application, this may mean from the same or previous year.

2.25 Despite these limitations, it is considered that this report accurately reflects the habitats present, their biodiversity importance and the potential of the Site to support protected and otherwise notable species.

3 Results and Evaluation

DESIGNATED SITES

Statutory designated nature conservation sites

- 3.1 The Site is not subject to any statutory nature conservation designations, and no statutory designated sites are found within a 2km radius of the site.

Non-statutory designated nature conservation sites

- 3.2 There are 16 non-statutory sites designated as Site of Importance for Nature Conservation (SINC) present within 2km of the site (see Table 3.3). The nearest of these is Lower Taff and Edwardsville Woods

- **Table 3.3: Non-statutory Designated Sites**

Sites of Importance for Nature Conservation (SINC)	Distance from Site and orientation	Reason for designation
<i>Lower Taff & Edwardsville Woods</i>	5 metres south-east	Steep valley sides along the sharply meandering lower section of the Afon Taf, mainly supporting ancient seminatural woodlands. Also includes some adjacent areas of neutral and acid grasslands, scrub, bracken and grassheath. The damp woods have a particularly rich ground flora with the dry woods having a much sparser ground flora, but supporting abundant bluebell. A wide range of bird species have been recorded from the woodlands. The grasslands and bracken in the north of the site are important for reptiles.
<i>Whitehall Golf Course</i>	0.1km south-east	Mainly bracken slopes but with areas of dry heathland, acid grassland, semi-natural woodland (along the course of an old railway line) and disused quarries, forming a mosaic of habitats.
<i>Cwm Mafon</i>	0.4km north-east	Area of wet woodland along the course of the Nant Mafon, including some adjacent areas of marshy grassland and damp neutral grassland. Also includes some bracken stands and scrub. The stream has many natural physical features and a number of large mature trees along its banks. The wet woodland supports a rich ground flora.
<i>Craig Berthlwyd</i>	0.5km north north-east	Area of valley side slope in an urban setting supporting a mosaic of dry heathland, acid grassland, bracken and broadleaved woodland. Also includes some rocky outcrops, old quarries and associated clutter

Sites of Importance for Nature Conservation (SINC)	Distance from Site and orientation	Reason for designation
		scree. The acid grasslands are mostly unimproved
<i>Goetre-coed wood</i>	0.6km north north-west	Remnant area of ancient semi-natural woodland and associated bracken slopes with scattered mature trees. There are also some small areas of dry heathland associated with old quarries. The woodland is acidic in character, with a generally sparse ground. Large outcrops of native gritstone rock are a feature of the woodlands. The old quarries and other exposed rocks support heathland.
<i>Cwm Afon Railway Line, West of Nelson</i>	0.7km east	Species-rich marshy grassland with at least 12 indicator species. Semi-improved acid grassland with at least 7 indicator species.
<i>Cwm Afon, West of Nelson</i>	0.7km east	Species-rich marshy grassland/ flush with at least 12 indicator species.
<i>Mynydd Goetre-coed</i>	0.7km north-west	Hill-top area of dry heathland, acid grassland, grass-heath and bracken stands. Also some disused quarries and associated scree with scattered scrub and young trees. Includes a large area of colliery spoil to the north supporting mainly species-rich neutral grassland communities
<i>Afon Bargod Taf</i>	1.1km north north-east	Includes adjacent bankside habitats, particularly semi-natural woodland along with semi-improved neutral and acid grasslands, bracken stands and swamp. Large mature trees are frequent along the banks, and these may support roosting bats. 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.
<i>Berthlwyd</i>	1.1km north north-east	Valley side slopes above the Afon Bargoed Taf, supporting semi-natural woodland, semi-improved neutral grassland and stands. Also includes small areas of acid grassland and scrub and a small disused quarry. Much of the grassland is flowery and species-rich and supports species of interest. Small pockets of acid grassland are also present with regionally scarce species also occurring on the site
<i>Treharris Park & Cardiff Road Woodlands</i>	1.5km north north-west	Semi-natural broadleaved woodlands on valley slopes above the Afon Taf, including areas of ancient woodland and replanted ancient woodland. Also includes some open fridd areas with rocky outcrops, supporting a mosaic of bracken stands and dry heathlands. The site also includes small areas of acid and neutral grassland, scrub and several disused quarries. Ancient woodland indicator plants grow in the richer woodland areas. The fridd areas support a strong population of reptiles and the woodlands are important for a range of breeding birds

Sites of Importance for Nature Conservation (SINC)	Distance from Site and orientation	Reason for designation
<i>Afon Taf</i>	1.6km north-west	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.
<i>Nant Caeach</i>	1.8km north-east	Stream course which is semiupland in character at its source and progressively becomes a large lowland stream towards its confluence with the Afon Taf Bargod. The stream follows an unmodified course and includes natural physical features such as meanders, small waterfalls, pools and riffles. The lower reaches pass through remnant areas of ancient semi-natural woodland as well as wet woodland pockets.
<i>Brooklands Marsh, North of Nelson</i>	1.8km north-east	Semi-natural wet woodland (in an early stage of development).
<i>Craig-yr-Efail</i>	1.9km north-west	Semi-upland ffridd and hill top supporting mainly dry (heath, with bracken predominating on lower slopes. Also some replanted ancient semi-natural woodland, wet woodland, acid grassland, sandstone outcrops and quarries with associated screes.
<i>Coed Cefn-fforest & Cwm Cothi</i>	2km north north-east	Large area of semi-natural broadleaved woodland, much of it ancient seminatural woodland on the valley bottom and valleysides of Cwm Cothi. Site also includes wet heathlands, marshy grasslands and bracken slopes, as well as smaller areas of neutral grassland, acid grassland and acid flushes, and some small disused quarries and revegetated colliery spoil. The marshy habitats support numerous species of interest.

Habitat inventories and landscape-scale conservation initiatives

Ancient woodland

- 3.1 The desk study revealed the following priority areas of ancient woodland within a 2km radius of the site.

- 62 areas of Ancient Semi Natural Woodland, the closest to the site being a belt immediately at the north-eastern end of the feeder pipe bridge and following the bank of the river Taff upstream.
- 5 Restored Ancient Woodland Sites (RAWS), the closest of which is approximately 1.3km south-west of the site.
- 9 Plantation on Ancient Woodland Sites (PAWS), the closest of which is approximately 1.5km south-west of the site. These plantations are also NRW Priority Areas (Woodland – PAWS).
- 6 Ancient Woodland Site of Unknown Category, the closest of which is approximately 1.6km south-west of the site.

Priority Habitats (Wales)

- 3.2 There are two areas of priority habitat within the site. The Taff River and the Lower Taff and Edwardsville Woods.

PHASE 1 HABITAT SURVEY

Overview

- 3.3 The Site comprised a large area of semi-natural broadleaved woodland, with some scattered scrub and scattered trees, running water and bracken are the other two dominant habitats within the Site. There are also small areas of pebble beach and hardstanding. Phase 1 habitat types are mapped in Appendix 1, Figure 3 and areas are given in Table 3.2.
- 3.4 A description of dominant and notable species and the composition of each habitat is provided below, with a species list (including all scientific names) provided in Appendix 2. Target notes, which are used to provide information on specific features of ecological interest, are included in Appendix 3. Photographs are located in Appendix 4.

Table 3.2: Phase 1 Habitat Areas

Phase 1 Habitat	Extent (m2)	%
Semi-natural broadleaved woodland	11932	47
Scrub (scattered and dense)/tall ruderal	152	0.6
Improved grassland	1729	7
Bare ground	646	2.5
Hardstanding	881	3.5
Bracken	7696	30
Running water	2386	9.4

Habitat Description

Semi-natural broadleaved woodland

- 3.5 Running along both the northern and southern sides of the river dominating the survey area were sections of semi-natural broadleaved woodland with abundant alder, penduculate oak, beech, hawthorn, silver birch, hazel and holly. The northern side of the river where the Ancient Semi-Natural broadleaved woodland was located generally had more mature trees than those on the southern side of the river which were more semi-mature in age. The middle storey of the woodland was fairly sparse with a ground cover of ivy and brambles. There was an abundance of invasive *Japanese knotweed* located along the woodland edge, running towards the river banks on the north side of the river in particular.

Scattered broad-leaved trees

- 3.6 Several scattered native trees are located within the stands of bracken on the northern side of the river. These are majority silver birch with a small number of willow.

Scattered scrub/tall ruderal

- 3.7 Areas of scattered scrub and tall ruderals occurred on the steps of the public footpath at the edges of the woodland on the north side of the river and on the northside of the river to the north east of the bridge alongside the stands of Japanese knotweed. Sward height was up to 1m and species included abundant common nettle, false oat-grass and bramble. Occasionally occurring were hawthorn saplings and dog-rose.

Improved grassland

- 3.8 The area to the northern boundary of the site is a large field of improved grassland. The majority of the species are perennial rye-grass and Italian rye-grass. The sward height

was approximately 30cm. The area is at the end of a public footpath and is regularly used by dog walkers and pedestrians.

Bracken

- 3.9 A large swathe of bracken is found on the northern side of the river between the public footpath and the road at the top of the site. This bracken is found around the edges of the area of semi-natural broadleaved woodland.

Running water

- 3.10 The River Taff runs through the centre of the survey area. It flows south-west under the Feeder Pipe Bridge. The river is bounded on either side by steep banks, in the immediate vicinity of the bridge one side is of natural rock and the other is man-made stonework. Further up and down river the banks are a mix of natural stone outcrops and mudbanks. There is a pebble beach immediately surrounding the base of the bridge structure on the northern side of the river.

Hardstanding

- 3.11 An area of hardstanding comprising a tarmacked public footpath leading to steps down to the bridge on the northern side of the river and a private footpath and steps leading down to the bridge on the southern side of the river.

PROTECTED, NOTABLE AND INVASIVE SPECIES ASSESSMENT

- 3.12 The potential for the Site to support protected and/or notable species has been assessed using criteria provided in Section 2 and is based on the results of the desk study and observations made during the survey of habitats at the Site. Those legally protected species not referred to in Table 3.3 below have been scoped out as it is considered that the Site does not contain habitats suitable to support them.
- 3.13 Key pieces of statute are summarised in Section 1 and set out in greater detail in Appendix 5.

Table 3.3. Protected, notable and invasive species assessment

Ecological feature	Status ⁸⁹	Likelihood of occurrence	Ecological importance
Bats	HR WCA S5	Roosting = Moderate Foraging/commuting = High Desk study records returned seven species of bats within 2km of the site and returned records for 'Bat' (6 records, including for a roost 1.4km from site), 'Pipistrelle Bat Species' (11 records, closest of which was 0.8km. 1 record of maternity roost inside a house 1.6km distant from site), and 'Myotis sp.' (1 record of commuting adult 1.9km from site). The seven species of bats are; Brandt's bat <i>Myotis brandtii</i>, (2 records, closest being 0.75km), Brown Long-eared bat <i>Plecotus auritus</i>, (3 records, 2 recorded as bat roosts, domestic buildings, closest 1.4km from site), Common Pipistrelle <i>Pipistrellus pipistrellus</i>, (14 records, closest 0.6km, 1 roost recorded, possible maternity 1.1km from site), Lesser Horseshoe bat <i>Rhinolophus hipposideros</i>, (2 records, closest 2.7km), Nathusius' pipistrelle <i>Pipistrellus nathusii</i>, (1 record, 1.9km), Noctule bat <i>Nyctalus noctula</i>, (5 records, closest 1.25km), Serotine bat <i>Eptesicus serotinus</i>, (1 record 1.85km from site), Soprano Pipistrelle <i>Pipistrellus pygmaeus</i>, (11 records, closest 0.5km, bat roost recorded 1.1km away, day roost non-breeding). Only records for the last 10 years (until 2013) were included in the results. Surveys on site of the current bridge structure found several gaps in the abutments and retaining walls of the bridge that were assessed as having moderate potential for bats to roost in. The surrounding habitats of the river and woodland provide ideal foraging and commuting habitats for bats and therefore are considered to have high potential.	Local

⁸ The following abbreviations have been used to signify the legislation afforded different species: HR = Conservation of Habitats and Species Regulations 2017 (as amended); WCA S1 = Schedule 1 of the Wildlife and Countryside Act 1981 (as amended); WCA S5 = Schedule 5 of the Wildlife and Countryside Act 1981 (as amended); WCA S9 = Schedule 9 of the Wildlife and Countryside Act 1981 (as amended); PBA = Protection of Badgers Act 1992.

⁹ The following abbreviations have been used to signify the policy of conservation assessments applying to notable species: LBAP = Local Biodiversity Action Plan species; BoCC = Birds of Conservation Concern - amber list / red list (Stanbury *et al.*, 2021); and/or RD/NN = red data book/nationally notable species (JNCC, undated).

Ecological feature	Status ⁸⁹	Likelihood of occurrence	Ecological importance
		There is moderate chance of roosting bats on Site and high potential that foraging and commuting bats may utilise the Site. Therefore, further recommendations regarding bats are discussed.	
Dormouse	HR WCA S5 Environment (Wales) Act 2016 S7	The desk study records returned 1 record for Hazel Dormouse <i>Muscardinus avellanarius</i>, 1.25km from the site. Only records for the last 10 years (until 2013) were included in the results. Habitats on site were considered sub-optimal for Dormouse and no field signs were recorded on the field survey. There is low chance of Hazel Dormouse on Site and therefore they are not discussed further within this report.	
Great crested newt	HR WCA S5 Environment (Wales) Act 2016 S7	The desk study returned 1 record for Great crested newt <i>Triturus cristatus</i>, 1.1km from the site. Only records for the last 10 years (until 2013) were included in the results. No suitable waterbodies are recorded within 500m of the Site and the terrestrial habitats on site are not considered to be suitable due to the distance from the nearest pond, and the nature of the landscape around the site creating barriers that would cause substantial obstacles for newts to cross. There is low potential of Great Crested Newt on Site and therefore they are not discussed further within this report.	
Otter	HR WCA S5	The desk study returned 13 records for Eurasian Otter <i>Lutra lutra</i>, the closest being 0.3km from the site (Otter spraint). Only records for the last 10 years (until 2013) were included in the results. Habitats on the Site are considered highly suitable for otters to be present. There are multiple locations that would be suitable for use by otters as foraging and couch spaces,	

Ecological feature	Status ⁸⁹	Likelihood of occurrence	Ecological importance
	Environment (Wales) Act 2016 S7	as well as potential across the wider site for holts to be present. The river itself is recorded as having high levels of suitable prey species for otter. There is high potential that otters may utilise the Site. Therefore, further recommendations regarding otters are discussed in this report.	
Birds	WCA S1 BoCC Red & Amber List Environment (Wales) Act 2016 Section 7 Conservation of Habitats and Species Regulations 2017 (as amended)	Breeding birds = High potential Wintering birds = High potential The species records for birds from the desk study include: Barn Owl <i>Tyto alba</i>, 18 records, closest 0.3km from site (WCA 1.1, WCA 9) Cuckoo <i>Cuculus canorus</i>, 2 records, 0.3km, (BoCC Red List) Env (Wales) 2016 S7 Dipper <i>Cinclus cinclus</i>, 9 records, 0.3km, (BoCC Amber List). Fieldfare <i>Turdus pilaris</i>, 6 records, 0.3km, (BoCC Red List) Grey Wagtail, <i>Motacilla cinerea</i>, 7 records, 0.3km, (BoCC Amber List) Kingfisher <i>Alcedo atthis</i>, 8 records, 0.1km, (Conservation of Habitats & Species Regulations 2017) (WCA 1.1) Linnet <i>Linaria cannabina</i>, 5 records, 0.3km, (BoCC Red List) Env (Wales) 2016 S7 Mistle Thrush <i>Turdus viscivorus</i>, 8 records, 0.6km, (BoCC Red List) Redwing <i>Turdus iliacus</i>, 15 records, 0.25km, (BoCC Amber List) Sand Martin <i>Riparia riparia</i>, 5 records, 0.6km Only records for the last 10 years (until 2013) were included in the results. During the field survey, several species of bird were recorded including common woodland birds such as blue tit and robin and a number of mallards were seen using the river. A single kingfisher was also seen flying along the river under the bridge.	

Ecological feature	Status ⁸⁹	Likelihood of occurrence	Ecological importance
		Habitats on site provide highly suitable foraging and nesting areas both within the woodland and bracken areas. There is high potential for breeding and wintering birds within the Site. Therefore they are considered further within this report.	
Amphibians	WCA S5 SPI Environment (Wales) Act 2016 S7	Species recorded from the data search include: Common Frog <i>Rana temporaria</i>, 3 records, 0.65km. Common Toad <i>Bufo bufo</i>, 9 records, 0.25km. Env (Wales) 2016 S7 Palmate Newt <i>Lissotriton helveticus</i>, 2 records, 1.1km Smooth Newt <i>Lissotriton vulgaris</i>, 1 record, 1.4km. Only records for the last 10 years (until 2013) were included in the results. Habitats on the Site are not considered optimal for the presence of amphibians, due to the lack of suitable breeding habitat and the barriers created by the surrounding landscape making it highly unlikely that they would be present on site. There is low potential of amphibians on Site and therefore they are not discussed further within this report.	
Plants	WCA S8	Species of flowering plants of note from the data search were: Spreading Hedge-Parsley <i>Torilis arvensis</i>, 2 records, 0.4km Red list endangered/critically endangered Plantlife website. Tubular Water-droplet <i>Oenanthe fistulosa</i>, 1 record, 1.9km 4 species of Orchid, Native Bluebell and Welsh Poppy, all within the 2km radius. Only records for the last 10 years (until 2013) were included in the results.	

Ecological feature	Status ⁸⁹	Likelihood of occurrence	Ecological importance
		There were no instances of protected species of plant recorded during the field survey. There is low likelihood of protected plant species on Site and therefore they are not discussed further within this report.	
Reptiles	WCA S5 SPI Environment (Wales) Act 2016 S7	The data search data returned the below records of reptiles: Adder <i>Vipera berus</i>, 2 records, 0.25km Env (Wales) 2016 S7 Slow-worm <i>Anguis fragilis</i>, 7 records, 0.7km Env (Wales) 2016 S7 Only records for the last 10 years (until 2013) were included in the results. The immediate vicinity of the bridge does not provide any suitable habitat for reptiles. However there is a woodpile located approximately 30m from the bridge that would be considered suitable for reptiles to use for basking and sheltering purposes. The wider site also contains large areas of bracken and grassland that would be highly suitable for reptiles to use as shelter. There is moderate potential for reptiles to be present on site and they are therefore considered further within this report.	
Fish	Environment (Wales) Act 2016 S7	Species returned by the data search within 2km of the site were: Brook Lamprey <i>Lampetra planeri</i>, 1 record, 1.1km (Habitats Directive Annex II) Brown Trout <i>Salmo trutta subsp. fario</i>, 1 record, 1.15km Env (Wales) 2016 S7 Bullhead <i>Cottus gobio</i>, 2 records, 1.25km (Habitats Directive Annex II)	

Ecological feature	Status ⁸⁹	Likelihood of occurrence	Ecological importance
		Only records for the last 10 years (until 2013) were included in the results. No fish were recorded during the field survey. As there is the potential for works to impact fish considered likely to be present within the river, they are considered further within section 4 of this report.	
Invasive plants	WCA S9	Records from the data search show the below Schedule 9 species to be present in proximity to the site: Entire-leaved Cotoneaster <i>Cotoneaster integrifolius</i>, 2 records, 0.3km Himalayan Balsam <i>Impatiens glandulifera</i>, 15 records, 0.3km Japanese Knotweed <i>Fallopia japonica</i>, 11 records, 0.3km Montbretia <i>Crocasmia x crocosmiiflora</i>, 1 record, 0.15km Only records for the last 10 years (until 2013) were included in the results. During the field survey large stands of Japanese Knotweed were recorded within the site boundaries along the river bank and on the edges of the semi-natural broadleaved woodland. As evidence of Schedule 9 plants have been found on Site, further recommendations regarding invasive plants are discussed.	Site
Badger	PBA	The desk study returned 2 records of Eurasian Badger <i>Meles meles</i>, 0.15km (latrine) Only records for the last 10 years (until 2013) were included in the results. Habitats on site had some suitability for foraging badgers (woodland) but no signs of badger were recorded during the survey.	

Ecological feature	Status ⁸⁹	Likelihood of occurrence	Ecological importance
		There is low likelihood of badger on Site and therefore they are not discussed further within this report.	
Hedgehog	Environment (Wales) Act 2016 S7	The date search returned records for: West European Hedgehog <i>Erinaceus europaeus</i>, 21 records, 0.2km Env (Wales) 2016 S7 Only records for the last 10 years (until 2013) were included in the results. Habitats on site are considered suitable for hedgehog to forage and nest.	
Invertebrates	Environment (Wales) Act 2016 S7	The data search supplied species listed in Section 7 of the Environment (Wales) Act 2016 (Species of Principal Importance) including: Knot Grass Moth <i>Acronicta rumicis</i>, 9 records, 0.65km closest to the site Green-brindled Crescent Moth <i>Allophyas oxycanthae</i>, 2 records, 0.65km Ear Moth <i>Amphipoea oculea</i>, 2 records, 0.65km Dusky Brocade Moth <i>Apamea remissa</i>, 2 records, 0.7km Small Heath Butterfly <i>Coenonympha pamphilus</i>, 6 records, 0.8km Small Phoenix Moth <i>Ecliptopera silaceata</i>, 3 records, 0.5km Dusky Thorn Moth <i>Ennomos fuscantaria</i>, 3 records, 0.6km Wall Butterfly <i>Lasiomata megera</i>, 1 record, 0.7km Brindled Beauty Moth <i>Lycia hirtaria</i>, 2 records, 0.4km White Ermine Moth <i>Spilosoma lubricipeda</i>, 3 records, 0.7km Buff Ermine Moth <i>Spilosoma lutea</i>, 5 records, 0.6km Blood-vein Moth <i>Timandra comae</i>, 2 records, 0.6km Only records for the last 10 years (until 2013) were included in the results.	

Ecological feature	Status ⁸⁹	Likelihood of occurrence	Ecological importance
		No invertebrates were recorded during the field survey but it is considered likely that both terrestrial and aquatic invertebrate species are likely to be found in habitats on site.	

NATURE CONSERVATION EVALUATION

- 3.6 The proposed development site contains two areas that have nature conservation designations. These are both Sites of Interest for Nature Conservation (The Taff and Rhondda Rivers SINC and the Lower Taff and Edwardsville Woods SINC). Both sites are classified as Priority Habitats in Wales and are considered to be of high ecological value. The remaining areas of the site do not contain any sites of nature conservation.
- 3.7 The habitats on the Site were recorded as being of high to moderate suitability for the following protected and noteworthy species:
- roosting and foraging bats;
 - otters;
 - reptiles; and
 - breeding birds.
- 3.8 Records for soprano pipistrelle, noctule and brown long-eared bat which are Species of Principal Importance (SPI) were returned in the desk study within 2km of the Site. It is not possible to confirm the value of bat populations that may be present at the site until further surveys have been undertaken. Recommendations for further surveys are provided in Section 4.
- 3.9 Records for otter were returned within 0.3km of the site, and habitats on site were considered highly likely to support otters being present within the works area. Therefore further recommendations for survey are provided within Section 4 of this report.
- 3.10 Habitats on site provide suitable areas for both reptiles and breeding and wintering birds. As the development works are likely to impact on these habitats further recommendations for these species are made within Section 4 of this report.

4 Recommendations

- 4.1 This section summarises the potential impacts on habitats and notable species that may be present at this Site. It also sets out the recommendations for further survey and mitigation where required.

FURTHER SURVEY AND MITIGATION

- 4.2 For each constraint identified as being of importance at greater than the site level, all mitigation options provided follow the established Mitigation Hierarchy as set out in Section 5.2 of BS42020:2013. This seeks as a preference to avoid impacts then to mitigate unavoidable impacts, and, as a last resort, to compensate for unavoidable residual impacts that remain after avoidance and mitigation measures. The measures set out below will address no net loss of biodiversity, although no formal calculation of losses and gains has been carried out. Features deemed important at the site level only are considered here only where further survey and/or mitigation is necessary to ensure legal compliance.
- 4.3 In the absence of mitigation, the following key ecological issues have been identified:
- Bats – There is potential for roosting bats to be present within the two mature oaks on Site, and the horse chestnut immediately adjacent to the north-eastern corner of Site, which might be affected by the proposed works. In the first instance, impacts to trees should be avoided through retaining and protection of trees and restricting proposed work to daylight hours to avoid noise and light pollution during bat active times. If this is not possible, further survey may be

required to establish the presence or likely absence of bats utilising these trees as roosts;

- Impacts to bat foraging and commuting corridors should be minimised through restricting of work to daylight hours and through controlling/restrictions of night illumination of the Site;
- Otters – habitats suitable for otters have been identified within the site and surrounding landscape. Further surveys are required to establish the presence or potential for presence within 500m up and down stream of the bridge.
- Breeding birds – Habitat suitable for breeding birds is present therefore measures must be undertaken to avoid harm to breeding birds during proposed development;
- Reptiles – habitat suitable for reptiles is present in the bracken and grassland and areas of log piles in proximity to the site and in areas due to be cleared for access to the works. Works should be undertaken under a precautionary working method statement to avoid disturbance or harm.
- Fish - Works should in the first instance be carried out from the riverbank where possible. Should in-channel works be required these should ideally take place outside of the fish spawning season (i.e. be carried out between 30th June and the 14th October), unless carried out within a dry bed or under appropriate consent from Natural Resources Wales. Where in-channel works are carried out in water, a continuous fish passage should be retained along the river corridor throughout the works to limit disruption to commuting fish. A check of the cobble riverbed for stone loach should also be made prior to installation of any scaffolding in the river (if required). Should a stone loach be found during this

check then it should be safely relocated to a suitable area of riverbed outside the area of works.

- Invasive species – Containment, control and prevention of spread of Japanese knotweed should be undertaken where works affect the area where it is present;
- Works should follow environmental best practice standards; and
- A range of measures should be undertaken to satisfy the requirement for ecological enhancement included in national planning policy.

STATUTORY AND NON-STATUTORY SITES

- 4.4 Impacts are predicted on two non-statutory designated sites, The Taff and Rhondda Rivers SINC and the Lower Taff and Edwardsville Woods SINC. The current footprint of the access route for the Site and the site works themselves on the northern side of the Site falls within the edges of the area of Ancient Semi-Natural Woodland and it is likely that the works will have some adverse impact on this habitat due to tree and soil removal. Under current plans 4 trees along the access track on the edge of the ASNW zone will be removed. Additionally, the works have the potential to cause damage to the river due to the potential for accidental pollution. Therefore, there are potential constraints to the proposed development in this regard.
- 4.5 Recommendations for the area of ancient semi-natural woodland would be that the minimal amount of habitat possible be removed, including soil as the microbiology of the soil in ancient woodlands is an irreplaceable habitat. It would be suggested that any loss be mitigated for by developing the area of bracken/tall ruderal that will be used for the temporary access on the lower slope into a new woodland plantation using the soils removed to retain the maximum amount of habitat possible. However it should be noted that in order to achieve this the Japanese knotweed currently in this area will have to be treated and destroyed before the mitigation works can be undertaken.
- 4.6 Pollution prevention methods will be required to be implemented for the river habitat to limit the potential for accidental spillages. In addition works should be conducted in such a way as to prevent or minimise disturbance of the riverbed.

HABITATS

Priority habitats

- 4.7 Both the river and semi-natural broadleaves woodland habitats recorded during the survey are classified as Priority Habitats in Wales. These habitats also form the areas of non-statutory designated sites and the constraints are therefore discussed in paragraph 4.4 above. No additional constraints are noted here.
- 4.8 The remaining habitats are considered common and widespread in Rhondda Cynon Taff and of value within the immediate vicinity of the site only. No particular constraints were identified in relation to the intrinsic value of the remaining habitats present; however, best environmental practice measures should be implemented, and care should be taken to maintain habitat connectivity through the site to the wider landscape.

Invasive species

- 4.9 Invasive species in the form of Japanese Knotweed were recorded across the site. This is a Schedule 9 species and as such it is illegal to cause the spread of this. The stands of Japanese Knotweed are located in close proximity to the bridge and within the area due to be cleared for access to the bridge. It is therefore recommended that measures are put in place to avoid the spread and mitigate the risk of allowing material to fall into the river.
- 4.10 A separate invasive species survey is recommended to map the exact locations that are at risk and provide advice on where to go for information on how best to deal with the removal of invasive species or advice on on-site management.

SPECIES

BATS

- 4.11 All British species of bat are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended). Under this legislation it is an offence to deliberately capture, kill, disturb and damage or destroy a bat roost. As such, to comply with legislation, further survey will be required to ascertain if bats are using this structure for roosting. Should a bat roost be present a Natural Resources Wales licence and mitigation strategy may be required. Some species of bat are also Species of Principal Importance.

- 4.12 As avoidance of impacts on the bridge is not possible (as detailed above), further surveys are recommended to determine presence or likely absence of roosting bats within the structure and surrounding retaining walls on Site as detailed in Table 4.1 below. Further surveys (dusk emergence and dawn-re-entry surveys) will be required on the basis of this and depending on the scope and extent of the proposed works.
- 4.13 No lighting in hours of darkness will be permitted as part of the project and therefore no effects from lighting are expected.

OTTER

- 4.14 Habitats suitable for otter were recorded across the site. A further full otter survey is required to look for evidence that they may be using the works site and surrounding area.
- 4.15 If evidence is found of otters using the site or within close proximity a number of otter specific measures should be put in place, including any site compounds being located away from the watercourse and any machinery and materials being locked away when not in use.
- 4.16 Any excavation works taking place on site will also need to be securely fenced off and covered when not in use to prevent otters accessing these areas. If areas cannot be fenced, ramps will need to be provided to prevent the possibility of otters becoming trapped.
- 4.17 Any work taking place within 30m of the watercourse will need to be restricted to taking place until one hour after sunrise and must be stopped a minimum of one hour before sunset.
- 4.18 If holts are discovered during works then an immediate stop to all works will need to occur and a 30m exclusion zone will need to be implemented. The ecologist for the Site will need to contact Natural Resources Wales for further advise before any further works in this area can continue.

BREEDING BIRDS

- 4.19 Several species of common birds including blue tit, woodpigeon, robin and long-tailed tit were recorded on site. All of these species may utilise suitable habitat recorded within

the Site for nesting, including the mature trees, semi-natural broadleaved woodland and bracken.

- 4.20 All wild birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). The proposed works require the possible removal of vegetation and trees with potential to support breeding birds.
- 4.21 To avoid any potential offences relating to breeding birds during their main bird breeding season (Newton et al., 2011), in the first instance removal of suitable habitat should be avoided. If habitat removal is unavoidable by proposed works, works should be conducted outside of bird breeding season between September and February inclusive. If this is not possible, a breeding birds check should be conducted prior to works commencing by an Ecological Clerk of Works (ECoW) as per Table 4.1.
- 4.22 Should they be present, nests should be suitably buffered with habitat in which no works can take place until the young have left the nest, ideally with connectivity to existing suitable habitat adjacent to the works area allowing the young to disperse into the wider area. The buffer should be a minimum of 5m, but may be more dependent on species and works taking place.

REPTILES

- 4.23 Due to the clearance works required through the area of bracken and Precautionary Working Method Statement (PWMS) will need to be created and all works undertaken in the area will need to follow this.
- 4.24 The PWMS will need to state the method and timing of all clearance works within the site, and these will need to be done under the supervision of an Ecological Clerk of Works (ECoW). This will be needed prior to any clearance for GI works as well as the temporary access tracks.
- 4.25 Vegetation clearance will need to be done ideally during the reptiles' active season, April to September inclusive.

OTHER PROTECTED SPECIES

- 4.26 In the unlikely event that any protected species are found during site clearance or construction, works must stop immediately and advice sought from a suitably qualified ecologist on how to proceed.

ENVIRONMENTAL BEST PRACTICE

- 4.27 Best environmental practice measures which should be implemented include:

- Adherence to best construction practise including CIRIA guidance (Connolly and Charles, 2005) and Pollution prevention for businesses guidelines (Defra/ Environment Agency, 2016);
- Protection of any nearby trees and establishment of adequate Root Protection Zones (RPZs) particularly for works near the large oak trees and horse chestnut in accordance with British Standards Institution (2021) *BS 5837:2012 – Trees in relation to design, demolition and construction* guidelines;
- Appropriate storage of fuels and chemicals to minimise the risk of accidental spillage or contamination of River Taff e.g. through the use of spill kits;
- Avoidance of deterioration in air quality. For example, limiting the effects of vehicle emissions by avoiding the idling of machinery and reducing dust particle deposition by damping down areas of bare ground during dust-generating activities; and
- Utilisation of noise control.

FURTHER SURVEY REQUIREMENTS

- 4.28 Table 4.1 lists further survey requirements as recommended in the constraints section.

Table 4.1: Further survey requirements

Ecological Feature	Survey Requirement	Number of surveys and seasonal considerations
Bats	Dusk/Dawn surveys to establish presence/absence of bats in bridge structure and surrounding supporting walls.	Further surveys (dusk emergence or dawn re-entry) are recommended on the basis of the PGLRA results and the scope/extent of the proposed works. These would comprise two visits for any features with moderate roost potential and three for those with high roost potential. Emergence surveys must be carried out between May and August and spread evenly across this period (Collins, 2016).
Otters	Inspection of river and banks up and downstream from the works area for any signs of otter presence.	A survey is to be conducted to look for signs of otter presence within habitat and establish if any potential resting spots (couches) or holts are present within the vicinity of the works. If presence of otters within the site is established a 30m exclusion zone needs to be created and works within the water undertaken within daylight hours post sunrise and pre sunset.
Birds	Inspection of vegetation suitable prior to removal during breeding season.	ECoW to undertake breeding birds check prior to commencement of works during bird breeding season. Any active nests should be adequately buffered in which no works can take place until young have fledged and left the nest, ideally connected to adjacent vegetation to allow young to safely disperse outside works area.
Reptiles	Inspection of vegetation suitable prior to removal during active season.	ECoW to undertake reptile checks prior to commencement of works during the active season. Works to be conducted under a PWMS and any reptiles found should be translocated out of the works area and a suitable buffer created in which no works can take place. If a reasonable number of reptiles is found then measures will need to be implemented to keep them out of the works zone post clearance works.

SUMMARY OF RESIDUAL EFFECTS

- 4.29 Provided that the above is adhered to, with the exception of the additional information required to assess impacts on roosting bats and otters, the majority of identified impacts to ecological receptors will have been addressed, with no residual impacts. However, the impact on the priority habitat of ancient semi-natural woodland cannot entirely be mitigated for, there will be a net biodiversity loss if there is a loss of any ancient woodland. This cannot be offset through the provision of other habitats and consultation with the council will be required in order to establish the best course of action for this habitat.

- 4.30 Options include, adjusting the access track to ensure that any areas of ancient semi-natural woodland are retained. Looking again at accessing the bridge from the south side of the river to undertake works, therefore avoiding any impacts on priority habitats.

OPPORTUNITIES FOR ECOLOGICAL ENHANCEMENT

- 4.31 Planning policy at the national and local level and strategic biodiversity partnerships encourage inclusion of ecological enhancements in development projects. Ecological enhancements can also contribute to green infrastructure and ecosystem services such as storm water attenuation and reducing the urban heat island effect. Measures set out below can be used to achieve a net gain in biodiversity. Please note, however, that no formal calculations have been provided in this instance. The following measures would be suitable for integration into the Site's design.

Option 1: Bird-nesting opportunities

- 4.32 Installation of bird boxes in suitable habitat (e.g. mature trees) within the Site. This would likely be within the adjacent woodland and in proximity to the river. Bird boxes for grey wagtail and dipper should particularly be considered.

Option 2: Bat roosting boxes

- 4.33 Installation of roosting boxes within trees in the woodland adjacent to the bridge. These should be south/south-east/south-west facing to give a range of temperatures throughout the season. Bat bricks within the abutment walls at either end of the new bridge could also be considered where appropriate.

Option 3: Reptile habitat provision

- 4.34 Any trees cut down or brash from vegetation clearance that can be left in situ would make suitable habitat for reptile hibernacula. Vegetation would need to be left where it would be undisturbed and get adequate sun exposure for basking reptiles. This would also provide suitable dead wood habitat for invertebrates in the area.

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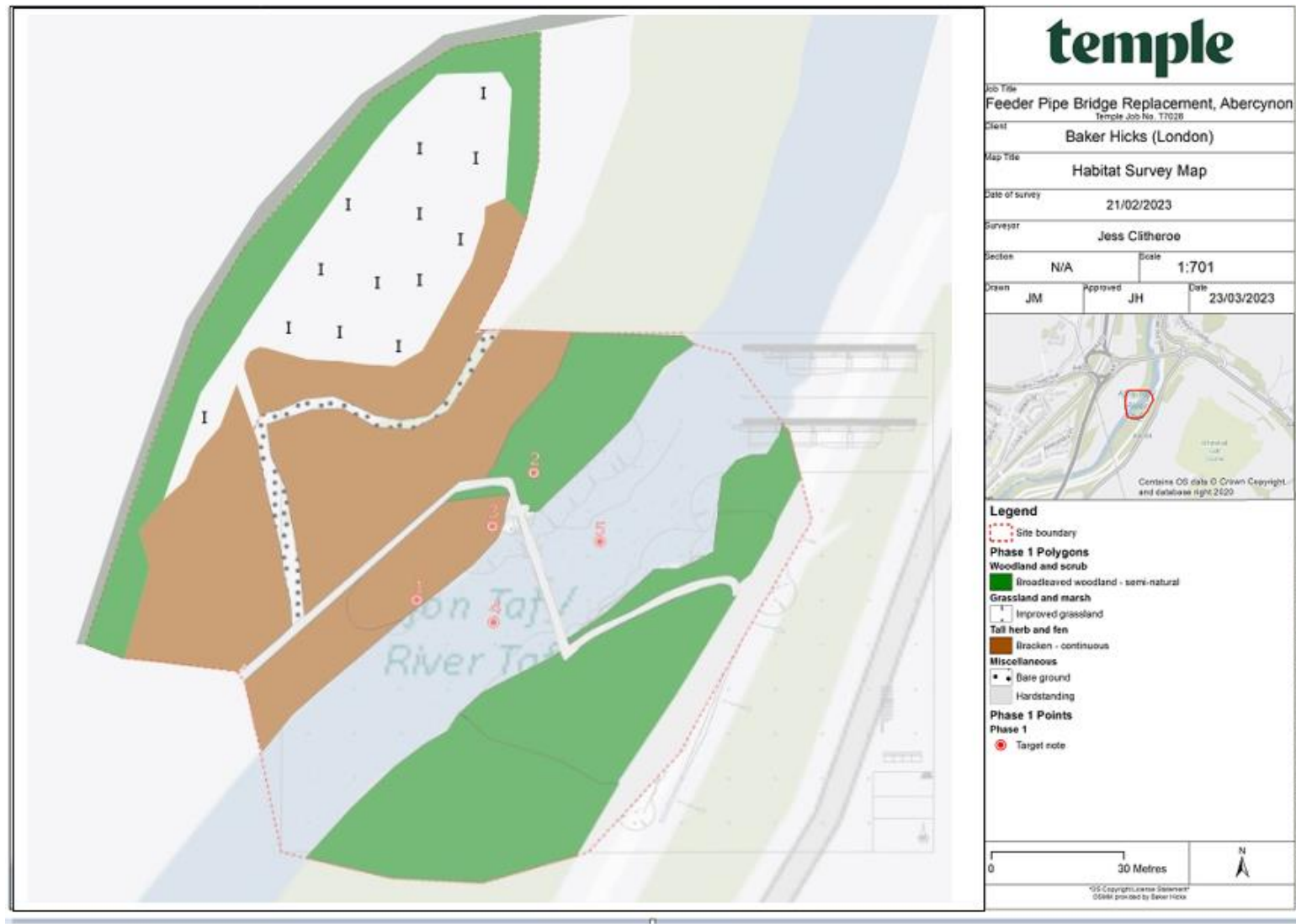
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Appendix 1: Site Map

Figure 1 – Site Map



Appendix 2: Species List

Botanical Species List for Feeder Pipe Bridge, Abercynon, from the Phase 1 habitat survey and protected and notable species assessment carried out on the 21st February 2023.

Scientific nomenclature and common names for vascular plants follow Stace (2019) and Blockeel and Long (1998) for bryophyte species. Please note that this plant species list was generated as part of a Phase 1 habitat survey, does not constitute a full botanical survey and should be read in conjunction with the associated results section of this PEA.

Abundance was estimated using the DAFOR scale and additional notes taken as follows:

D = dominant, A = abundant, F = frequent, O = occasional, R = rare, L = locally
c=clumped, e=edge only, g=garden origin, p=planted, y = young, s=seedling or sucker, t=tree, h=hedgerow, w=water

Scientific Name	Common Name	Abundance	Qualifier
<i>Semi-natural broadleaved woodland</i>			
<i>Hedera helix</i>	Common Ivy	A	
<i>Rubus fruticosus agg.</i>	Bramble	A	
<i>Fraxinus excelsior</i>	Ash	O	t
<i>Ilex aquifolium</i>	Holly	O	t
<i>Salix sp.</i>	Willow species	O	t
<i>Quercus robur</i>	Pedunculate Oak	F	t
<i>Fagus Sylvatica</i>	Beech	O	t
<i>Alnus glutinosa</i>	Alder	A	t
<i>Betula pendula</i>	Silver Birch	A	t
<i>Corylus avellana</i>	Hazel	O	t
<i>Fallopia japonica</i>	Japanese knotweed	O	
<i>Asplenium scolopendrium</i>	Hart's tongue fern		
<i>Clematis vitalba</i>	Clematis/Traveller's Joy		
<i>Scattered broadleaved trees</i>			
<i>Salix sp</i>	Willow Species	O	t
<i>Quercus robur</i>	Pedunculate Oak	R	t
<i>Betula pendula</i>	Silver Birch	F	t
<i>Tall Ruderal</i>			
<i>Fallopia japonica</i>	Japanese knotweed	A	
<i>Buddleja davidii</i>	Butterfly-bush	R	
<i>Rosa canina</i>	Dog rose	O	
<i>Urtica dioica</i>	Common nettle	A	
<i>Arrhenatherum elatius</i>	False oat grass	A	
<i>Crataegus monogyna</i>	Hawthorn	O	t,y
<i>Rubus fruticosus agg.</i>	Bramble	A	
<i>Bracken</i>			
<i>Pteridium aquilinum</i>	Bracken		

Appendix 3: Target Notes

Target Notes List for Feeder Pipe Bridge, Abercynon from the Phase 1 habitat survey and protected and notable species assessment carried out on the 21st February 2023.

Target note (TN)	Description
1	Large stand of Japanese knotweed along riverbank stretching from one section of woodland by the bridge to the next section of woodland downstream from the bridge
2	Small number of Japanese knotweed stands around edges of woodland and in small clumps alongside the steps of the footpath up to the main public footpath
3	Large logpile of stacked logs suitable for reptile basking and resting.
4	Otter spraint on rock in centre of the river (see otter report for further details)
5	Otter spraint on rock in centre of the river (see otter report for further details)

Appendix 4: Photographs

Photograph 1 View of feeder pipe bridge looking north upstream.



Photograph 2 View looking south downstream from feeder pipe bridge showing river and wooded banks.



Photograph 3 Section of Japanese knotweed alongside river at edge of semi-natural broadleaved woodland.



Photograph 4 Area of stone wall at north-west end of feeder pipe bridge. Gaps in walls suitable for bats to use for roosting.



Photograph 5 Area of stone wall at south-east end of feeder pipe bridge. Gaps in walls suitable for bats to use for roosting.



Photograph 6 View of edge of semi-natural broadleaved woodland on north-west bank of the river. Stand of Japanese knotweed can be seen in the bottom left corner.



Photograph 7 View of north bank of the river looking downstream. Showing proposed end location of access route to bridge. Stand of Japanese knotweed can be seen along the riverbank.



Photograph 8 View looking up steps to public footpath. Woodland edge to right of path and tall ruderal/scattered trees to left of path.



Photograph 9 View looking down from top footpath. Showing habitat that the proposed access route would go through. Mainly bracken with some scattered trees. Stand of Japanese knotweed is found at the bottom of the slope running alongside the river.



Photograph 10 View looking down from top access area (location of route from compound. Bracken covers each side of the current path with occasional scattered trees.



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