



7028

Compensation Management and
Monitoring Plan
Report for Baker Hicks

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1 Introduction

BACKGROUND

- 1.1 Temple was commissioned by Baker Hicks in March 2024 to produce an in perpetuity Compensation Management and Monitoring Plan (CMMP) for Abercynon Feeder Pipe Replacement Bridge (henceforth referred to as 'the Site'). This follows on from the Preliminary Ecological Appraisal Report (Temple, 2023a), Preliminary Roost Assessment Report (Temple, 2023b) and the Arboriculture Impact Assessment Report (Temple, 2024d). The information collated from this work has been used to inform an in perpetuity strategy, with recommendations on how to keep the enhancement measures thereafter, to provide achievable targets in line with the Planning Permissions outlined by Rhondda Cynon Taff Borough Council.
- 1.2 This report should be read in conjunction with The Preliminary Ecological Appraisal report (Temple, 2023a), the Preliminary Roost Assessment report (Temple, 2023b), the Arboriculture Impact Assessment (Temple, 2024a), the Construction Ecological Management Plan (Baker Hicks, 2024), the Precautionary Working Method Statement for Protected Species (Temple 2024b) and Invasive Non-Native Species (Temple, 2024c).

SITE CONTEXT AND STATUS

- 1.3 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.

SCOPE OF THE REPORT

- 1.4 This CMMP should be read alongside the description of the habitats on site at the time of the surveys undertaken by Temple in 2023 is provided. Where appropriate, measures to target specific species or groups have been included, along with management and monitoring measures.

- 1.5 As part of the Site is designated as a non-statutory designated site and the north-eastern end of the Site is adjacent to an area of Ancient Semi-Natural Woodland, the aims and objectives of this report have been made with consideration to this.
- 1.6 This report has been written by Carney Burvill MSc, who has 3 years' consultancy experience. The report has been reviewed by Jess Clitheroe a Principal Ecologist with 10 years' experience who is competent and experienced in producing Management and Monitoring Plans.

2 Compensation Management and Monitoring Plan

OVERVIEW

- 2.1 This Compensation Management and Monitoring Plan (CMMP) has been produced to make sure a high quality, ecologically sensitive approach to enhancing the existing habitats on site to the ecological value in the long-term and to incorporate features for specific species or groups where appropriate.
- 2.2 A habitat map based on the Preliminary Ecological Appraisal (PEA) survey undertaken by Temple in 2023 and a map showing the post management plans are presented in Appendix A. A management and monitoring schedule is provided in Appendix B. The Planting Schedule is presented in Appendix C and Appendix D shows an Annual Site Monitoring Form completed as an example.
- 2.3 Any contractors appointed to undertake management and monitoring works should have a proven track record and experience of working on conservation sites where protected species are present.

BASELINE ECOLOGICAL CONDITIONS

- 2.4 The site is not subject to any statutory nature conservation designations and no statutory designated sites are found within 2km radius of the site. There are 16 non-statutory sites designated as Site of Importance for Nature Conservation (SINC) present within 2km of the site. The nearest of these is Lower Taff and Edwardsville Woods located on the north of the River Taff directly across from the Site.
- 2.5 The River Taff and semi-natural broadleaved woodland habitats within the Site are classified as Priority Habitats in Wales. These areas also form areas of non-statutory designated sites (the Taff and Rhondda Rivers SINC, and the Lower Taff Edwardsville Woods SINC). Impacts from the development are predicted on these two SINC.

- 2.6 On the northern side of the Site an area of Ancient Semi-Natural Woodland falls within the Site boundary. It is likely that works will have some adverse impact on this habitat due to the planned soil and tree removal works. Recommendations for the area of ancient semi-natural woodland would be that minimal amount of habitat possible is to be removed, including soil as the microbiology of soil in ancient woodlands is an irreplaceable habitat.
- 2.7 Along the south bank 20 trees and 1 group of trees are set to be removed to facilitate the proposed works. Compensatory measures are required of a ratio of at least 3 trees to be planted for every 1 lost to comply with Planning Policy Wales, Edition 12 for Green Infrastructure.
- 2.8 The Site contains the Invasive Non-Native Species (INNS) Japanese knotweed, *Reynoutria japonica*. This is found present near the edge of the woodland areas and in close proximity to the pipe feeder bridge where works are to commence on the North side of the Site. It is also found throughout the site compound area on the South side of the Site. There is also the potential for the invasive non-native species Monbretia, Himalayan Balsam and Signal Crayfish to be present. Control of these INNS should be paramount to prevent further spread. A separate Invasive Non-Native Species Method Statement has been prepared and should be read in conjunction with this report (Temple, 2024c).

HABITAT

- 2.9 The Preliminary Ecological Appraisal survey undertaken by Temple in 2023 identified a range of habitats on site. The North Site comprised a large area of semi-natural broadleaved woodland, with some scattered scrub and scattered trees. Bracken and improved grassland are the other dominant habitats within the Site. There are also small areas of pebble beach and hardstanding.

2.10 Between the two halves of the Site (North and South) runs the River Taff a large waterbody with wooded banks. These are muddy/sandy shallow banks to the north side and steep stony banks to the south side.

2.11 The South Site comprised a large area of semi-natural broadleaved woodland, with scrub to the centre and a road bordering one side. For a further description of habitats see the Preliminary Ecological Appraisal report (Temple, 2023a).

LEGISLATION

2.12 It is considered that the following key pieces of nature conservation legislation represent a constraint that will influence management on site:

- Wildlife and Countryside Act 1981 (as amended);
- The Environment (Wales) Act 2016; and
- Conservation of Habitats and Species Regulations 2017 (as amended)) (commonly referred to as the Habitats Regulations).

2.13 The Preliminary Ecological Appraisal Report for the site (Temple, 2023a) recommended further surveys for protected species where suitability was identified. These further surveys have been conducted for bats, otters and breeding birds but not conducted to confirm presence or absence for reptiles, a suitable precautionary working methods statement has been written (Temple 2024b) and approved by a suitably qualified ecologist and will be communicated to the contractor via toolbox talks or direct supervision, where appropriate. The habitats on the Site were recorded as being of high to moderate suitability for supporting or having the potential to support the following protected species:

- Roosting and foraging bats;
- Otters;
- Reptiles; and

- Breeding birds.

2.14 Without the adoption of precautionary working methods or further survey and licencing where appropriate, the following risks (that would constitute an offence under the legislation) are relevant to the site and would influence management:

- Damage or destruction of an active bird's nest;
- Death or injury to otter and damage or disturbance to holt or resting places;
- Killing, injury or disturbance to bats. Damage or destruction of a breeding site or resting place; and
- Death or injury to reptiles.

2.15 The Preliminary Ecological Appraisal report also identified the presence of an invasive non-native species Japanese knotweed and the potential for Himalayan Balsam, Monbretia and Signal Crayfish. These invasive species are listed in schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Where management prescriptions relating to this species are outlined, methods for correct management of this must be outlined and put into place by the contractor or other responsible party. A separate INNS Precautionary Working Method Statement has been produced for this (Temple, 2024c).

AIMS AND OBJECTIVES OF MANAGEMENT

2.16 The aim of this CMMP is to create, maintain and enhance the form and condition of habitats on the site to achieve an uplift in the ecological value of the Site.

FUNDING OF THE MANAGEMENT PLAN

2.17 The works outlined within this report will be fully funded by the local authority. Rhondda Cynon Taff Borough Council.

PREScriptions FOR HABITAT MANAGEMENT

AREA-BASED HABITATS

Semi-natural broadleaved woodland (priority habitat)

- 2.18 **Overview:** Running along both the northern and southern sides of the river, dominating the survey area, were sections of semi-natural broadleaved woodland, abundant with alder, pedunculate oak, beech, hawthorn silver birch, hazel and holly. Along the northern side of the river is the Ancient Semi-Natural broadleaved woodland which had more mature trees than those on the southern side. Along the woodland edge running towards the riverbanks on the north side of the river there was an abundance of invasive Japanese knotweed.
- 2.19 **Objective(s):** To enhance and maintain areas of semi-natural broadleaved woodland.
- 2.20 **Management and Monitoring Requirements:** To achieve the desired outcome, protection of any nearby trees and establishment of adequate Root Protection Zones (RPZs) particularly for works near the large oak trees, beech and horse chestnut in accordance with British Standards Institution (2021) *BS 5837:2012 – Trees in relation to design demolition and construction guidelines*.
- 2.21 It is recommended in the PEA survey (Temple, 2023a) to replace an area of bracken on the North side of the river to be turned into semi-natural woodland. However, following further discussions no planting is required in this area. Instead a programme of woodland management for enhancement will be undertaken.
- 2.22 Where possible avoidance to disturbance of the soil within the ancient semi-natural woodland should take place as this is an irreplaceable habitat and cannot be compensated for. Control of the spread of Japanese knotweed and any other invasive species should be undertaken following strict compliance with the approved methods outlined within the Invasive Non-Native Species Method Statement (Temple, 2024c).

2.23 Woodland management to the South of the river should occur to help make sure that tree species planted and the woodland mix recommended becomes established, aiding with perpetuity. There are opportunities for new tree planting around the development proposals for the south side of the river, as replacement for trees lost due to development. Woodland management and monitoring should follow the Management Schedule (Appendix B).

Scattered broad-leaved trees

2.24 **Overview:** Several scattered native trees are located within the stands of bracken on the northern side of the river. A greater abundance of Silver birch *Betula pendula* is present with a small number of willows.

2.25 **Objective(s):** To manage the harm to these species and where possible increase the condition of these trees and value they provide to the habitat.

2.26 **Management and Monitoring Requirements:** To achieve the desired outcome, protection of any nearby trees and establishment of adequate Root Protection Zones (RPZs) in accordance with British Standards Institution (2021) *BS 5837:2012 – Trees in relation to design demolition and construction guidelines*. Furthermore, control of Japanese knotweed should be undertaken using the methods and timescales outlined within this report and within the INNS method statement.

Scattered scrub/tall ruderal

2.27 **Overview:** Areas of scattered scrub and tall ruderals occurred within the area of vegetation clearance proposed within the South Site. Sward height was up to 1m and species included abundant common nettle *Urtica dioica*, false oat-grass *Arrhenatherum elatius* and bramble *Rubus fruticosus*. Occasionally occurring were hawthorn saplings and dog-rose *Rosa canina*.

2.28 **Objective(s):** To enhance areas which are lost during commencement works.

2.29 **Management and Monitoring Requirements:** Planting of a native scrub species (Appendix C, Figure 3) in areas removed during works completion. Once established native scrub species will enhance and compensate for the previous loss of scattered scrub and tall ruderal. Monitoring of native scrub species is required to make sure that the species become established and grow. Monitoring works can be completed annually during woodland management checks. New scrub saplings will be pit-planted in accordance with the plans laid out in the LEMP (SLR, 2024).

Improved Grassland

2.30 **Overview:** The area to the northern boundary of the site is a large field of improved grassland. The majority of these 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 dogwalkers and pedestrians.

2.31 **Objective(s):** To maintain improved grassland to be suitable for pedestrians and dogwalkers.

2.32 **Management and Monitoring Requirements:** Make sure cutting of grass is done bi-annually to keep sward height at around 30cm. Monitoring and management of this grassland will allow for the purpose of the woodland for use by pedestrians and dog walkers to be maintained.

2.33 A suitable seed mix (Emorsgate EG1) is proposed as part of the restoration phases after works completion and has been indicated on the Planting Plans (Appendix A, Figure 2).

Running water

2.34 **Overview:** The River Taff runs through the centre of the Site. 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. Japanese knotweed is present in close proximity to the bridge where works are set to be completed.

2.35 **Objective(s):** make sure no pollution from bridge replacement works enters the river. It is also required to make certain that the nearby Japanese knotweed does not enter the water stream.

2.36 **Management and Monitoring Requirements:** Through appropriate mitigation measures make sure no pollutants or materials enter the river during works commencement. Suitable capture traps for debris and silt are recommended. Make sure the compound for works is to be located away from the watercourse to minimise risk of pollutants entering the watercourse. Spill mats and other mitigation measures are present on-Site during works completion with a trained workforce to make sure no oil spills enter the water.

2.37 As the semi-natural ancient woodland soil in an irreplaceable habitat in Wales, it is not possible to remove the Japanese knotweed prior to work commencement. An Invasive Non-Native method statement has been produced with regards to Japanese knotweed (Temple, 2024c). This should be strictly followed and recommends cutting of Japanese knotweed, and on the North side of the river laying track mats over the cut stands to allow vehicles to operate and drive and to allow work commencement, without coming into contact with Japanese knotweed. Washing of tyres as they leave the site will take place to make sure that no spread of INNS as they leave the track mats shall occur. To the south of the river this will be done by moving of soil containing cut stands followed by laying down of stone to allow vehicles to operate and drive to allow work commencement, without coming into contact with Japanese knotweed and therefore minimising the possibility of spreading Japanese knotweed. Washing of wheels will be undertaken before vehicles leave the site compound and water will be allowed to drain away into the soil.

Hardstanding

- 2.38 **Overview:** 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 the river.
- 2.39 **Objective(s):** Keep areas of hardstanding fit for purpose post completion of works.
- 2.40 **Management and Monitoring Requirements:** If any damage is done to the hardstanding, reparation works are required to allow the public and private footpaths to still be safe and used for purpose. Monitoring should take place frequently with reporting, including during other monitoring works.

Invasive Species: Japanese Knotweed (plus precautionary for Himalayan Balsam, Monbretia and Signal Crayfish)

- 2.41 **Overview:** Where possible, works should take place in a manor to avoid disturbance to Japanese Knotweed and other potential invasive species. Methods for removing Japanese knotweed cannot be used as semi-natural ancient woodland soil is an irreplaceable habitat. Therefore, an INNS MS for all invasive species including Japanese knotweed has been produced (Temple, 2024c). Complete avoidance of Japanese Knotweed is not possible as this is found throughout the compound site and in close proximity to the bridge where replacement works are set to commence.
- 2.42 **Objective(s):** Make certain no spread of Japanese knotweed or other invasive species material occurs.
- 2.43 **Management and Monitoring Requirements:** Avoid the spread of Japanese knotweed and other invasive species by following strictly the Invasive Non-Native

Species Method Statement (Temple, 2024c) which should be read in conjunction with this report.

- 2.44 This recommends, on the North side cutting the Japanese knotweed stands in-situ, and laying track mats over the cut strands to allow vehicles to operate and drive without directly making contact with the Japanese knotweed and therefore reducing the possibility of spreading any material. Washing of tyres prior to leaving the matting will make sure no spread of the INNS shall occur.
- 2.45 Post works a Knotweed treatment plan will be implemented on land on the northside that is within the site boundary.
- 2.46 To the south of the river this will be done through a 3 step process.
- 2.47 Step 1: The existing topsoil within the compound area shall be stripped back (approximately 300mm in depth) to create the formation. The contaminated topsoil layer will be removed before being stored on site within the redline boundary. The topsoil shall be stored in this location for the duration of the works. After the topsoil strip has been completed, the wheels of the excavator and boots of the workers on site will be cleaned at a designated location away from the river edge as shown in Figure 2. A low pressure hose will be used to carry out this cleaning. After cleaning, the excavator will be relocated to an uncontaminated area. The cleaning process will be conducted in such a way that the runoff water will percolate directly into the subsoils.
- 2.48 No contaminated topsoil will be removed off site.
- 2.49 Step 2: After stripping the topsoil, an initial geotextile layer (consisting of terram or similar approved) will be laid at formation. A minimum thickness of 300mm of 6F5 stone will be then laid on top of this and compacted. Once this initial 300mm of 6F5 has been laid and compacted, a further geotextile layer (again consisting of terram or similar approved) will be placed. 6F5 stone will then be laid in 500mm steps above this and interwoven/ wrapped with geogrid (Naue Combei Grid or similar approved) up to

finished platform level. The geogrid is needed to help reinforce the material for the crane platform. Figure 4 within the CEMP shows the location of the geotextiles, geogrids and stone layers.

- 2.50 This platform shall be designed to accommodate a 300t crane.
- 2.51 Step 3: Once the crane platform is built, and the contaminated material is buried below the platform, the site compound will be ready to operate without the need for any further cleaning of vehicles. At this stage, the low pressure hose as required will be used to wash the wheels of the vehicles leaving the site to prevent any mud from being deposited onto the Tram Road.
- 2.52 Post works, with respect to the removal of the 6F5 stone, the 6F5 material located above the 300mm 6F5 sacrificial layer will be excavated and recycled. The 300mm sacrificial 6F5 layer itself will be classed as contaminated and sent to a licenced waste management facility.
- 2.53 The stockpiled topsoil will then be replaced back where it came from before undertaking planting/ landscaping works. The wheels of all plant, materials (including temporary fencing), and boots of the workers on site, including the landscapers will be cleaned at a designated location away from the river edge as shown in Figure 2 of the CEMP. A low pressure hose will be used to carry out this cleaning.
- 2.54 After cleaning, the plant and fencing will be loaded on a transporter at the edge of the Tram Road before it is transported off site. The cleaning process will be conducted in such a way that the runoff water will percolate directly into the soils.
- 2.55 If found on Site, any material from the area containing Himalayan Balsam/Monbretia that needs to be removed temporarily will need to be treated as controlled waste and

stockpiled. As soil cannot be removed from site it will remain within a stockpile area on Site until it can be replaced once construction works are complete.

- 2.56 To prevent individual crayfish being transported between waterbodies and to kill the potential spores from crayfish plague prior to entering another waterbody, biosecurity measures will be put in place. This includes cleaning of all equipment, for example boots, machinery, tools, prior to entry into the water and on leaving the water.

POST-MANAGEMENT ECOLOGICAL CONDITIONS

- 2.57 Enhancements of the habitat types, area and condition following the successful implementation of the measures outlined in this management plan will make sure that post-development the habitat will be of greater ecological worth to the local and wider areas. Changes to the habitat through the described management interventions will result in improved conditions, however the worth of these habitats could vary depending on timescales and changes in environmental conditions outside of the scope of this management plan.

PRESCRIPTIONS FOR ECOLOGICAL FEATURES

- 2.58 The following prescriptions for ecological features have been based on recommendations made in the PEA report (Temple, 2024).

Provision of Bird Nesting Opportunities

- 2.59 **Overview:** Several species of common birds were recorded on site during the survey, this included blue tit, woodpigeon, robin and long-tailed tit. All these species may

utilise suitable habitat recorded within the Site for nesting. These habitats include mature trees, semi-natural broadleaved woodland, bracken and gaps in rock faces.

- 2.60 **Objective:** To provide nesting opportunities for appropriate birds which would be present on site.
- 2.61 **Requirements:** Installation of bird boxes for grey wagtail and dipper in suitable habitat (e.g. mature trees) within the Site. This would likely be within the adjacent woodland and in proximity to the river.
- 2.62 Tree felling is to commence during the breeding bird season. Therefore prior to any tree felling activities a nesting bird check must commence to confirm the presence/absence of nesting birds. Nesting bird checks are valid for a period of 48 hours. If nesting bird species are found, an appropriate buffer is to be erected and any vegetation removal/tree felling works within the buffer zone are to be halted.

Provision of Bat Boxes

- 2.63 **Overview:** The site was found to have potential roosting opportunities for bats, such as cavities in the two mature oaks on Site and the horse chestnut immediately adjacent to the north-eastern corner of Site. The site also hosts foraging and commuting corridors for bats.
- 2.64 **Objective:** To provide an increase in roosting opportunities through the provision of bat boxes, particularly within trees in the woodland adjacent to the bridge. Trees selected must be well established, in good habitat, suitable for use by bats in areas providing adequate connectivity to the wider landscape and easy access to the river for foraging and commuting.
- 2.65 **Requirements:** Bat roosting features should be set up in the woodland adjacent to the bridge. To comply with pre-commencement Condition 7 before any site clearance

takes place bat boxes shall be erected in accordance with details which have first been submitted to the Local Planning Authority (see Appendix B for more details). Bat boxes such as Schwegler Type 1FF (Schwegler, 2023) or equivalent should be installed on suitable trees in this area south/south-east/south-west facing to give a range of temperatures throughout the season. Bat boxes are to be attached as per instructions provided, using materials that come with the box, nails shall not be fully hammered into the tree to allow room for tree growth. The original trees identified were T4, T33 and T42, all mature beech and oaks, which are well established trees in close vicinity to the area where trees are to be lost. This provides nearby roosting opportunities. The trees identified are also along potential flight paths used by bats, and have good connectivity to the river which provides foraging and commuting habitats for the bats. Following the site visit to confirm locations for bat box placement tree T33 has been replaced by T32 as per the bat box technical note issued (Temple 2024e).

- 2.66 Bat bricks within the abutment walls at either end of the new bridge could also be considered where appropriate. The current plans to feature 5 bat boxes alongside with the additional woodland planting should be appropriate compensation for any loss which occurs during the works. Monitoring of the Schwegler bat boxes should be completed by a suitably qualified ecologist to make sure that the condition of these bat boxes does not deteriorate and that they are maintained in a suitable condition for roosting bats. Schwegler bat boxes are expected to last 20 – 25 years (Schwegler, 2023), however, this can be shortened through harsh weather conditions or vandalism, therefore yearly monitoring of bat boxes is required to ensure that these boxes continue to provide suitable and safe roosting habitat for bats. This is to allow for a

retention of bat roosting features in the area whilst newly planted trees and trees already present on site age and potentially develop suitable features.

Provision of Reptile Habitat

- 2.67 **Overview:** There is a woodpile located approximately 30m from the bridge which would be considered suitable habitat for reptiles to use for basking and sheltering purposes. Other suitable habitat areas in the wider site includes large areas of bracken and grassland which would be highly suitable for reptiles to use as shelter.
- 2.68 **Objective:** To retain or provide alternative suitable basking and sheltering opportunities for reptiles.
- 2.69 **Requirements:** 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. Current plans only propose one additional hibernacula. However, the recommendations for any felled trees to be left as hibernacula is still recommended.

Provision of Otter Habitat

- 2.70 **Overview:** Although no holts have been found within the site evidence of otters using the site has been found. Remedial works to voids in the rock strata are required as part of the works to develop the bridge, as part of this the voids are proposed to be

filled with scour. These voids present potential locations for use by otter as resting up places.

- 2.71 **Objective:** To retain or provide alternative resting up locations for use by otter.
- 2.72 **Requirements:** Due to this loss of potential features on site an artificial holt will be required to be built on site as part of compensation works. Any trees felled during vegetation clearance could be used to create a log-pile holt. The suitable location for the holt will be agreed on site by the ecologist overseeing works and the engineers.

Loss of trees

- 2.73 **Overview:** To facilitate the works proposed, 20 individual trees and 1 group of trees consisting of approximately 15 immature oak and hawthorn trees are to be removed from the south bank. The Arboriculture Method Statement (Temple, 2024) also identifies that the removal of three Alder species (T57, T59 and T89) is the least amount of trees required to be removed from the north if the majority of proposed works can be undertaken from the south bank.
- 2.74 **Objective:** To ensure compensation for the loss of these trees is sufficient and in compliance with Planning Policy Wales Edition 12 for Green Infrastructure. A replacement planting requirement of a minimum of 3 trees for every 1 lost is necessary.
- 2.75 **Management and Monitoring Requirements:** The new planting as shown on the Planting Plans will include compensation for the loss of trees at a ratio of at least 3 trees for every 1 lost. Current planting proposals include 18 individual trees and within the scrub mix, 116 large and small trees are to be planted along the south side of the river – a total of 134 trees – a mix of trees, large shrubs and small trees. Management

and monitoring of these to make sure that these species become established is required to compensate for the loss.

- 2.76 For only 3 trees to be removed from the North side, it is recommended that the majority of the works are to be accomplished from the south side of the river. With limited works required on the north side and very limited small plant machinery to be used. Small machinery must only use existing track for access. Where possible works on the north side of the river will be completed and/or accessed by crane from the south. Management to compensate for the loss of these trees will be left to natural regeneration of the ancient woodland habitat. No planting will be undertaken on the North side.

MONITORING

- 2.77 It is important to monitor the success of long-term management to make sure that the habitat management and ecological features outlined are delivering the desired results.
- 2.78 Annual monitoring will be undertaken by a suitably qualified ecologist. This should be in the form of walkover surveys to record the condition of habitats, at a time of year where this can best be assessed for each specific habitat, and any ecological features

such as bat and bird boxes and hibernacula. A monitoring form, with example entries, is presented in Appendix D, Figure 1.

- 2.79 The landscape management monitoring will report on establishment and success of planting, including the need for any replacements and notifying any evidence of disease.

REMEDIAL MEASURES

- 2.80 Should monitoring indicate that habitats are not reaching target condition or are falling behind indicated timescales, a suitably qualified ecologist should be consulted and the reasons behind the failure identified. Appropriate methods should be put into place to either get the habitat targets back on track or on an amended timescale. If the failure is caused by unavoidable environmental factors, such as a consistent change in climatic conditions, a suitable alternative target and methods should be put into place.
- 2.81 Any changes should be included in the review and update of the management plan as detailed below.
- 2.82 If any bat boxes are marked for replacement, the box being replaced will require a check by a licenced ecologist prior to removal. A licence may need to be in place before being removed and replaced.
- 2.83 If any hibernacula show signs of vandalism or collapse, they will be reinstated. Should any be subject to regular flooding, replacements will be created in new suitable

locations as determined by a suitably qualified ecologist. The existing ones will be left in situ as they will still be of value to some species.

- 2.84 If any bird nesting provisions are damaged these shall be checked by a suitably qualified ecologist prior to removal and replacement to make sure no nesting is occurring.

REVIEW OF MANAGEMENT PLAN

- 2.85 The management plan will be reviewed and updated accordingly based on the results of annual monitoring described above.

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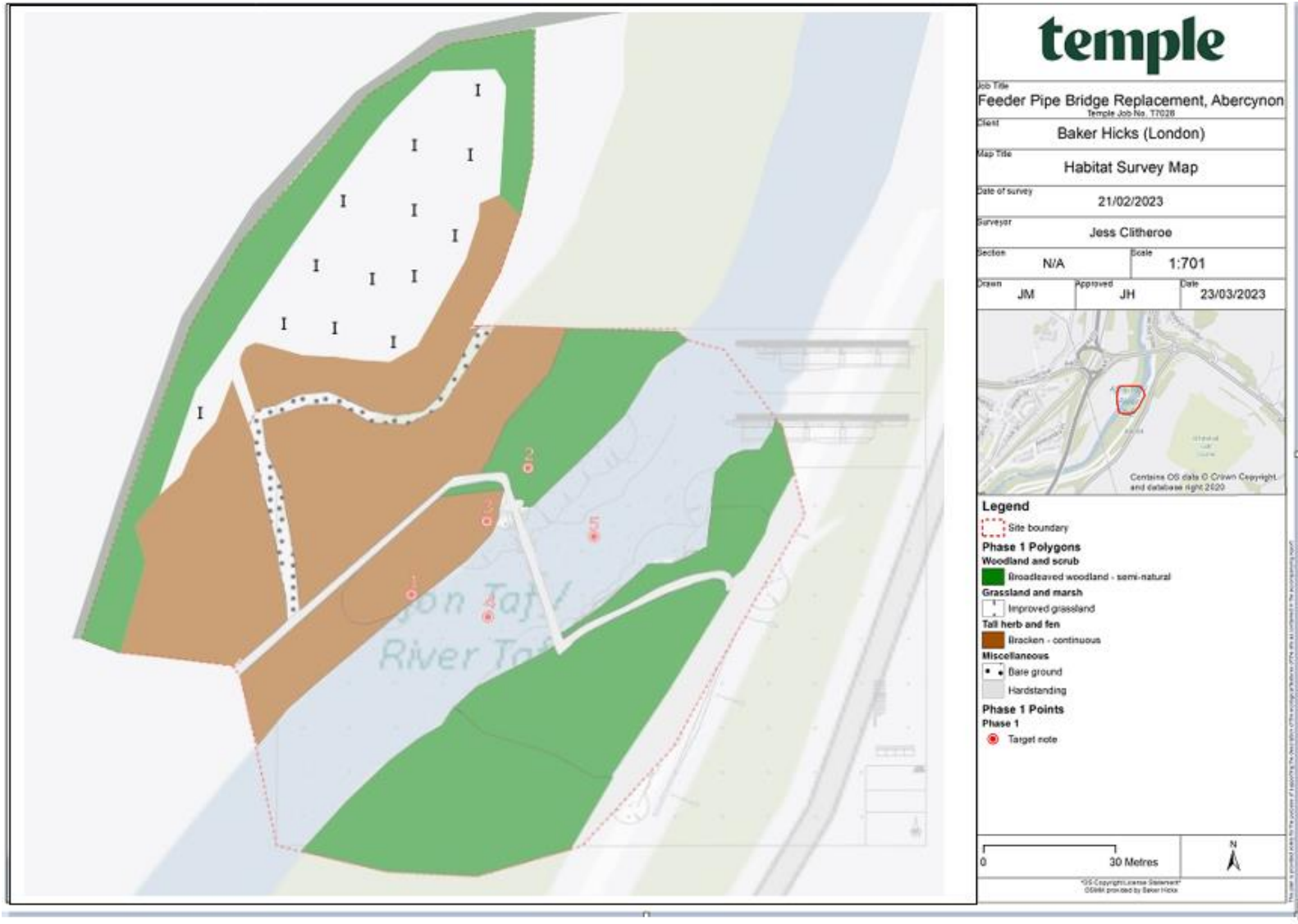
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Appendix A: Habitat Maps

Figure 1: Habitat Survey Plan – 2023 Baseline



Legend

- EXISTING TREES / VEGETATION
- EXISTING VEGETATION TO BE REMOVED (NOTE 1)
- EXISTING WOODLAND / VEGETATION WITH RPA (NOTE 1)
- TREE PROTECTION FENCE (NOTE 1)
- ANCIENT WOODLAND EXTENT (NOTE 1)
- PROPOSED TREES:
- AREA LEFT FOR NATURAL REGENERATION OF HABITAT NO PLANTING TO BE UNDERTAKEN
- AREA LEFT FOR NATURAL REGENERATION OF HABITAT: SOLID WITHIN ANCIENT WOODLAND TO BE RETAINED AND PROTECTED. NO PLANTING TO BE UNDERTAKEN
- SCRUB PLANTING
- OVERHEAD ELECTRICITY LINE EASEMENT
- SEWER LINE EASEMENT (2M WIDE (5M EITHER SIDE))
- FIBERGLASS REPLET REFUGE AREA (NOTE 2)
- BAT BOXES (NOTE 2 AND 4)

KEY DIAGRAM

SHEET 01 004

SHEET 02 005

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RIVER TAFF, FEEDER BRIDGE

LANDSCAPE PLANTING PLAN, SHEET 01

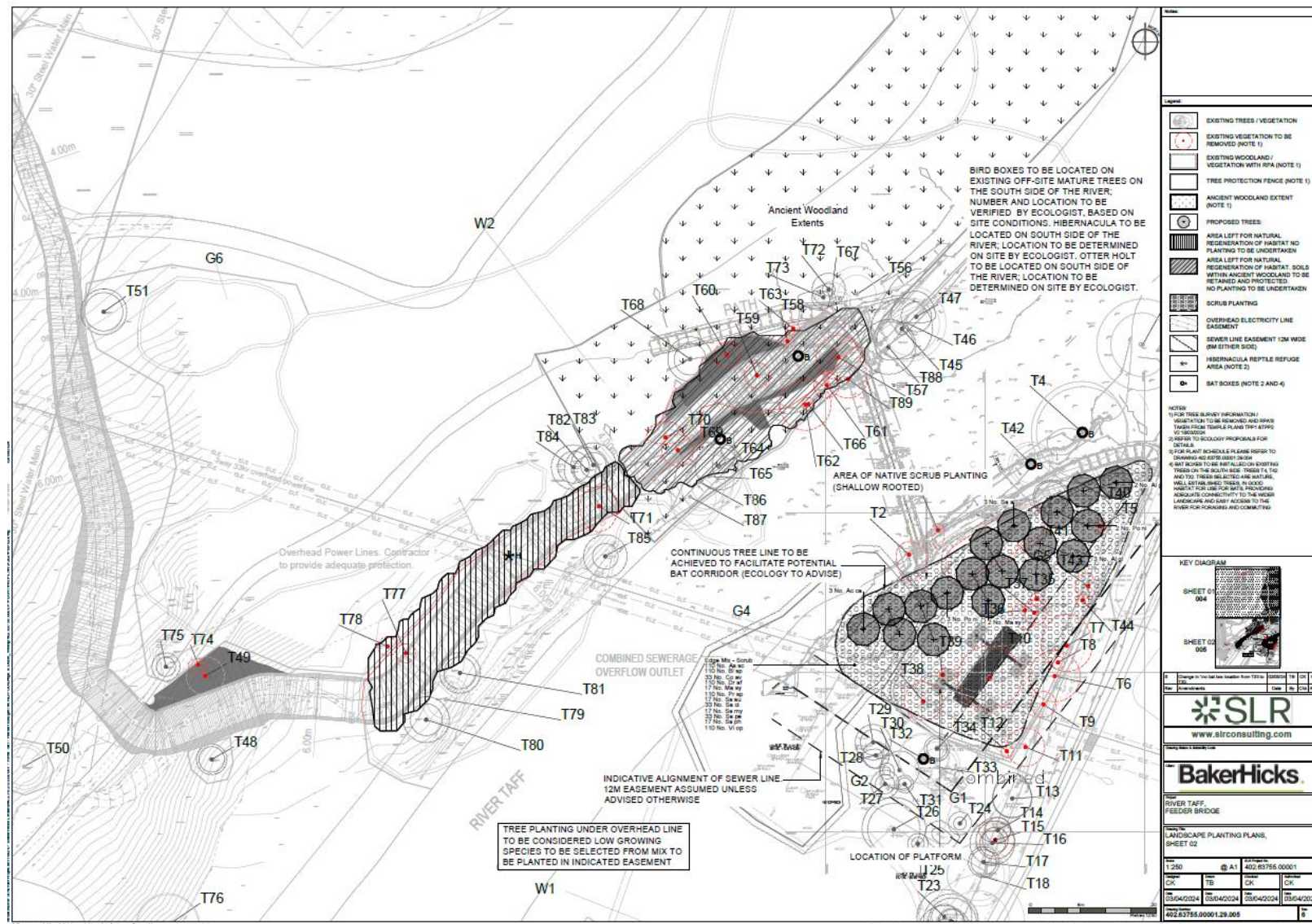
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CH T2 CH T3 CH T4 CH T5

05/04/2024 05/04/2024 05/04/2024 05/04/2024

402.63755.00001.29.004

Figure 3: Landscape Planting Plans, Southern Embankment Sheet 02



Appendix B: Management Schedule

Management Prescription	Year (s) to be undertaken	Frequency	Timing	Comments	Responsible Party
Semi-Natural Broadleaved woodland (South of the river)					
Planting woodland	0 - 1	Once	November to March	Plant when conditions are favourable for the species selected. Planting of trees is best when roots are dormant. Tree stakes and rabbit guards to be erected to protect early growth	Council appointed landscaping contractor, RCTBC.
Removal of tree stakes and rabbit guards around planted trees	0 – 5 years	Annually		Removal of tree stakes once the trees are established (girth of tree exceeds 6-8cm diameter)	RCTBC
Removal of weeds	0 – 5	4 times a year	1 st April – 1 st September	Weeds removed within 0.5m of each tree. Woodland flora allowed to grow up to 1m from wood edges.	RCTBC
Monitoring growth	1 - 5	Annually	April - September	When possible to make sure trees are still alive and healthy	RCTBC

Thinning of saplings in areas of growth to promote tree growth and ground flora	6 - 30	Annually	Winter	As required.	RCTBC
New Hedgerow					
Removal of weeds and litter	0 - 5	8 times per year		Removal of weeds and litter at the base of new hedgerows. Hedgerows should be 95% weed free	RCTBC
Assessment for need of watering	0 - 5	As required	During long, dry periods		Council appointed landscaping contractor
Replacement of dead/diseased plants	0 - 5	End of each growing season		Cutting to only take place between November and February	Council appointed landscaping contractor
Improved Grassland / Meadow Grassland					
Mow and remove arisings.	1 - 5	Regularly	Alternate between mid-July and late August/early September	Mow to a height of 40-60mm	RCTBC
Invasive Species Management					
Cutting of Japanese Knotweed	0 - 1	As required	As required	As Japanese knotweed grows during work commencement this should be cut to make sure track mats stay above	Council appointed landscaping contractor - RCTBC

				the Japanese knotweed	
Placing Track mats over Japanese knotweed	0 – 1		During work commencements		BB.
Knotweed spread prevention measures	0 – 1		During works		BB
Bird and Bat Boxes					
Secure 5 bat boxes 3-5m above ground level on trees selected by a suitably qualified ecologist	0		Before any vegetation clearance.	Current propositions are for bat boxes to be installed on T4, T42 and T33.	Council appointed landscaping contractor – RCTBC
Set up of 2 appropriate grey wagtail and dipper bird boxes in appropriate locations	1		N/A		Council appointed landscaping contractor
Bat Box Monitoring.	1 – 30	Annually	September		RCTBC
Replacement of bird and bat boxes.	2-30	As required	September	A licenced bat ecologist will be required for the removal of bat boxes.	RCTBC
Replacement of bird and bat boxes	30+	As required (monitoring should remain annual)	September	Monitoring of bird/bat boxes is still required to obtain information on bats and to make sure that the boxes do not deteriorate and become detrimental to the	RCTBC

				health of birds/bats.	
Hibernacula					
Installation of hibernacula.	1	As required	N/A		Council appointed landscaping contractor. RCTBC
Monitoring of hibernacula.	2-30	Yearly	January-December		RCTBC
Replacement of hibernacula.	2-30	As required	April-October		RCTBC
Monitoring of hibernacula	30+	Not required	N/A	Hibernacula should be well established by this point.	N/A
Artificial Holt					
Installation of holt	1	As required	During works	Holt location must be agreed between ecologist and engineers whilst on site.	Balfour Beatty
Monitoring of holt	2- 30	Yearly	Any		RCTBC
Replacement of holt	2-30	As required	Any	If holt is destroyed or damaged it must be replaced immediately	RCTBC

Appendix C: Plant Schedule

Figure 1: Proposed planting woodland mix to be planted.

Abbrev.	Botanical Name	Common Name	Girth/Dia. cm	Height cm	Root Zone	Specification	No.
Ac ca	Acer campestre	Common Maple	10-12	300-350	B	2x; SS; clear stem min. 200cm; 4 brks	3
Al gl	Alnus glutinosa	Common Alder	10-12	300-350	B	2x; SS; clear stem min. 200cm; 4 brks	5
Ma sy	Malus sylvestris	Common Crab Apple	6-8	250-300	B	2x; LS; clear stem 150-175cm; 3 brks	2
Po ni	Populus nigra	Black Poplar	10-12	300-350	B	2x; SS; clear stem 175-200cm; 4 brks	5
Sa al	Salix alba	White Willow	12-14	350-425	B	3x; HS; clear stem 175-200cm; 5 brks	3

Figure 2: Proposed scrub mix to be planted.

Abbrev.	Botanical Name	Common Name	Height cm	Root Zone	Specification	Mix %	per m ²	No.
As sc	Asplenium scolopendrium	Hart's Tongue Fern		1.5-2L	Full pot	10.00	2	110
Bl sp	Blechnum spicant	Hard Fern		1.5-2L	Full pot	10.00	2	110
Co av	Corylus avellana	Common Hazel	100-125	RB	Branched; 5 brks	10.00	2	33
Dr af	Dryopteris affinis	Golden Scale Fern		2L	Full pot	10.00	2	110
Ma sy	Malus sylvestris	Common Crab Apple	175-200	B	2x; Feathered; 5 brks	5.00	2	17
Pr sp	Prunus spinosa	Blackthorn	60-80	B	1+1; Transplant - seed raised; branched; 2 brks	10.00	2	110
Sa au	Salix aurita	Eared Willow	60-90	B	Bushy	5.00	2	17
Sa ci	Salix cinerea	Grey Willow	60-80	B	0/1; Cutting; branched; 2 brks	10.00	2	33
Sa my	Salix myrsinifolia	Dark-leaved Willow	100-125	B	0/2; Cutting	5.00	2	17
Sa pe	Salix pentandra	Bay Willow	100-125	B	0/2; Cutting	10.00	2	33
Sa ph	Salix phylicifolia	Tea-leaved Willow	100-125	B	0/2; Cutting	5.00	2	17
Vi op	Viburnum opulus	Guelder Rose	40-60	B	1+1; Transplant - seed raised; branched; 2 brks	10.00	2	110

Figure 3: Proposed native matrix mix to be planted.

Matrix Mix - Native

Abbrev.	Botanical Name	Common Name	Height cm	Root Zone	Specification	Mix %	m Ctrs
Ac ca	Acer campestre	Common Maple	40-60	B	1+1; Transplant - seed raised	10.00	0.45
Co av	Corylus avellana	Common Hazel	40-60	B	1+1; Transplant - seed raised; branched; 2 brks	15.00	0.45
Cr mo	Crataegus monogyna	Common Hawthorn	40-60	B	1+1; Transplant - seed raised	30.00	0.45
Fa sy	Fagus sylvatica	Common Beech	100-125	B	1+2; Transplant - seed raised	5.00	0.45
Il aq	Ilex aquifolium	Common Holly	30-40	2L	Bushy; 2 brks	5.00	0.45
Li vu	Ligustrum vulgare	Common Privet	40-60	B	0/1; Cutting; branched; 2 brks	5.00	0.45
Pr sp	Prunus spinosa	Blackthorn	40-60	B	1+1; Transplant - seed raised; branched; 2 brks	10.00	0.45
Ro ca	Rosa canina	Dog Rose	40-60	2L	Branched; 3 brks	5.00	0.45
Vi op	Viburnum opulus	Guelder Rose	40-60	B	1+1; Transplant - seed raised; branched; 2 brks	15.00	0.45

Figure 4: Plant Schedule Key

KEY:

B = Bare-rooted and bagged
 brk = Minimum number of breaks or shoots
 L = Container size in litres
 RB = Root-balled
 1+0 = 1 year seedling not transplanted
 1+1 = 2 year seedling transplanted after the first year
 1+2 = 3 year seedling transplanted after the first year
 0/1 = 1 year cutting not transplanted
 0/2 = 2 year cutting not transplanted
 2x = Number of times transplanted e.g. twice
 LS = Light Standard
 Std = Standard
 SS = Selected Standard
 HS = Heavy Standard

Appendix D: Annual Site Monitoring Form

Figure 1: Annual Site Monitoring Form – Example

Date	Name	Habitat/Feature	Current condition	Changes note since last annual monitoring visit	Actions to be taken
05/06/2030	Joe Smith – Countryside Ranger	Lowland meadow	Moderate – not fully established	Slight encroachment of scrub in NE corner	Continue annual grass cutting. Extra cut on tall herb vegetation at SE 43923 23398 next spring. Control scrub in NE corner in winter.
		Mixed woodland; mainly deciduous	Moderate	Most of saplings establishing, small number have failed. Age structure beginning to establish. Loss of deadwood on ground due to anti-social behaviour	Replace failed saplings. Remove a conifer in winter and place deadwood on ground in areas away from paths.
		Lowland fen	Good	Slight takeover of common bulrush over 25% of open at SE 44041 23276	Reduce common bulrush in late summer/early autumn.
		Hibernacula	All ok	None	None required.
		Bird boxes x40	38 ok	2 broken	Replace broken boxes in autumn.

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