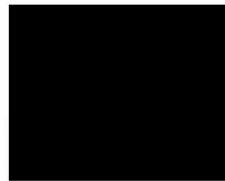


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<b>SCHEME</b>	London Power Tunnels 2
<b>CONTRACT</b>	Package 2 - Tunnels and Shafts

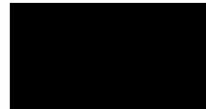
**EMP**

## ECOLOGICAL MANAGEMENT PLAN ELTHAM

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Ecology Consultancy



# London Power Tunnels, Eltham Shaft and Headhouse, Eltham

## Ecological Management Plan

### Hochtief Murphy Joint Venture

<b>Job No</b>	9509.1			
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# Executive Summary

The Ecology Consultancy was commissioned by Hochtief Murphy Joint Venture to prepare an Ecological Management Plan (EMP) for the development of a temporary construction access route from Welling Way to facilitate construction of a Shaft and Headhouse at the Eltham site (SE9 2RL), in the London Borough of Greenwich.

This EMP provides details on the baseline conditions at the site, aims and objectives of long-term management and details on the implementation, maintenance and monitoring measures to be employed.

The site was dominated by amenity grassland with areas of hedgerow, scattered trees, scrub, introduced shrub and semi-improved grassland. A pond was present in the centre of the amenity grassland and small buildings and areas of hardstanding were present throughout the site.

The previous surveys (The Ecology Consultancy 2020a and Arcadis, 2019a) identified a moderate potential for breeding birds and a low potential for reptiles and badger to be present within the site.

The development landscaping plans include the planting of new hedgerow, scattered trees and grassland. Additionally, a green roof will be installed on the head house, bird and bat boxes will be installed on suitable trees and log piles will be created within or adjacent to suitable habitat.

The overarching aims of this EMP are to create and maintain these habitats for wildlife, providing conditions suitable for regional BAP species and Species of Principal Importance, as well as creating new habitat for nesting birds, reptiles, amphibians, badgers and invertebrates.

The management of these habitats initially covers a five year period after which time the recommended routine management measures should be incorporated into a cyclic management programme, the responsibility for this will remain with the application site owner.

# 1 Introduction

## BACKGROUND

- 1.1 The Ecology Consultancy was commissioned by Hochtief Murphy Joint Venture to prepare an Ecological Management Plan (EMP) for the proposed Shaft and Headhouse within land to the rear of the Eltham Grid Sub Station, Rochester Way, Falconwood, London SE9 2RL, London Borough of Greenwich. Planning permission for the site has been granted by London Borough of Greenwich (Reference number 18/4264/F) subject to a number of conditions, including the following:

### Condition 11: Ecological Mitigation Measures

*a. All general mitigation recommendations set out within the Ecological Appraisal dated November 2018, shall be implemented in full.*

*b. Full details demonstrating compliance with these works shall be submitted to and approved in writing by the Local Planning Authority prior to the operational use of the development hereby approved.*

### Reason 11

*To increase the biodiversity of the site, to mitigate any impact from the development hereby approved and to comply with London Plan (2016) Policy 7.19 and Policy OS4 Royal Greenwich Local Plan: Core Strategy with Detailed Policies (July 2014).*

### Condition 13: Hard and Soft Landscaping

*a. Details of all hard and soft landscaping arrangements including surface treatment, means of enclosure, and replacement trees (size and species); shall be submitted to and approved in writing by, the Local Planning Authority before the development is commenced.*

*b. The implementation of the hard landscaping shall be completed before the head house is first brought into operational use. The soft landscaping shall be completed within 12 months, or by the end of the first planting season, after the completion of the London Power Tunnels II works at the site, to the satisfaction of the Local Planning Authority.*

### Reason 13

*In order to maintain the character and appearance of the area and ensure compliance with Policy DH1 of the Royal Greenwich Local Plan: Core Strategy with Detailed*

*Policies (adopted July 2014).*

- 1.2 The EMP initially covers a five year period after which time the recommended routine management measures should be incorporated into a cyclic management programme. It has been informed by the results of a previous Ecological Appraisal conducted by Arcadis in 2019 (Arcadis, 2019a) and an update Ecological Scoping Survey conducted by The Ecology Consultancy in February 2020 (The Ecology Consultancy, 2020a).

### SCOPE OF THE REPORT

- 1.3 This EMP provides detail on the baseline conditions at the site as inferred from the surveys in 2019 and October 2020, as well as setting out aims and objectives of long-term management and details on the implementation, maintenance and monitoring measures to be employed.
- 1.4 A summary of the findings from the previous surveys is provided in Section 2 of this document; management prescriptions are provided in Section 3.
- 1.5 A Maintenance Schedule is provided in Appendix 1 which covers a five year period. An Ecological Enhancement Plan is provided in Appendix 2.
- 1.6 This management plan follows recommendations for Landscape and Ecology Management Plans (LEMPs) detailed in British Standard 42020:2013 Biodiversity - Code of Practice for Biodiversity and Development (BSI, 2013).

### SITE CONTEXT AND STATUS

- 1.7 The site is approximately 0.84 hectares (ha) in size and is located adjacent to the east of the Eltham UK Power Networks substation. The site is currently occupied by the Welling and District Model Engineering Society and a large model railway. The site is bound by Falconwood railway station to the south, Eltham substation to the west, Falconwood Fields area of Metropolitan Open land to the north, and residential land to the east. The Ordnance Survey National Grid reference for the centre of the site is: TQ 447 755. The site comprises mainly amenity grassland, with areas of plantation woodland, dense scrub, scattered scrub, scattered trees, semi-improved grassland, tall ruderal vegetation, standing water, species-poor hedgerow, introduced shrub, and building and hardstanding.

### DEVELOPMENT PROPOSALS

- 1.8 The development proposals for the site, based on project background information



provided by the client (The Design and Access Statement (Fereday Pollard, 2019)) involves the clearance of several trees, and some vegetation on the site for the creation of a temporary construction access route from Welling Way, and removal of a model railway track to facilitate construction of a Shaft and Headhouse at the Eltham site. Landscape proposals include the planting of replacement trees, grassland and hedgerow, as well as the installation of a green roof, bat and bird boxes, and creation of log piles.

## BIODIVERSITY ACTION PLANS

- 1.9 Biodiversity Action Plans (BAPs) have been produced at a national, county and local level. They describe those biological resources present at a defined scale and include a framework to conserve and enhance these resources through action plans.
- 1.10 All previous UK BAP habitats and species are now referred to as Habitats and Species of Principal Importance for the Conservation of Biodiversity in England as defined by Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (HMSO, 2006), hereby referred to as Species and Habitats of Principal Importance.
- 1.11 Biodiversity Action Plans are still relevant in that they highlight local issues and identify mechanisms by which to address them with measurable targets to achieve. The London Borough of Greenwich BAP is relevant to the site.
- 1.12 Greenwich BAP species and Species/Habitats of Principal Importance that will benefit from this management plan are:

Hedgerow, which will benefit through the planting of additional native species and an appropriate management regime;

Bats which will benefit from increased foraging opportunities due to the enhancement of hedgerow, and grassland habitats and roosting opportunities due to the provision of bat boxes;

Great crested newts and reptiles if present would benefit from the enhancements to the hedgerows, and grassland habitats through improved foraging opportunities. Log piles will also provide greater refuge opportunities;

Hedgehogs which will benefit from increased foraging opportunities due to enhancement of hedgerow and grassland habitat, as well as log piles which provide greater refuge opportunities.

Black redstart which will benefit through the provision of new biodiverse green/brown roof, and increased foraging habitat.

Stag beetle which will benefit from creation of log piles and therefore increased deadwood habitat on site.

Birds, which will benefit through the provision of bird boxes within the site and through tree and hedgerow planting which will offer foraging and nesting opportunities in the long term.

## 2 Baseline Conditions

### INTRODUCTION

- 2.1 An Ecological Appraisal of the site was carried out by Arcadis in May 2019, with site visits taking place in August 2017 and April 2018. Bat surveys were conducted in June 2018 (Arcadis, 2019a). An update Ecological Scoping Survey was conducted by The Ecology Consultancy in October 2020 which found site conditions to be largely unchanged from the baseline of the Ecological Appraisal conducted by Arcadis (Arcadis, 2019a). Below is a brief summary of the survey findings.

### Habitats

- 2.2 During the surveys no plants of national, regional or local interest were found. The following habitats were described:

Amenity grassland – the majority of the site consisted of mown amenity grassland, with a model railway track running through it. Species included perennial rye grass, ribwort plantain, yarrow and dandelion.

Dense scrub - Dense bramble scrub was present at the north of the site boundary, along the northern edge of Falconwood Field. The scrub was dominated by bramble with some scattered trees.

Scattered scrub - Areas of scattered scrub were recorded along the eastern boundary of Falconwood field and to the south of the hedgerows along the northern site boundary. The scrub was dominated by bramble with small patches of hawthorn. Areas of common nettle, cow parsley and cleavers were also present adjacent the scrub.

Scattered trees – A row of scattered trees was present along the eastern boundary of Falconwood Fields, with the canopy encroaching into the site boundary. Species included mature oak, hazel and hawthorn. A number of semi-mature and mature scattered trees were present within the main site, species included ash, rowan, silver birch, apple, cherry and sycamore. A row of mature Leyland cypress was present along the eastern site boundary.

Semi-improved grassland – the majority of the temporary construction access route through Falconwood field consisted of a poor semi-improved grassland. Species included frequent cocksfoot and Yorkshire fog, with occasional broadleaved dock, ribwort plantain, dandelion and common knapweed.

Standing water - One pond was located within the centre of the site, within the area of amenity grassland. The pond was formed of several separate plastic pre-formed sections. Aquatic vegetation was limited, but water lily was present in one of the sections. A high density of ornamental fish were present within the pond. The pond had steep plastic sides surrounded by stone slabs.

Species poor hedgerow – A species-poor, intact hedgerow was present along the northern border of the main site, to the south of Falconwood Field. Other tree and shrub species present within the hedgerow included holly, yew, and oak. The ground flora included, limited areas of cow parsley, cleavers, broad-leaved dock and common nettle.

Buildings and hardstanding - Four small buildings were present on site, all of similar construction and in use for the model railway or as storage. The buildings were all a single storey high and constructed from brick and breezeblock with wooden panelling and doors. One building had a flat roof clad in bitumen roofing felt, and the other three had pitched roofs clad in corrugated plastic sheets.

Introduced shrub - Small areas of introduced shrub were present throughout the site, adjacent to the model railway. Wall cotoneaster was present growing over a model railway tunnel and red valerian and hydrangea was present in ornamental beds.

## Species

- 2.3 The site had low potential to support great crested newts and reptiles within the semi-improved grassland, scrub and hedgerow habitats on site (The Ecology Consultancy, 2020).
- 2.4 The hedgerows, scrub, introduced shrub and scattered trees had moderate potential to support common nesting bird species.
- 2.5 The hedgerows and scrub on site, and adjacent woodland and scrub habitats had low potential to support badger.
- 2.6 The site had negligible potential to support roosting bats.
- 2.7 A method statement for a precautionary method of works was produced by The Ecology Consultancy in November 2020 (The Ecology Consultancy, 2020b). This will ensure habitats and protected species are adequately protected throughout works on site.

# 3 Prescriptions for Habitat Management

## OVERVIEW

- 3.1 The development proposals include habitats to be retained and protected on site, and habitat creation to compensate for the loss of trees, hedgerows and semi-improved grassland to ensure continued provision on-site for protected species and Species of Principal Importance. The hedgerow and scattered trees along the eastern site boundary, as well as several trees within the site will be retained and protected throughout works, in line with British Standards Institution (2012) guidelines, BS 5837-2012. Ecological enhancements will also be made to the site which will be additional to the compensation requirements and aim to achieve a net gain for local biodiversity.
- 3.2 The following section provides a description of features to be managed, aims and objectives of management and prescriptions for the installation and long-term management of these features. These should be read alongside the construction mitigation and maintenance schedule (Appendix 1). Those features covered include:

tree and hedgerow planting;

grassland planting;

green/brown roof;

bat boxes;

bird boxes;

log piles.

## AIMS

- 3.3 The overarching aims of this management plan are as follows:
- create and maintain grassland, hedgerow and tree habitats for wildlife;
  - provide conditions suitable for regional and local BAP species and Species of Principal Importance; and
  - create new habitat for bats, birds, badgers, amphibians, reptiles, and invertebrates.

## TREE PLANTING AND MAINTENANCE

### Description and Evaluation

- 3.4 A total of 48 trees and one partial hedge are scheduled for removal to facilitate the development. Nine trees were recommended for removal in the Tree Survey Report (Arcadis, 2018), and a further 39 have been agreed for removal with the London Borough of Greenwich Tree Officer since the original survey took place. New trees will be planted on site to replace trees removed at a 1:1 basis and planted in areas where trees previously stood (Fereday Pollard, 2019) (see Appendix 2, Figure 1 for indicative locations). The Design and Access Statement (Fereday Pollard, 2019) proposes replacement trees based on existing tree species growing on or adjacent to the site including: Italian alder (*Alnus cordata*), downy birch (*Betula pubescens*), Norway maple (*Acer plantanoides*) and Sweet gum (*Liquidamber styraciflua*). However, where possible, native trees or trees of recognised wildlife value<sup>1</sup> should be used in the planting scheme such as oak, hornbeam, apple, field maple, hawthorn, elder, ash and cherry.
- 3.5 Trees and hedgerows scheduled to be retained should be protected from damage to their roots as set out in the Arboriculture Report (Arbeco, 2020).
- 3.6 The proposed tree planting will contribute to the existing retained corridors of habitat on the boundaries of the site. This, in combination with the proposed hedgerows and areas of wildflower lawn will create a diverse mix and structure of habitats on site.
- 3.7 The trees in combination with hedgerows and wildflower grassland, in time, will provide nesting opportunities for birds and will offer foraging opportunities and shelter for nesting birds, bats, amphibians, reptiles, badger and invertebrates.
- 3.8 All new tree planting will be in accordance with British Standard 8545: Trees: From Nursery to Independence in the Landscape – Recommendations, 2014 and all tree works must be carried out by a qualified contractor in accordance with BS3998:2010: Tree Work – Recommendations.

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<sup>1</sup> For example The Royal Horticultural Society (RHS) Perfect for Pollinators Scheme <https://www.rhs.org.uk/science/conservation-biodiversity/wildlife/encourage-wildlife-to-your-garden/plants-for-pollinators> and the joint RHS/Wildlife Trust's Gardening With Wildlife In Mind Database <http://www.joyofplants.com/wildlife/home.php>

3.9 All trees and shrubs will be sourced from suppliers who have adopted Flora Locale's Code of Practice for collectors, growers and suppliers of native flora <http://www.floralocale.org>.

### Objectives

3.10 Delivery of this habitat management has the following objectives:

to maintain the health and condition of planted trees;

provide a source of fruit and nectar for birds and invertebrates through inclusion of native flowering and fruiting species;

to ensure successful establishment and growth of trees to achieve their natural form as part of a balanced and ultimately self-sustaining planting area;

in time, to provide nesting and foraging habitat for birds and foraging habitat for bats, amphibians, reptiles, badger and invertebrates.

### Installation/management prescriptions

3.11 Those responsible for planting should be familiar with the National Plant Specification and follow relevant British Standards and Codes of Practice, including:

BS 3882:2015 Specification for topsoil;

BS 3936:1992 Nursery Stock – Specification for trees and shrubs;

BS 8545:2014 Trees: from nursery to independence in the landscape.

Recommendations;

BS 4428:1989 Code of Practice for general landscape operations (excluding hard surfaces); and

Protecting Plant Health: A Biosecurity Strategy for Great Britain<sup>2</sup>.

3.12 Prior to planting, each tree will be watered to saturation on the day of planting and the area irrigated to field capacity following planting. The area will then be irrigated to field capacity twice per week throughout the first month. The trees should then be watered

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<sup>2</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/307355/pb14168-plant-health-strategy.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/307355/pb14168-plant-health-strategy.pdf)

as required, with regular watering throughout dry periods throughout spring and summer during the first two years after planting.

- 3.13 Regular monthly checks will be made during the first two years of establishment to replace dead or diseased specimens, control weeds, and re-stake plants as necessary. Checks will be undertaken in years 3, 4, and 5. Any re-planting of dead or diseased specimens will take place between November and February.
- 3.14 Weed growth will be controlled using mechanical means, such as strimming. Chemical treatments should only be used as a last resort, and should not be used in areas accessible to the public.

## HEDGEROW PLANTING AND MANAGEMENT

### Description and Evaluation

- 3.15 Approximately 16m of species poor hedgerow will be removed as part of the development. This will be replaced following the construction phase, and the remaining existing hedge will be improved with additional planting to improve biodiversity and fill any existing gaps. Hedge species proposed include hawthorn, holly, yew, ash, and oak.
- 3.16 The native hedges will provide a dense, sheltered habitat for small birds such as dunnock and house sparrows, mammals and insects.
- 3.17 Through planting replacement hedgerows and improving existing hedges on the site, foraging and commuting habitats for wildlife will be increased and strengthened. In addition, the hedgerows will also provide connectivity to suitable offsite habitat.

### Objectives

- 3.18 Delivery of this habitat management has the following aim:
- to install approx. 16m of replacement native hedgerow;
  - to improve the diversity and structure of existing hedgerows on site;
  - to maintain the health and condition of planted hedgerow species;
  - provide a source of fruit and nectar for birds and invertebrates through inclusion of native flowering and fruiting species;
  - to promote structural diversity within the site which provides nesting and feeding opportunities for birds and opportunities for invertebrates; and,



to increase species diversity and create ecological corridors through the site.

### Installation/management prescriptions

- 3.19 Landscape contractors should be familiar with the National Plant Specification and follow relevant British Standards and Codes of Practice as listed under section 3.10.
- 3.20 Hedge planting should follow the layout shown in the Proposed Site Plan with Landscape Proposals within the Design Access Statement (Fereday Pollard, 2019), and reproduced in the Ecological Enhancement Plan (Appendix 2).
- 3.21 Saplings should be watered twice weekly in the first month after planting and then as required, with more regular watering during prolonged dry periods. Any failed planting during the first five years will be replaced.
- 3.22 Any management to the newly planted hedgerows on site will be undertaken in September – February, in order to avoid an impact on nesting birds. Growth will be cut by two thirds to encourage a bushy structure during the first five years of establishment. Once established, pruning of the hedge will take place annually in September - January.

## GRASSLAND PLANTING AND MANAGEMENT

### Description and Evaluation

- 3.23 Areas of semi-improved grassland and amenity grassland will be temporarily impacted by the proposed development. Post construction, these areas will be reinstated with species of greater biodiversity value, and seeded with a native species grassland mix (such as Emorsgate mix, EM2 Standard General Purpose Meadow Mixture, or EM3 Special General-Purpose Meadow Mixture).
- 3.24 Appropriate planting and management of these habitats will aim to promote a species-rich sward and varied structure which will provide cover within the site and offer connectivity to the wider landscape.

### Objectives

- 3.25 Delivery of this habitat management has the following objectives:

to maintain the balance between grasses and slower developing wild flowers in newly planted areas through regular management in the first year (up to four cuts in the growing season April to September) and then annual cuts to ensure establishment;

in time, to provide habitat for amphibians, reptiles, invertebrates and hedgehogs.

### Installation/management prescriptions

- 3.26 Seeding of the access track and site will take place post construction. Seed is best sown in autumn or spring but can be sown at other times of year if there is sufficient warmth and moisture. The seed must be surface sown and can be applied by machine or broadcast by hand. The seed should not be incorporated or covered, but should be firmed in with a roll, or by treading to give good soil to seed contact.
- 3.27 If the seeding does not take and there are areas of bare earth, remedial sowing of these areas will be undertaken as required.
- 3.28 Regular cuts are required to remove any excessive grass growth and scrub cover and for the removal of injurious weeds. No chemical input unless necessary and then only spot use of non-persistent herbicide.
- 3.29 The grassland will be managed by annual cutting to a height no lower than 50mm in late summer (mid-July to late August) with cuttings removed from the grassland after 24 – 48 hours to allow seed to fall.
- 3.30 The species composition of the grassland will be monitored in the first twelve months and if an increase of cover from pernicious herbs such as common nettle and broad-leaved dock is noted, then control measures may be necessary.

### GREEN/BROWN ROOF

#### Description and Evaluation

- 3.31 A brown wildflower roof of approximately 288m<sup>2</sup> will be installed on the roof of the head house according to the Access Statement (Fereday Pollard, 2019). The development shall be constructed in accordance with the GRO Green Roof Code 2014.

#### Objectives

- 3.32 Delivery of this habitat management has the following aim:  
to provide habitat for invertebrates and birds.

### Installation/management prescriptions

- 3.33 Installation and maintenance should follow the roof contractor's specifications.

- 3.34 Maintenance should involve at least one annual visit (usually in autumn) to ensure that all drainage outlets and shingle perimeters are vegetation free. Unwanted vegetation including *Conyza* species, *Buddleia* and other woody species should be pulled and removed from site. Any eroded substrate should be replaced and re-seeded.

## **BIRD AND BAT BOXES**

### **Description and Evaluation**

- 3.35 Bird and bat boxes will be installed on suitable trees around the boundaries of the site to provide additional bat roosting and bird breeding opportunities. The bird boxes provided will be suitable for small nesting birds, including Species of Principal Importance such as song thrush, dunnock, and bullfinch. Approximately four bat boxes and five bird boxes will be installed across the site (see Appendix 2, Figure 1 for indicative locations).
- 3.36 Woodcrete bird and bat boxes, such as those made by Schwegler, should be used as they are long lasting compared to wooden boxes and insulate the occupants from extremes of temperature and condensation. This will enhance the site for birds and bats through the increased nesting and roosting opportunities for these species.

### **Objectives**

- 3.37 Delivery of this habitat management has the following aim:

to provide additional roosting and breeding opportunities for bats and birds on site.

### **Installation/Management Prescriptions**

- 3.38 Bat boxes should be located on semi-mature or mature trees on site and positioned between 3m to 5m above ground level facing southeast – southwest, in a location that will not be lit by any artificial lighting. The bat boxes will be installed upon completion of the landscaping works.
- 3.39 Bird boxes should be positioned at least 2m above ground level and should be securely fastened to existing and newly planted trees on site. These will be installed upon completion of the tree planting on site.
- 3.40 Bird boxes will be cleaned out between September to February to avoid the main bird nesting season. This is to remove parasites and prevent them from re-infesting young the following year. Chemicals should not be used, only boiling water. Bat boxes with an entrance slit along the bottom require little maintenance as the accumulated waste will

drop out of the boxes. Bat boxes should not be relocated or disturbed unless first inspected by a licence bat worker.

## LOG PILES

### Description and Evaluation

- 3.41 A minimum of four log piles will be created within the hedgerow and scrub habitats on the boundaries of the site, or in grassland margins adjacent to these habitats. Log piles should include various sized logs and brash and should each be at least 1m x 2m in total. Material cut from site could be used for this purpose (see Appendix 2, Figure 1 for indicative locations).

### Objectives

- 3.42 Delivery of this habitat management has the following aim:
- to provide additional refuge habitat for amphibians and reptiles, while also providing suitable habitat for stag beetles and hedgehog.

### Installation/management prescriptions

- 3.43 The log piles will be created within areas of suitable habitat within the hedgerow, scrub and grassland habitats on the eastern boundary of the site, away from disturbance and construction works.
- 3.44 The log piles will be created as part of the post-construction soft landscaping and will be checked annually outside of the reptile and amphibian hibernation period, to ensure that they are still fit for purpose. The structures will be maintained by replenishing the logs and brash as required to replace, though not remove, rotten or degraded material.

## MONITORING SCHEDULE

- 3.45 It is important to monitor the success of long-term management to determine whether the objectives are being met and so that prescriptions can be reactive to changes in the natural environment and new ecological baseline information that is collected.
- 3.46 The site will be visited in years three and five by a suitably qualified ecologist to undertake a monitoring walkover. The purpose of the walkover will be to assess the condition of the retained and created habitats against the target objectives. Following the walkover inspection, a monitoring report will be produced detailing any remediation actions or interventions determined necessary to meet the relevant objectives. These actions will be passed onto the appointed maintenance contractor and incorporated into the management of the site with immediate effect.

3.47 Specific monitoring will include a botanical survey of the grassland habitat in year five, following implementation, to assess the species diversity of the grassland.

#### REVIEW OF MANAGEMENT PLAN

3.48 This management plan will be reviewed and updated accordingly based on the results of the monitoring described above.

#### FUNDING AND RESPONSIBILITY

3.49 It is the responsibility of the application site owner to fund the long-term management prescriptions of the site.

3.50 It is the responsibility of the relevant appointed contractors to ensure they have read this management plan and that they follow the management prescriptions within. Any diversions from these prescriptions should first be agreed with a suitably qualified ecologist.

3.51 Appointed landscaping consultants will have experience in habitat creation for wildlife and maintenance contractors will have experience in managing wildlife habitats.

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## Appendix 1: Construction Mitigation & 5 Year Maintenance and Monitoring Schedule

Table 1: Construction mitigation and five year maintenance and monitoring schedule

OPTIMAL PERIOD FOR TASK / OR TASK RELEVANT DURING THIS TIME       ALTERNATIVE PERIOD FOR TASK

Reference in Report	Management Prescription	Jan - Feb	Mar-Aug	Sep-Oct	Nov-Dec	YEAR					Implemented by
						1	2	3	4	5	
New tree planting	New trees will be planted during October to April		Apr	Oct		Post construction					Ground maintenance personnel (contractor)
	Water newly planted trees on day or and two, and then twice weekly for first month, then as required, especially during dry periods throughout spring and summer										Ground maintenance personnel (contractor)
	Monitor tree health monthly for first two years, and then annually in years 3, and 5. Remove aggressive weeds from trunk base leaving a strip at least wide.										Ground maintenance personnel (contractor)
	Replacement planting of dead/damaged specimens		<input type="checkbox"/>	<input type="checkbox"/>							Ground maintenance personnel (contractor)
Hedgerows	New hedge planting during October April		Apr	Oct		Post construction					Ground maintenance personnel (contractor)
	Hedge saplings should be watered twice weekly in the first month after planting then as required					as required					Ground maintenance personnel (contractor)
	Management of new hedgerows annually (Sept-Feb only). Growth cut by two thirds in first five years of establishment.										Ground maintenance personnel (contractor)
	Management of existing hedgerow (Sep-Feb)										Ground maintenance personnel (contractor)



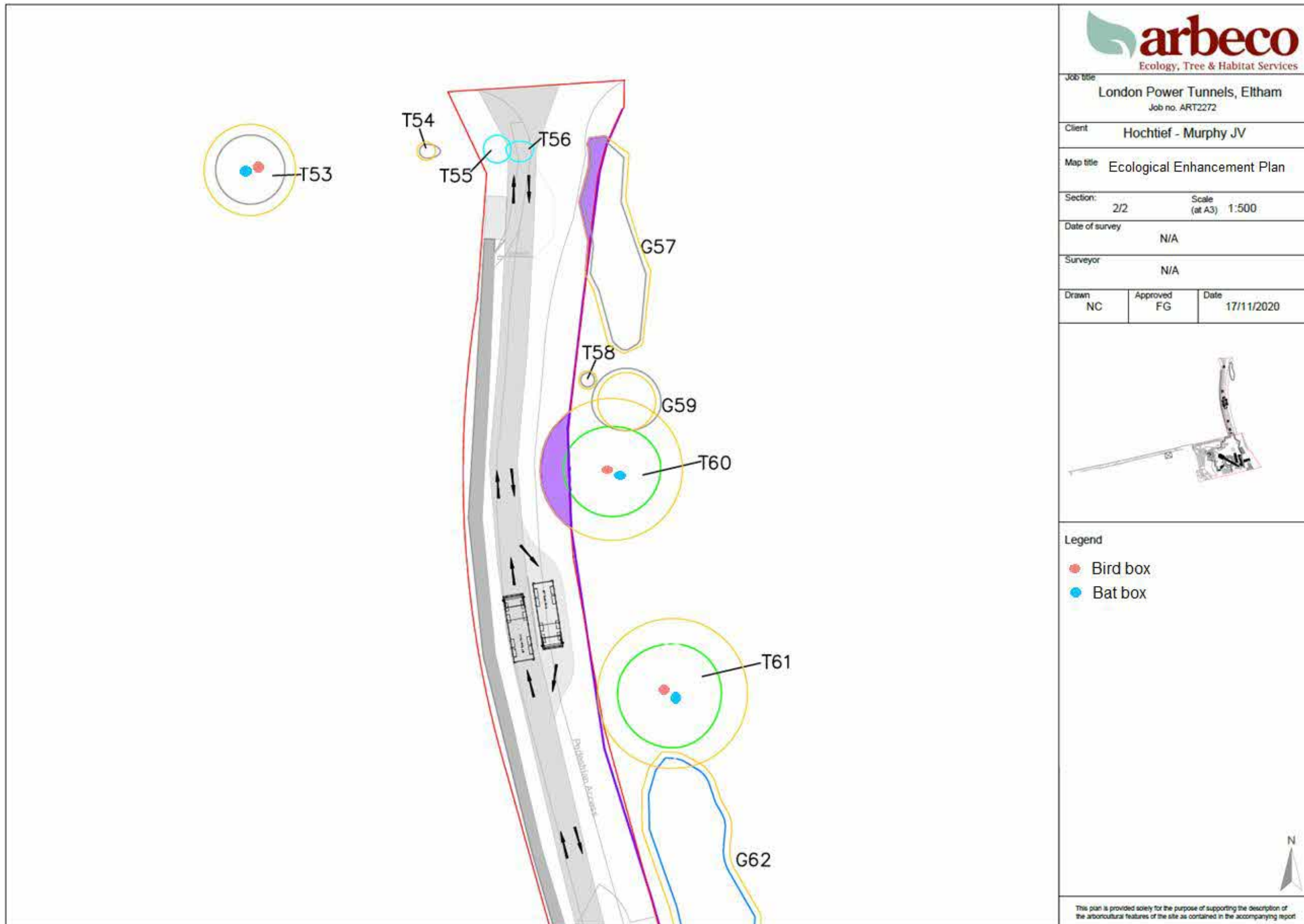
Reference in Report	Management Prescription	Jan - Feb	Mar- Aug	Sep- Oct	Nov- Dec	YEAR					Implemented by
						1	2	3	4	5	
New Grassland Planting	Re-seeding.		<input type="checkbox"/>			Post construction					Ground maintenance personnel (contractor)
	Remedial sowing of bare ground										Ground maintenance personnel (contractor)
	Annual cutting to no lower than 50mm in late summer (mid-July to late August)			<input type="checkbox"/>							Ground maintenance personnel (contractor)
	Removal of extensive areas of scrub weed, and injurious species										Ground maintenance personnel (contractor)
Green roof	Maintenance should involve at least one annual visit (usually in autumn) to ensure that all drainage outlets and shingle perimeters are vegetation free.										Ground maintenance personnel (contractor)
Bat and Bird boxes	Bird and bat box will be checked in years 2 and 4 to determine whether it has been used and to highlight if the location of the box requires any alteration	During or immediately after construction						■			Ground maintenance personnel (contractor), or ecologist for bat box.
Log piles	Log piles to be monitored annually and replenished as required	During or immediately after construction									Ground maintenance personnel (contractor)
Monitoring	Ecologist to assess the condition of the retained and created habitats against the target objectives			<input type="checkbox"/>							Suitably qualified ecologist

## Appendix 2: Ecological Enhancement Plan

Figure 1a – Indicative locations for Ecological Enhancement Plan



Figure 1b – Indicative locations for Ecological Enhancement Plan





## Ecology Consultancy

The Ecology Consultancy is part of the Temple Group.

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