



CLIENT: LONDON UNDERGROUND LIMITED

CONTRACT REF: TLL 7917

NORTHERN LINE EXTENSION

MAIN WORKS CONTRACT

ECOLOGY MANAGEMENT PLAN



Issue and Revision Control

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Revision History			
Rev No	Date	Summary of Changes	Section Number
1.	04.12.2014	Review and approval.	All
2.	11.12.2014	Updated, review and approval.	All
3.	23.01.2015	Updated from review comments	All

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1.0 Introduction

This Ecology Management Plan applies the commitments within the Northern Line Extension (NLE) Code of Construction Practice (CoCP) Part A and associated contractual environmental requirements regarding the management of ecology for the NLE works. Details of trees to be removed and those to be protected are covered in the site specific CoCP Part B documents. To ensure that this document remains relevant, adequate and effective as the works progress, the Ecology Management Plan will be reviewed and updated as necessary:

- following any change that has a significant impact on environmental requirements;
- as instructed by the Project Manager; and
- at least every 6 months.

Key ecological aspects and impacts are included in the site specific Environmental Aspects and Impacts Register (AIR) for each of the NLE main work sites. The AIR provides a concise description of the key environmental aspects associated with the site as well as the required mitigation measures to be implemented, and should also be read and implemented in conjunction with this plan.

2.0 Aims and Objectives

The aims of this document are :

- To ensure procedures are implemented to control and limit the disturbance of areas of nature conservation interest and protected species and habitats.
- To provide a document for consultation with the relevant local authorities, Natural England and the Environment Agency as appropriate.
- To produce a site specific reinstatement plan, as required for consultation with the local authorities. (This plan will be included in subsequent revisions of this document, once the landscape design has been completed).

3.0 Legislative Requirements

Under European and UK legislation, certain habitats and species are protected. Failure to comply with legislation could lead to the risk of negative ecological impacts, prosecution and/or severe financial penalties. Breach of environmental legislation could also result in bad publicity and disruption of the project program. This plan aims to ensure compliance with contractual requirements, as well as the following legislation:

- Town and Country Planning Act 1990
- Wildlife and Countryside Act 1981 as amended
- The Conservation of Habitats and Species Regulations 2010 as amended
- Protection of Badgers Act 1992
- Wild Mammals (Protection) Act 1996

- Abandonment of Animals Act 1960
- Salmon and Freshwater Fisheries Act 1975
- Control of Pesticides Regulations 1986
- Environmental Protection Act 1990
- Control of Substances Hazardous to Health Regulations 1994

The management of ecological consents is covered under the Consents Management Plan.

4.0 Description of the sites

The surface worksites associated with the construction of the NLE are located at Battersea, Nine Elms, Kennington Park and Kennington Green.

Battersea Station worksite is located within the south western section of Battersea Power Station (BPS) development, within the London Borough of Wandsworth. Where the worksite abuts Battersea Park Road, Battersea Park Road is at a higher level than the site. The site is bounded to the west by Network Rail, to the north by Battersea Power Station and to the east by the Battersea Power Station Development Company;

Nine Elms Station worksite including part of the Covent Garden Market Authority (CGMA) is located on the land to the west of A3036 Wandsworth Road and north of its junction with Pascal Street, within the London Borough of Lambeth. The worksite includes the north footway of Pascal Street. The worksite is bounded to the north by a Sainsbury's worksite and to the west by land owned by Covent Garden Market within the London Borough of Wandsworth. The demolition of the Banham building on the west end of the worksite, the CGMA office, boiler house, including the chimney and underground fuel tanks and the relocation of two substations are necessary to release the full area of the worksite.

Kennington Green worksite is located at Kennington Green within the London Borough of Lambeth. The triangular site is bounded on all three sides by Kennington Road, the eastern boundary being the main route of the road. The worksite includes footways and parking bays. It is necessary to carry out some demolition to release the full worksite. There is a local satellite worksite (hereafter referred to as Montford Place) to the west of Kennington Green adjacent to the Beefeater Gin Distillery and this is accessed via a narrow road to the west of Kennington Green. The area although not containing any permanent works for NLE is very close to the Kennington Green shaft. FLO has taken early occupation of the area and developed it for 'satellite' temporary offices and storage.

Kennington Park worksite is located in the north east corner of Kennington Park, south of Kennington Park Place west of its junction with St Agnes Place, within the London Borough of Lambeth. It is necessary to demolish Kennington Park Lodge to release the full worksite.

Two shafts of approx. 25m deep will be sunk at Kennington Green and Kennington Park respectively. These shafts will be used to remove the Tunnel Boring Machine's (TBM),

service the Sprayed Concrete Lining (SCL) running tunnels up to the step plate junction, build the step plate junction and build the four cross passages at Kennington Station. The current proposal to build the step plate junction includes for two SCL gallery tunnels but this method is currently being reviewed.

5.0 Current Site Conditions

This plan has been prepared based on ecological information collected by the Environmental Statement (ES) and supported by site visits. Ferrovial Agroman Laing O'Rourke Joint Venture (FLO) appointed an ecologist to undertake pre-construction ecological site walkover surveys, which were completed across all four worksites in November 2014. The surveys identified that there are no additional ecological mitigation measures required other than those detailed in Section 9.

6.0 Ecology and Nature Conservation Status of the Sites

Battersea

The Battersea station site lies within the Battersea Power Station (BPS), Site of Borough Importance for Nature Conservation (SBINC or SBI) (Grade 1 Importance) and the River Thames & Tidal Tributaries Site of Metropolitan Importance for Nature Conservation (SMINC). The site comprises a mosaic of semi natural (grassland, scrub and trees) and man-made (buildings and hard standing) habitats and is situated adjacent to the River Thames.

Kennington Green

The Kennington Green worksite is an area of amenity grassland, with scattered mature trees. The habitat types at Kennington Green are 5 scattered trees on the grassland and 6 within the pavement (species include cherry *Prunus cerasus*, London plane *Platanus x hispanica*, black acacia *Acacia melanoxylon* and Ginko *Ginkgo biloba*), and an area of short mown grassland (comprising perennial rye grass *Lolium perenne* and common forbs).

Kennington Park

Kennington Park lies within Kennington Park Site of Local Importance for Nature Conservation (SLINC). The Kennington Park worksite is an area of amenity grassland, with scattered mature trees. The habitat types at Kennington Park include London plane, oak *Quercus sp.*, silver birch *Betula pendula* and ash *Fraxinus excelsior* and an area of short mown grassland comprising perennial rye grass and common forbs. Also within the worksite is Kennington Park Lodge which is a building with mature garden surrounding which contains a number of artificial bee hives.

Nine Elms

The Nine Elms worksite is located in an area which includes no designated sites of conservation or ecological importance.

7.0 Timings of ecological works

This Ecology Management Plan is implemented at the outset of development and is adhered to until completion of all construction works as necessary.

Timings for sensitive works with regards to protected and noteworthy species that may be present on site during the construction phase is shown in the below table:

Ecological constraints	Timeframe	Works
Bats	October – March	Hibernation period.
	April, September	Sub-optimal survey period.
	May - August	Optimal survey period.
Breeding birds	1 st March - 31 st July	Main bird nesting season.
Common mammals: red fox	Late January – April	Breeding season.
Fish	March and October	Migration and spawning seasons

8.0 Further ecological surveys

8.1 Nine Elms Station

In line with recommendations in the Environment Statement and best practice a pre-demolition survey prior to the works commencing will be undertaken of the substation at Nine Elms Station site. If a roost is identified during the survey, a European Protected Species Mitigation (EPSM) Licence issued by Natural England will be obtained prior to works commencing.

8.2 All other sites

Following the updated ecological site walkover and with reference to the ES, no further ecological surveys are recommended at Battersea, Kennington Green, Kennington Park and Montford Place Worksites.

However the need for any river bed leveling works will be established following further bathometric surveys, assessing the adequacy of jetty and camp sheds,. Any surveys that are required will be timed to avoid conflict with fish migration.

9.0 Mitigation measures

This section details the general requirements that will be implemented prior to construction and throughout the project.

9.1 Start on site

Prior to works commencing on site, FLO's Ecologist has already undertaken surveys to check sites for nesting birds, protected species, invasive species, trees and any other ecological feature which may require mitigation. This was completed in November 2014 for all four worksites. No other mitigation measures in addition to the ones covered in section 9.2-9.4 is required upon starting on site.

9.2 Breeding birds

The Battersea, Kennington Green and Kennington Park worksites have vegetation and buildings with the potential to support common breeding birds. All vegetation clearance and demolition is currently scheduled to be undertaken outside the bird nesting season (typically taken as 1st March - 31st July inclusive).

If any change to the work programme occurs and vegetation clearance is required between the months of March and July a search for any nesting birds prior to vegetation clearance/demolition is to be undertaken by an experienced ecologist. Checks will be carried out no earlier than 48 hours prior to clearance/demolition taking place.

If any nesting birds are recorded on site at any stage during the works the FLO Environment Manager will be informed immediately and appropriate mitigation measures will be put in place.

9.3 Common mammals

Although common mammals such as red fox *Vulpes vulpes* and European hedgehog *Erinaceus europaeus* may not receive the level of protection awarded to protected species, all wild animals are protected against intentional acts of cruelty under Wild Mammals (Protection) Act 1996. To avoid possible contravention, due care and attention is taken when carrying out construction works (for example, operations near burrows).

9.4 Aquatic

At Battersea, the river bed levelling (if required) and fender installation (piling) activities have the potential to interfere with the migratory movement of fish within the River Thames. Potential impacts on fish would be most significant between March and October due to migration and stage of development for some species. Although any impacts would be temporary, as the potential for disturbance would cease once the work has stopped and the sediments have settled. Should in channel activities be required FLO will consult with the appropriate authorities such the Port of London Authority, Marine Management Organization and Environment Agency. FLO has scheduled the construction programme so that in-channel activities are timed to avoid periods of fish migration and scheduled to occur between the months of November and February. Furthermore FLO will also use sensitive piling methods - vibration piling (as opposed to impact piling), to reduce the effect of increased noise and vibration on fish.

10.0 Lighting

As night working is required as part of the construction process, all light spill onto the adjacent habitats is limited in order to reduce any impact on biodiversity. Mitigation measures include, but not limited to, the use of sensitive lighting to ensure that any adjacent commuting routes and foraging habitat for bats are not disturbed or severed; the height of columns is minimised and lights, where required, fitted with hoods and directed away from adjacent semi-natural habitats; and low-pressure sodium lamps are selected over high-pressure sodium or mercury lamps where appropriate.

11.0 Unexpected ecological discoveries

While no additional protected species have been recorded at any of the worksites, in the unlikely event that any other protected species such as reptiles or great crested newts are found at any point during construction works, those works will be halted immediately and the FLO Site Manager, FLO Environmental Advisor and FLO Environmental Manager immediately contacted

The FLO Environment Manger will liaise as necessary with the FLO ecologist to establish appropriate on-site mitigation measures and any consent requirements. The measures will be discussed and agreed (prior to implementation) as necessary with the appropriate bodies. Examples of unanticipated discoveries may include the following;

- Presence of nesting birds (including ground nesting birds);
- Wildlife trapped on site e.g. foxes & waterfowl;
- Roosting bats;
- Invasive species e.g. Japanese Knotweed.

12.0 Roles and Responsibilities

Specific duties for site staff in relation to ecological management are listed below:

Role	Responsibility
Project Manager	<ul style="list-style-type: none"> • Overall responsibility for implementation of this plan. • Notify LU of any unexpected ecological discoveries. • Assess training needs along with Environmental Manager. • Review roles and responsibilities.
Environmental Manager/ Advisor	<ul style="list-style-type: none"> • Carry out weekly checks/inspections. • Approve ecological sections of method statements and risk assessments. • Act as main point of contact for ecologist and site teams with respect to ecological issues.

Ecologist	<ul style="list-style-type: none"> • Advise and supervise any works that have the potential to have an ecological impact. • Survey areas prior to commencement of works and annually during the nesting season. • Produce and implement a management strategy for the identified ecological issues on site. • Produce a management strategy in the event that an unexpected ecological discovery is made.
Site Manager	<ul style="list-style-type: none"> • Integrate this plan into all site activities. • Ensure all works are carried out in line with consents. • Ensure all personnel are fully trained on this plan during induction and receive regular toolbox talks. • Implement the response procedure in the event of an environmental incident. • Inform the Environmental Manager of any ecological issues or unexpected discoveries on site.
Consents Manager	<ul style="list-style-type: none"> • Manage the obtaining of any ecological consents needed.

13.0 Training

All site personnel will be made aware of the ecological issues covered in this plan during the site induction. Regular toolbox talks will also be given to all on site personnel regarding all site specific aspects of ecology, as well as the control measures in place and the procedures to follow if an unanticipated discovery is made. All training will be logged.

Method statements and risk assessments will also be written and briefed to all site personnel before any works will be carried out on site. Integrated into these documents will be specific control and risk mitigation methods relating to the ecological issues detailed in this document.

14.0 Records and Monitoring

FLO project staff will monitor site activities by undertaking inspections on a weekly basis as a minimum. Inspections will be undertaken by the site Environmental Advisor to determine whether there is compliance with the environmental requirements as set out in the method statements and Environmental Procedures, ensuring legal and contractual conformity.

In addition, the Environmental Manager will undertake monthly environmental inspections to ensure overall compliance and to address any key issues. These inspections are recorded on standard forms including any actions and observations, which are reviewed by the NLE Project and Environment Managers.

Environment records are maintained by the FLO Environment Manager and reporting on environmental issues is undertaken on a monthly basis.

15.0 Review

This document will be reviewed and updated, to ensure that it remains current and reflects the status of the Works. The reviews will be carried out:

- Following any material changes to the Works or site that has an impact on compliance;
- As instructed by the LU Project Manager; and
- At least every 6 months.