

Transport and Works Act 1992

London Underground (Northern Line Extension) Order

Environmental statement

Volume IId: Appendices J, K, L, N and O

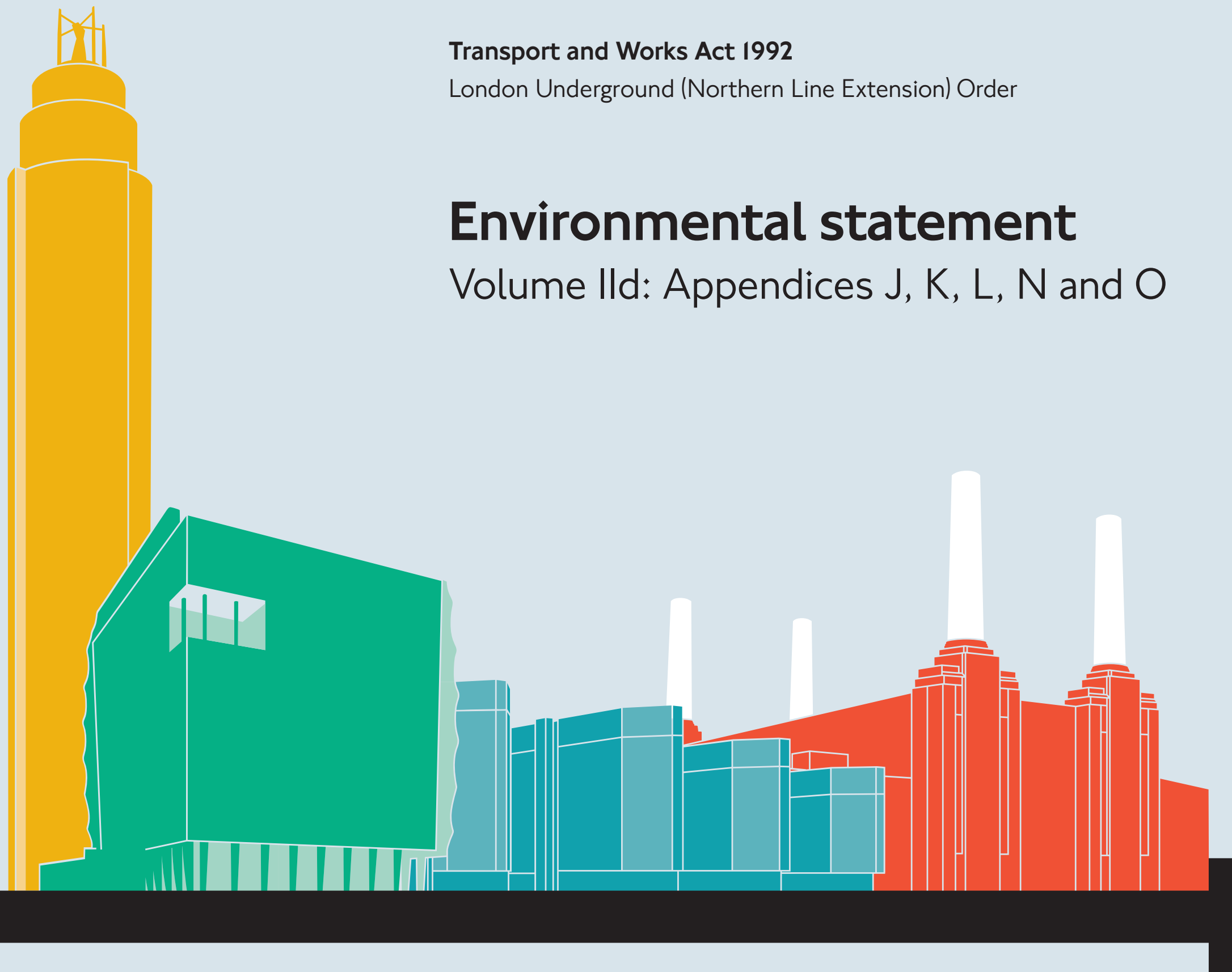


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Environmental Statement

Volume II



Harmsworth Street
Grouting Shaft

Phase 1 Report

October 2012

46370144

Prepared for:
Transport for London

UNITED
KINGDOM &
IRELAND



REVISION RECORD

| Rev | Date | Details | Prepared by | Reviewed by | Approved by |
|-------|----------|------------------------|---------------------------------------|---|-----------------------------------|
| Final | 04.10.12 | Phase 1 Ecology Report | Laura Cobden Graduate Ecologist | Rachel Holmes Principal Environmental Consultant | Martin Brit Technical Director |
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URS Infrastructure & Environment UK Limited ("URS") has prepared this Report for the sole use of Transport for London ("Client") in accordance with the Agreement under which our services were performed (**proposal dated 20th August 2012**). No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by URS. This Report is confidential and may not be disclosed by the Client nor relied upon by any other party without the prior and express written agreement of URS.

The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by URS has not been independently verified by URS, unless otherwise stated in the Report.

The methodology adopted and the sources of information used by URS in providing its services are outlined in this Report. The work described in this Report was undertaken between **3rd October 2012** and is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this Report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

URS disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to URS' attention after the date of the Report.

Certain statements made in the Report that are not historical facts may constitute estimates, projections or other forward-looking statements and even though they are based on reasonable assumptions as of the date of the Report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. URS specifically does not guarantee or warrant any estimate or projections contained in this Report.

Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.

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1. INTRODUCTION

1.1 Background

This Ecological Appraisal has been prepared by URS Infrastructure & Environment UK Limited (URS) on behalf of TFL (the Applicant) in support of a Transport and Works Act (TWA) application for the Northern Line Extension, and this report describes the ecological condition at Harmsworth Street grouting shaft Site and associated head house, hereafter referred to as the 'Site'. The Site is located in Southwark, London and centred on Ordnance Survey (OS) grid reference TQ 315 780.

1.2 Proposed Development

The Harmsworth Street temporary grouting shaft is located at the junction of Harmsworth Street and De Laune Street in the Borough of Southwark. It is comprised entirely of hardstanding (Figure 2).

1.3 Scope of Work

URS was appointed to undertake a desk study and an extended Phase 1 habitat survey for the Site, the findings of which are presented in this report. The report includes an assessment of the potential for the site to support protected and notable species, and should be read in conjunction with Chapter 14: Ecology of Environmental Statement Volume I.

1.4 Relevant Local Policy

1.4.1 UK Biodiversity Action Plan (BAP)

The UK BAP reviews the status of species and habitats on a national scale (Ref. 1). It sets out targets for a number of Priority Species and Habitats as well as for broad habitat types. The revised UK List of Priority Species and Habitats was published online in August 2007 and has been formally adopted. The list contains 1,150 species and 65 habitats.

1.4.2 UK Post 2010 Biodiversity Framework

This document was produced in response to a change in strategic thinking following the publication of the Convention of Biological Diversity's Strategic Plan for Biodiversity 2011–2020 (Ref. 2) and its 20 'Aichi targets' and the launch of the new EU Biodiversity Strategy (Ref. 3) in May 2011.

It set a broad enabling structure for action across the UK between now and 2020, including a shared vision and priorities for UK-scale activities to help deliver the Aichi targets and the EU Biodiversity Strategy. A major commitment by Parties to the Convention of Biological Diversity is to produce a National Biodiversity Strategy and/or Action Plan (NBSAP).

1.4.3 London BAP

The London BAP includes 214 Species Action Plans (SAPs), including those for bats and house sparrow (Ref. 4). Peregrine falcon and black redstart *Falco peregrinus* and black redstart *Phoenicurus ochrurus* are also identified as an important species in London.

The tidal River Thames, wasteland and built structures are identified as an important habitat within London.

2 METHODOLOGY

2.1 Desk Study

A desk study was undertaken in August 2010 by URS. The desk study consisted of an ecological data search for information on statutory and non-statutory sites; protected/notable species records; and habitat or open space information held by the Geographic Information for Greater London (GiGL). The GiGL search area included the Site and the surrounding land within a 2 kilometre (km) radius. Only records of protected and notable species dated from within the last 10 years were considered in this report. Records of designated sites within the search area were verified through a review of relevant information on the MAGIC website (Ref. 5).

2.2 Extended Phase 1 Habitat Survey

An extended Phase 1 habitat survey of the Site was undertaken on 3rd October 2012. The survey followed the Joint Nature Conservation Committee (JNCC) Phase 1 survey guidelines (Ref. 6). The habitats on and adjacent to the Site were classified according to the Phase 1 habitat survey methodology and recorded on a scale map. The survey was 'extended' to record the presence or the potential of the Site to support protected and notable species.

The survey also included a search for invasive species listed on Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA) (Ref. 7), such as Japanese knotweed *Fallopia japonica*.

3 RESULTS

3.1 Desk Study

Statutory and non-statutory sites relevant to the Site are described below. The locations of these sites are presented on Figure 1. The Site is referenced as 3 on Figure 1.

3.1.1 Statutory Sites

There are no known statutory sites located within 2km of the Site.

3.1.2 Non Statutory Sites

There are up to 19 SINC designations and no London Wildlife Trust Reserves situated within 2km of the Site. Non-statutory designations over 1km from the Site are not described below, as these are considered to be too far from the Site to potentially be impacted by the proposed development..

Sites of Borough Importance for Nature Conservation (SBINC)

Harleyford Road Community Garden SBINC is a community garden that supports some wildlife. It is located 0.9km to the southwest of the Site. See LaBII08 on Figure 1.

Walworth Garden Farm SBINC is a horticultural city farm with a natural area. It is within 0.5km to the northeast of the Site. See SoBII15 on Figure 1.

Sites of Local Importance for Nature Conservation (SLINC)

Surrey Gardens is a SLINC located 0.4km to the east of the Site. It is a small park open to the public with an area of wildflowers. See SoL28 on Figure 1.

Vauxhall City Farm is a thriving city farm that provides opportunities for local people. It is located 0.9km to the west of the Site. See LaL05 on Figure 1.

Archbishop Summer Nature Garden contains a pond and scattered trees with some murals created by children. It is located 0.8km to the north of the Site. See LaL10 on Figure 1.

Kennington Park is located 10m to the south of the Site. It contains mature and semi-mature trees and is accessible to the public. See LaL14 on Figure 1.

3.1.3 Protected and Notable Species Records

GiGL returned records of a large number of specially protected and notable bird species within 2km radius. These include a number of birds associated with the River Thames such as kingfisher *Alcedo atthis*, common tern *Sterna hirundo* and herring gull *Larus argentatus*. The Site is located within the black redstart Known Key Area.

3.2 **Extended Phase 1 Habitat Survey**

3.2.1 Habitats and Flora

The only Phase 1 habitat type that was recorded within the Site is listed below, in addition to its associated alphanumeric reference code, as detailed in the JNCC Phase 1 survey guidelines:

- Hardstanding (J3. 6).

3.2.2 Hardstanding

The Site is predominantly hardstanding comprising roads and pavements (Figure 2). This habitat provides no opportunities for wildlife.

4 **POTENTIAL FOR PROTECTED SPECIES**

The site comprises hardstanding which provides no opportunities for wildlife. There are no trees currently located within the development Site. There are no buildings located within the development Site. The Site offers no habitat for roosting bats or nesting birds.

The Site offers no habitats suitable for other protected species.

5 **REFERENCES**

Ref. 1 Joint Nature Conservation Committee (no date) UK BAP Priority Species and Habitats. Available at: <http://jncc.defra.gov.uk/page-5705>

Ref. 2 Convention on Biological Diversity, (2010); 'Strategic Plan for Biodiversity 2011–2020.' Available at: <http://www.cbd.int/decision/cop/?id=12268>

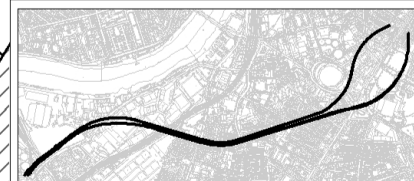
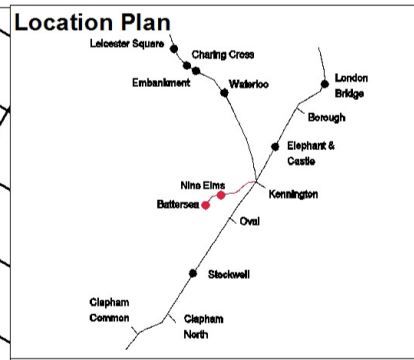
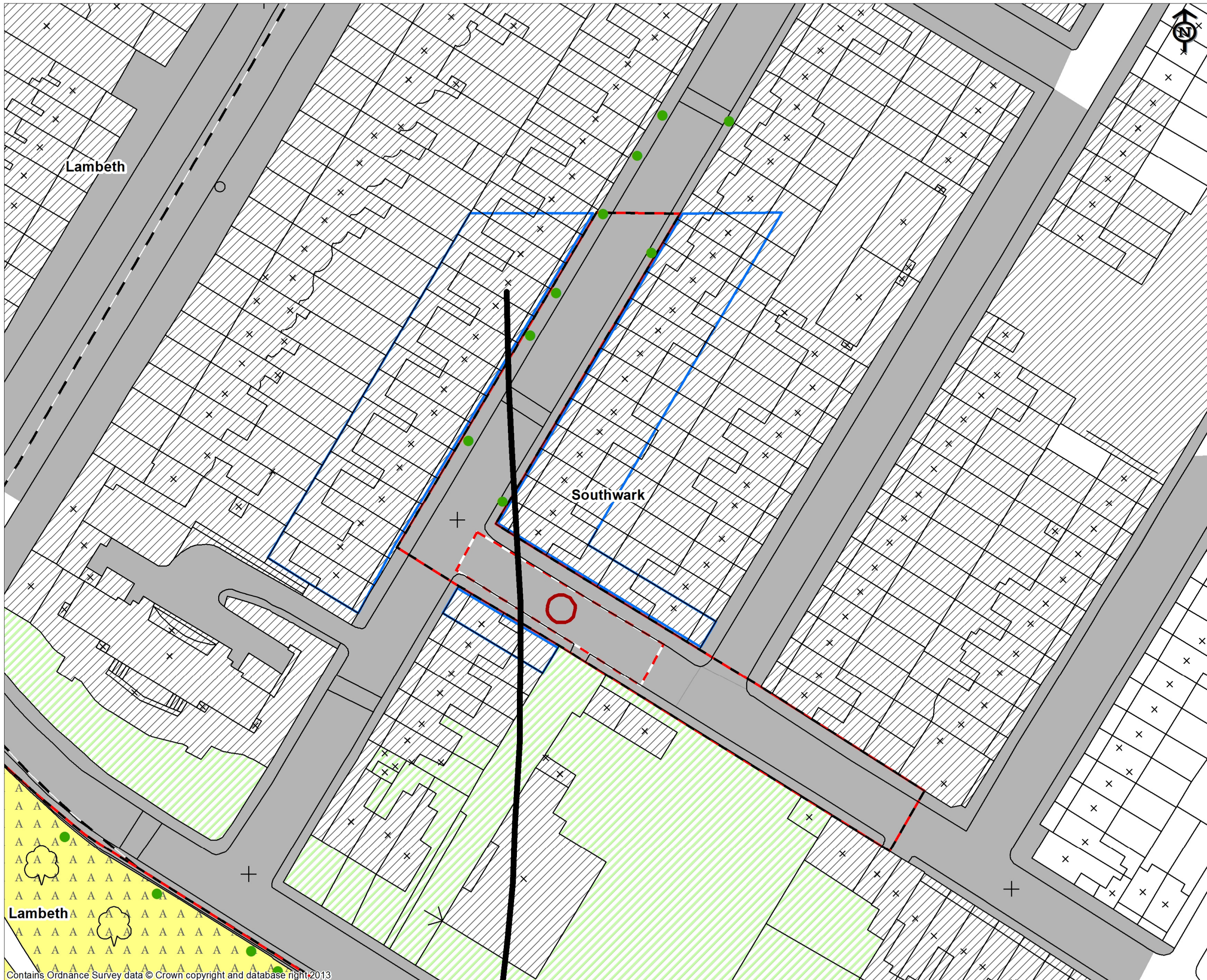
Ref. 3 European Commission, (2011) 'The EU Biodiversity Strategy to 2020

Ref. 4 London Biodiversity Partnership, (2007); 'The London Biodiversity Action Plan.'. Available at: <http://www.lbp.org.uk/londonap.html>.

Ref. 5 Natural England (2010) Multi Agency Geographic Information for the Countryside (MAGIC). Available at: <http://www.magic.gov.uk/default.htm>

Ref. 6 Joint Nature Conservation Committee (JNCC) (1993) Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit, revised reprint 2003. JNCC. Peterborough

Ref. 7 Her Majesties Stationary Office (HMSO) (1981) Wildlife and Countryside Act 1981.



- Key**
- Proposed Development**
 - Grouting Construction Site
 - Grouting Shaft
 - Track Alignment (Below Ground)
 - Phase 1 Habitat Survey**
 - Scattered Trees
 - Amenity Grasslands
 - Hardstanding
 - Survey Boundaries**
 - Buildings - Private Property Not Surveyed
 - Gardens - Private Property Not Surveyed
 - Phase 1 Habitat Survey Boundary
 - Scoped for Bat Potential
 - Outside Phase 1 Survey Boundary

Client:
Transport for London

URS
Project:
NORTHERN LINE EXTENSION
TO BATTERSEA
TWO FOR TfL

Drawing:
Phase 1 Map

Suitability:
S4 FORMAL ISSUE TO CLIENT

Drawn by: DT Date: 04/03/2013
Checked by: TW Date: 04/03/2013
Approved by: HW Date: 04/03/2013
Drawing Scale: 1:600 @ A3

Drawing No: **Figure 2** Revision: **01**



Radcot Street Grouting
Shaft

Phase 1 Ecology Report

October 2012

46370144

Prepared for:
Transport for London

UNITED
KINGDOM &
IRELAND



REVISION RECORD

| Rev | Date | Details | Prepared by | Reviewed by | Approved by |
|-------|----------|------------------------|---------------------------------------|---|-----------------------------------|
| Final | 04.10.12 | Phase 1 Ecology Report | Laura Cobden Graduate Ecologist | Rachel Holmes Principal Environmental Consultant | Martin Brit Technical Director |
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1 INTRODUCTION

1.1 Background

This Ecological Appraisal has been prepared by URS Infrastructure & Environment UK Limited (URS) on behalf of TFL (the Applicant) in support of a Transport and Works Act (TWA) application for the Northern Line Extension, and this report describes the ecological condition at Radcot Street grouting shaft site, hereafter referred to as the 'Site'. The Site is located in the Borough of Lambeth, London and centred on Ordnance Survey (OS) grid reference TQ 314 781.

1.2 Proposed Development

The Site is located on Radcot Street at the end of Methley Street and Ravensdon Street (Figure 2). It is a residential area comprising of terraced houses.

1.3 Scope of Work

URS was appointed to undertake a desk study and an extended Phase 1 habitat survey for the Site, the findings of which are presented in this report. The report includes an assessment of the potential for the Site to support protected and notable species, and should be read in conjunction with Chapter 14: Ecology of Environmental Statement Volume I.

1.4 Relevant Planning Policy

1.4.1 UK Biodiversity Action Plan (BAP)

The UK BAP reviews the status of species and habitats on a national scale (Ref. 1). It sets out targets for a number of Priority Species and Habitats as well as for broad habitat types. The revised UK List of Priority Species and Habitats was published online in August 2007 and has been formally adopted. The list contains 1,150 species and 65 habitats.

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1.4.3 London BAP

The London BAP includes 214 Species Action Plans (SAPs), including those for bats and house sparrow (Ref. 4). Peregrine falcon *Falco peregrinus* and black redstart *Phoenicurus ochruros* are also identified as an important species in London.

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2 METHODOLOGY

2.1 Desk Study

A desk study was undertaken by URS in August 2010. The desk study consisted of an ecological data search for information on statutory and non-statutory sites; protected/notable species records; and habitat or open space information held by the Geographic Information for Greater London (GiGL). The GiGL search area included the Site and the surrounding land within a 2 kilometre (km) radius. Only records of protected and notable species dated from within the last 10 years were considered in the baseline review. Records of designated sites within the search area were verified through a review of relevant information on the MAGIC (Ref. 3) website.

2.2 Extended Phase 1 Habitat Survey

An extended Phase 1 habitat survey of the Site was undertaken on 3rd October 2012. The survey followed the Joint Nature Conservation Committee (JNCC) Phase 1 survey guidelines (Ref. 4). The habitats on and adjacent to the Site were classified according to the Phase 1 habitat survey methodology and recorded on a scale map. The survey was 'extended' to record the presence or the potential of the Site to support protected and notable species.

The survey also included a search for invasive species listed on Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA) (Ref. 5), such as Japanese knotweed *Fallopia japonica*.

3 RESULTS

3.1 Desk Study

Statutory and non-statutory sites relevant to the Site are described below. The locations of these sites are presented on Figure 1.

3.1.1 Statutory Sites

There are no known statutory sites located within 2km of the Site.

3.1.2 Non Statutory Sites

There are up to 19 SINC designations and no London Wildlife Trust Reserves situated within 2km of the Site. Non-statutory designations over 1km from the Site are not described below, as these are considered to be too far from the Site to be impacted by the proposed development.

Sites of Metropolitan Importance for Nature Conservation (SMINC)

The River Thames and Tidal Tributaries SMINC is located within 1km from the Site. It is valued as a wildlife corridor and for the variety of habitats it provides, including saltmarsh, reed beds and running water, which supports many valuable fish and bird species. In addition, the river walls provide habitat for invertebrates, which in turn support a number of bird species, including black redstarts. See M031 on Figure 1.

Sites of Borough Importance for Nature Conservation (SBINC)

Harleyford Road Community Garden is a community garden that supports some wildlife. It is located 0.7km to the west of the Site. See LaBII08 on Figure 1.

Roots and Shoots Nature Gardens are located 0.7km to the northwest of the Site and contain a thriving wildlife garden run by a youth training organisation. See LaBII09 on Figure 1.

Walworth Garden Farm is a horticultural city farm with a natural area that contains a small. It is within 0.7km to the west of the Site. See SoBII15 on Figure 1.

Sites of Local Importance for Nature Conservation (SLINC)

Vauxhall City Farm is located 0.7km to the west of the Site which is a thriving city farm which provides many opportunities for local people. See LaL05 on Figure 1.

Archbishop Sumner Nature Garden is an interesting garden which has some attractive murals. It is located 0.6km to the north of the Site. See LaL10 on Figure 1.

Kennington Park is a classic example of a Victorian park with large trees and a lodge designed by Prince Albert. It is 0.5km to the southeast of the Site. See LaL14 on Figure 1.

Geraldine May Harmsworth Park surrounds the Imperial War Museum and includes rare London flower grassland which includes the hairy buttercup *Ranunculus sardous*. It is located 0.9km to the north of the Site. See SoL15 on Figure 1.

Surrey Gardens is a SLINC located 0.5km to the east of the Site. It is a small park open to the public with an area of wildflowers. See SoL28 on Figure 1.

3.1.3 Protected and Notable Species Records

GiGL returned records of a large number of specially protected and notable bird species within 2km radius. These include a number of birds associated with the River Thames such as kingfisher *Alcedo atthis*, common tern *Sterna hirundo* and herring gull *Larus argentatus*. The Site is located within the black redstart Known Key Area.

3.2 **Extended Phase 1 Habitat Survey**

3.2.1 Habitats and Flora

The only Phase 1 habitat type that was recorded within the Site is listed below, in addition to its associated alphanumeric reference codes, as detailed in the JNCC Phase 1 survey guidelines:

- Hardstanding (J3. 6); and
- Scattered Trees (A3.1).

3.2.2 Hardstanding

The Site is predominantly hardstanding in the form of roads and pavements. These areas provide no opportunities for wildlife (Figure 2).

3.2.3 Scattered Trees

There are several trees planted within the pavements. They include silver birch *Betula pendula*, pear *Pyrus* sp, rowan *Sorbus aucuparia*, *Photinia* sp, locust tree *Gleditsia* sp. and ash *Fraxinus excelsior*.

An arboricultural survey was undertaken by London Underground Limited in October 2012, the results of which are provided in Appendix 14: Ecology and Trees of ES Volume II.

4 **POTENTIAL FOR PROTECTED SPECIES**

The trees located just outside the Site are not considered to have any bat roosting potential as they do not have any crevices or suitable roosting places for bats. The trees present may provide suitable bird breeding habitat.

The Site does not have habitats suitable for other protected species.

This Site lies within a Kennington Conservation Area which is an area of special architectural or historical interest where it is desirable to preserve or enhance its character or appearance. This includes the protection of trees in this area and therefore on Site. To prune or fell a tree at this Site, six weeks' notice is required in writing before any works are carried out

5 **REFERENCES**

Ref. 1 Joint Nature Conservation Committee (no date) UK BAP Priority Species and Habitats. Available at: <http://jncc.defra.gov.uk/page-5705>

Ref. 2 Convention on Biological Diversity, (2010); 'Strategic Plan for Biodiversity 2011–2020.' Available at: <http://www.cbd.int/decision/cop/?id=12268>

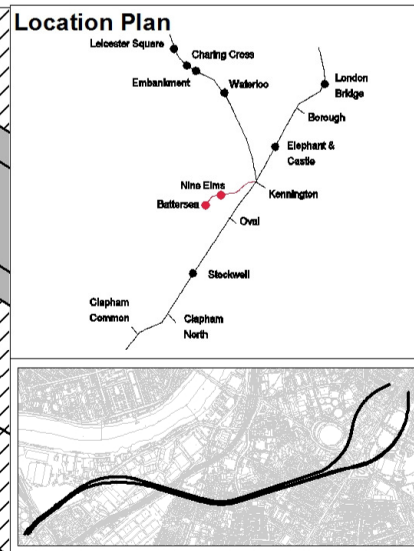
Ref. 3 European Commission, (2011) 'The EU Biodiversity Strategy to 2020

Ref. 4 London Biodiversity Partnership, (2007); 'The London Biodiversity Action Plan.'. Available at: <http://www.lbp.org.uk/londonap.html>.

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- Key**
- Proposed Development**
 - Grouting Construction Site
 - Grouting Shaft
 - Track Alignment (Below Ground)
 - Phase 1 Habitat Survey**
 - Scattered Trees
 - Amenity Grassland
 - Hardstanding
 - Introduced Shrub
 - Survey Boundaries**
 - Buildings - Private Property
 - Not Surveyed
 - Phase 1 Habitat Survey Boundary
 - Scoped for Bat Potential
 - Outside Phase 1 Survey Boundary

| | | |
|----------------|---|------------------|
| Client: | Transport for London | |
| | | |
| Project: | NORTHERN LINE EXTENSION TO BATTERSEA TWAO FOR TfL | |
| Drawing: | Phase 1 Map | |
| Suitability: | S4 FORMAL ISSUE TO CLIENT | |
| Drawn by: | DT | Date: 04/03/2013 |
| Checked by: | TW | Date: 04/03/2013 |
| Approved by: | HW | Date: 04/03/2013 |
| Drawing Scale: | 1:500 @ A3 | |
| Drawing No: | Figure 2 | Revision: 01 |



Kennington Park
Ventilation Shaft

Phase 1 Ecology Report

October 2012

46370144

Prepared for:
Transport for London

UNITED
KINGDOM &
IRELAND



REVISION RECORD

| Rev | Date | Details | Prepared by | Reviewed by | Approved by |
|-------|----------|------------------------|---------------------------------------|---|-----------------------------------|
| Final | 04.10.12 | Phase 1 Ecology Report | Laura Cobden Graduate Ecologist | Rachel Holmes Principal Environmental Consultant | Martin Brit Technical Director |
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1. INTRODUCTION

1.2 Background

This Ecological Appraisal has been prepared by URS Infrastructure & Environment UK Limited (URS) on behalf of TFL (the Applicant) in support of a Transport and Works Act (TWA) application for the Northern Line Extension, and this report describes the ecological condition at Kennington Park ventilation shaft site and associated head house and traction substation, hereafter referred to as the 'Site'. The Site is located in Lambeth, London and centred on Ordnance Survey (OS) grid reference TQ 315 779.

1.3 Proposed Development

The Kennington Park ventilation shaft proposed location is in the northeast corner of Kennington Park. It will involve the demolition of a building on Site and the construction of a head house and traction substation. The Site comprises amenity grassland with semi-mature trees (see Figure 2).

1.4 Scope of Work

URS was appointed to undertake a desk study and an extended Phase 1 habitat survey for the Site, the findings of which are presented in this report. The report includes an assessment of the potential for the Site to support protected and notable species, and should be read in conjunction with Chapter 14: Ecology of Environmental Statement Volume I.

1.5 Relevant Planning Policy

1.5.1 UK Biodiversity Action Plan (BAP)

The UK BAP reviews the status of species and habitats on a national scale (Ref. 1). It sets out targets for a number of Priority Species and Habitats as well as for broad habitat types. The revised UK List of Priority Species and Habitats was published online in August 2007 and has been formally adopted. The list contains 1,150 species and 65 habitats.

1.5.2 UK Post 2010 Biodiversity Framework

This document was produced in response to a change in strategic thinking following the publication of the Convention of Biological Diversity's Strategic Plan for Biodiversity 2011–2020 (Ref. 2) and its 20 'Aichi targets' and the launch of the new EU Biodiversity Strategy (Ref. 3) in May 2011.

It set a broad enabling structure for action across the UK between now and 2020, including a shared vision and priorities for UK-scale activities to help deliver the Aichi targets and the EU Biodiversity Strategy. A major commitment by Parties to the Convention of Biological Diversity is to produce a National Biodiversity Strategy and/or Action Plan (NBSAP).

1.5.3 London BAP

The London BAP includes 214 Species Action Plans (SAPs), including those for bats and house sparrow (Ref. 4). Peregrine falcon and black redstart *Falco peregrinus* and black redstart *Phoenicurus ochruros* are also identified as an important species in London.

The tidal River Thames, wasteland and built structures are identified as an important habitats within London.

2 METHODOLOGY

2.1 Desk Study

A desk study was undertaken by URS in August 2010. The desk study consisted of an ecological data search for information on statutory and non-statutory sites; protected/notable species records; and habitat or open space information held by the Geographic Information for Greater London (GiGL). The GiGL search area included the Site and the surrounding land within a 2 kilometre (km) radius. Only records of protected and notable species dated from within the last 10 years were considered in the baseline review. Records of designated sites within the search area were verified through a review of relevant information on the MAGIC (Ref. 3) website.

2.2 Extended Phase 1 Habitat Survey

An extended Phase 1 habitat survey of the Site was undertaken on 3rd October 2012. The survey followed the Joint Nature Conservation Committee (JNCC) Phase 1 survey guidelines (Ref. 4). The habitats on and adjacent to the Site were classified according to the Phase 1 habitat survey methodology and recorded on a scale map. The survey was 'extended' to record the presence or the potential of the Site to support protected and notable species.

On the 13th September 2012 the building within the Site, known as The Lodge was surveyed for its potential to support bats. The interior and exterior of The Lodge was inspected for signs of bats including staining, droppings, feeding remains and the bats themselves. The Lodge was also assessed for its potential to support bats, including points of access to the building.

The survey also included a search for invasive species listed on Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA) (Ref. 5), such as Japanese knotweed *Fallopia japonica*.

3 RESULTS

3.1 Desk Study

Statutory and non-statutory sites relevant to the Site are described below. The locations of these sites are presented on Figure 1. The Site is at location 2 on Figure 1.

3.1.1 Statutory Sites

There are no known statutory sites located within 1km of the Site.

3.1.2 Non Statutory Sites

There are up to 19 SINC designations and no London Wildlife Trust Reserves situated within 2km of the Site. Non-statutory designations between 1km and 2km from the Site are not described below, as these are considered to be too far from the Sites to potentially be impacted by the proposed development.

Sites of Borough Importance for Nature Conservation (SBINC)

Harleyford Road Community Garden SBINC is a community garden that supports some wildlife. It is located 8.6km to the west of Kennington Park ventilation shaft. See LaBII08 on Figure 1.

Sites of Local Importance for Nature Conservation (SLINC)

The Kennington Park ventilation shaft lies within Kennington Park which is designated as a SLINC. Kennington Park is designated for its large open space, amenity grassland, scattered trees and a planted flower garden, which provide foraging habitat for invertebrates. See LaL14 on Figure 1.

Vauxhall City Farm is located 0.9km to the west of the Site which is a thriving city farm run by local people. See LAL10 on Figure 1.

Archbishop Sumner Nature Garden is an interesting garden which has some attractive murals. It is located 0.7km to the north of the Site. See LAL05 on Figure 1.

Surrey Gardens is a SLINC located within 0.4km northeast of Kennington Park ventilation shaft. It is a small park open to the public. See SoL28 on Figure 1.

3.1.3 Protected and Notable Species Records

GiGL returned records of a large number of specially protected and notable bird species within 2km radius. These include a number of birds associated with the River Thames such as kingfisher *Alcedo atthis*, common tern *Sterna hirundo* and herring gull *Larus argentatus*. The Site is located within the black redstart Known Key Area.

3.2 **Extended Phase 1 Habitat Survey**

3.2.1 Habitats and Flora

The Phase 1 habitat types that were recorded within the Site (see Figure 2) are listed below, in addition to their associated alphanumeric reference codes, as detailed in the JNCC Phase 1 survey guidelines:

- Amenity Grassland (J.1.2)
- Parkland/scattered trees (A.3); and
- Building (J.3.6).

The Site comprises of amenity grassland with scattered semi-mature trees. An area of private land is located in the east of the Site which was not accessible.

3.2.2 Amenity Grassland

The Site is dominated by amenity grassland, which is managed and had been recently mown at the time of the survey. Species present include perennial rye grass *Lolium perenne*, daisy *Bellis perennis* and dandelion *Taraxacum officinale* agg.

3.2.3 Scattered Trees

The trees on Site are mostly located along the northern border of the Site boundary. They include English oak *Quercus robur*, London plane *Platanus x acerifolia*, tree of heaven *Ailanthus altissima*, false acaci *Robinia pseudoacacia*, silver birch *Betula pendula* and ash *Fraxinus excelsior*. The trees seen inside the private garden include holly *Ilex aquifolium* *Prunus* sp. and magnolia *Magnolia* sp.

An arboricultural survey was undertaken by London Underground Limited in October 2012, the results of which are provided in Appendix 14: Ecology and Trees of ES Volume II.

3.2.4 Building

The Lodge is a two-storey brick built house with a pitched, tiled roof. There are two brick chimney stacks. The building was occupied at the time of survey. The exterior of the building was in good condition and no missing mortar or other gaps apparent in the brick work. The wooden soffits were in good condition. There were no missing/ lifted tiles or raised flashing on the roof.

The loft space was small and there were no obvious entry points for bats. The roof contained numerous cobwebs. The roof itself was not insulated.

A number of artificial bee hives were present in the garden and were managed by local residents.

4 **POTENTIAL FOR PROTECTED SPECIES**

The trees on the Site in Kennington Park are not considered to have any bat roosting potential due to lack of crevices and bat roosting features. No evidence of bats was recorded in The Lodge and the building had negligible potential to support roosting bats. Mammals such as foxes *Vulpes vulpes* and hedgehogs *Erinaceus europaeus* may use the Site.

The Site does not have suitable habitat to support black redstart.

5 **RELEVANT LEGISLATION**

5.1 **Bats**

All bat species are fully protected under the WCA and Habitat and Species Regulations, which make it an offence to intentionally or deliberately capture, kill or injure or disturb bats (whether in a roost or not), and intentionally or recklessly damage, destroy or obstruct access to their roosts.

5.2 **Mammals**

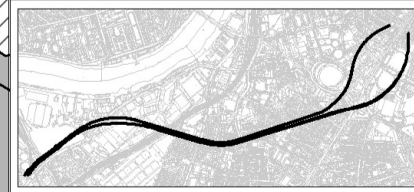
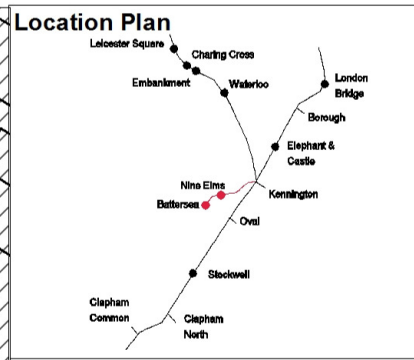
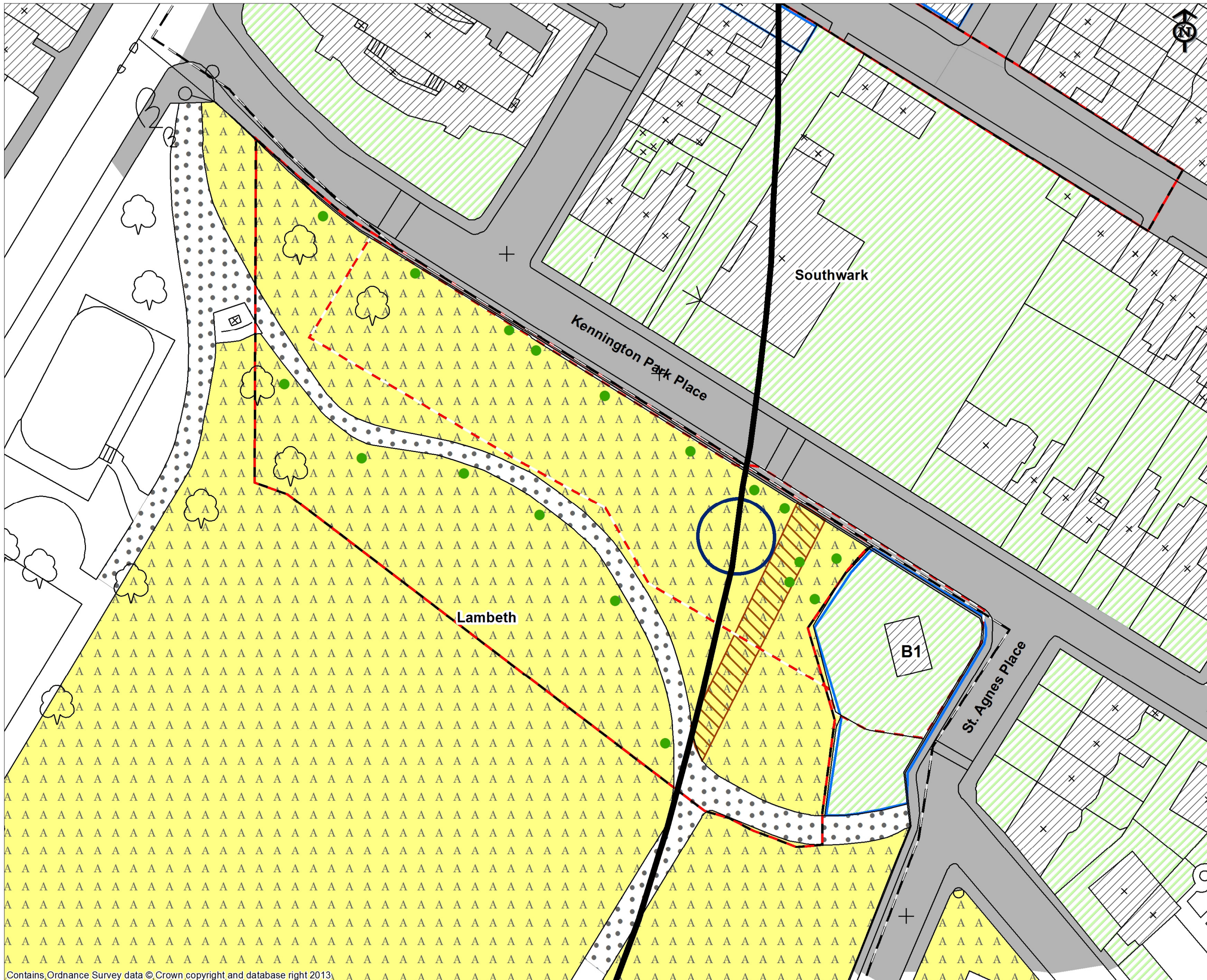
All wild mammals, including red fox, are protected by the Wild Mammals (Protection) Act 1996 (Ref. 7), which makes it an offence to intentionally cause any wild mammal unnecessary suffering by certain methods. Common wild mammals, such as red fox, use the Site. To avoid an offence, measures should be employed during the construction phase, including the covering of all deep holes and trenches overnight and/or the provision of planked escape routes for any wildlife that may fall in. In addition, any liquids held on-site should be stored in a secure lock-up. These measures should be implemented through a Demolition and Construction Method Statement (DCMS) or similar. Hoarding around the perimeter of the Site should also minimise the likelihood of any wild mammals gaining access to the Site.

5.3 **Breeding Birds**

All birds, their active nests and eggs are protected under the WCA. This legislation makes it an offence to kill, injure or take any wild bird or to take, damage or destroy the nest of any wild bird while that nest is in use or being built. Special penalties are given for these offences when related to birds listed on Schedule 1. The WCA makes it illegal to intentionally disturb any wild bird listed in Schedule 1 of the Act while it is building a nest or is in, or near a nest containing eggs or young or to disturb the dependent young.

6 REFERENCES

- Ref. 1 Joint Nature Conservation Committee (no date) UK BAP Priority Species and Habitats. Available at: <http://jncc.defra.gov.uk/page-5705>
- Ref. 2 Convention on Biological Diversity, (2010); 'Strategic Plan for Biodiversity 2011–2020.' Available at: <http://www.cbd.int/decision/cop/?id=12268>
- Ref. 3 European Commission, (2011) 'The EU Biodiversity Strategy to 2020
- Ref. 4 London Biodiversity Partnership, (2007); 'The London Biodiversity Action Plan.'. Available at: <http://www.lbp.org.uk/londonap.html>.
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- Ref. 6 Joint Nature Conservation Committee (JNCC) (1993) Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit, revised reprint 2003. JNCC. Peterborough
- Ref. 7 Her Majesties Stationary Office (HMSO) (1981) Wildlife and Countryside Act 1981.



- Key**
- Borough Boundary
 - Proposed Development**
 - Vent Construction Site
 - Vent Shaft
 - Phase 1 Habitat Survey Boundary
 - Scoped for Bat Potential
 - Outside Phase 1 Survey Boundary
 - Proposed Access Road
 - Track Alignment (Below Ground)
 - Phase 1 Habitat Survey**
 - Scattered Trees
 - Amenity Grassland
 - Bare Ground
 - Hardstanding
 - Survey Boundaries**
 - Buildings - Private Property Not Surveyed
 - Gardens - Private Property Not Surveyed

Client: **Transport for London**

URS

Project: **NORTHERN LINE EXTENSION TO BATTERSEA TWAO FOR TfL**

Drawing: **Phase 1 Map**

Suitability: **S4 FORMAL ISSUE TO CLIENT**

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| Checked by: TW | Date: 04/03/2013 |
| Approved by: HW | Date: 04/03/2013 |

Drawing Scale: 1:600 @ A3

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| Drawing No: Figure 2 | Revision: 01 |
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Kennington Green
Ventilation Shaft

Phase 1 Ecology Report

October 2012

46370144

Prepared for:
Transport for London

UNITED
KINGDOM &
IRELAND



REVISION RECORD

| Rev | Date | Details | Prepared by | Reviewed by | Approved by |
|-------|----------|------------------------|---------------------------------------|---|-----------------------------------|
| Final | 04.10.12 | Phase 1 Ecology Report | Laura Cobden Graduate Ecologist | Rachel Holmes Principal Environmental Consultant | Martin Brit Technical Director |
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1. INTRODUCTION

1.2 Background

This Ecological Appraisal has been prepared by URS Infrastructure & Environment UK Limited (URS) on behalf of TFL (the Applicant) in support of a Transport and Works Act (TWA) application for the Northern Line Extension, and this report describes the ecological condition at Kennington Green ventilation shaft site and associated head house, hereafter referred to as the 'Site'. The Site is located in Lambeth, London and centred on Ordnance Survey (OS) grid reference TQ 312 780.

1.3 Proposed Development

The Kennington Green ventilation shaft is proposed to be constructed adjacent to Kennington Road and Montford Place in the London Borough of Lambeth. The shaft will be installed in the southern area of Kennington Green and connected via an adit to the head house, which is being constructed in place of an existing brick building on the site of the Beefeater Distillery.

1.4 Scope of Work

URS was appointed to undertake a desk study and an extended Phase 1 habitat survey for the Site, the findings of which are presented in this report. The report includes an assessment of the potential for the Site to support protected and notable species, and should be read in conjunction with Chapter 14: Ecology of Environmental Statement Volume I.

1.5 Relevant Planning Policy

1.5.1 UK Biodiversity Action Plan (BAP)

The UK BAP reviews the status of species and habitats on a national scale (Ref. 1). It sets out targets for a number of Priority Species and Habitats as well as for broad habitat types. The revised UK List of Priority Species and Habitats was published online in August 2007 and has been formally adopted. The list contains 1,150 species and 65 habitats.

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This document was produced in response to a change in strategic thinking following the publication of the Convention of Biological Diversity's Strategic Plan for Biodiversity 2011–2020 (Ref. 2) and its 20 'Aichi targets' and the launch of the new EU Biodiversity Strategy (Ref. 3) in May 2011.

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1.5.3 London BAP

The London BAP includes 214 Species Action Plans (SAPs), including those for bats and house sparrow (Ref. 4). Peregrine falcon *Falco peregrinus* and black redstart *Phoenicurus ochruros* are also identified as an important species in London.

The tidal River Thames, wasteland and built structures are identified as important habitats within London.

2 METHODOLOGY

2.1 Desk Study

A desk study was undertaken in August 2010 by URS. The desk study consisted of an ecological data search for information on statutory and non-statutory sites; protected/notable species records; and habitat or open space information held by the Geographic Information for Greater London (GiGL). The GiGL search area included the Site and the surrounding land within a 2 kilometre (km) radius. Only records of protected and notable species dated from within the last 10 years were considered in this report. Records of designated sites within the search area were verified through a review of relevant information on the MAGIC website (Ref. 5).

2.2 Extended Phase 1 Habitat Survey

An extended Phase 1 habitat survey of the Site was undertaken on 3rd October 2012. The survey followed the Joint Nature Conservation Committee (JNCC) Phase 1 survey guidelines (Ref. 6). The habitats on and adjacent to the Site were classified according to the Phase 1 habitat survey methodology and recorded on a scale map. The survey was 'extended' to record the presence or the potential of the Site to support protected and notable species.

The survey also included a search for invasive species listed on Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA) (Ref. 7), such as Japanese knotweed *Fallopia japonica*.

3 RESULTS

3.1 Desk Study

Statutory and non-statutory sites relevant to the Site are described below. The locations of these sites are presented on Figure 1. The Site is location 4 on Figure 1.

3.1.1 Statutory Sites

There are no known statutory sites located within 1km of the Site.

3.1.2 Non Statutory Sites

There are up to 16 SINC designations and no London Wildlife Trust Reserves situated within 2km of the site. Non-statutory designations over 1km from the site are not described, as these are considered to be too far from the site to be impacted by the proposed development.

Sites of Metropolitan Importance for Nature Conservation (SMINCs)

The River Thames and Tidal Tributaries SMINC is located within 0.9km to the northwest of the Site. It is valued as a wildlife corridor due to the variety of habitats it provides, including saltmarsh, reed beds and running water, which supports many valuable fish and bird species. In addition, the river walls provide habitat for invertebrates, which in turn support a number of bird species, including black redstarts. See M031 on Figure 1.

Sites of Borough Importance for Nature Conservation (SBINCs)

Harleyford Road Community Garden is a community garden that supports some wildlife. It is located 0.5km to the west of the site. See LaBII08 in Figure 1.

Walworth Garden Farm is a horticultural city farm with a natural area. It is within 0.5km east of Kennington Green. See SoBII15 on Figure 1.

Roots and Shoots Nature Gardens are located 0.8km to the north of the Site and contain a thriving wildlife garden run by a youth training organisation. See LaBII09 on Figure 1.

Sites of Local Importance for Nature Conservation (SLINCs)

Vauxhall City Farm is located 0.5km to the west of the Site and is a thriving city farm which provides many opportunities for local people. See LaL05 on Figure 1.

Surrey Gardens is a SLINC located within 500m of the Site. It is a small park open to the public. See SoL28 on Figure 1..

Archbishop Sumner Nature Garden is an interesting garden which has some attractive murals. It is located 0.6km to the north of the Site. See LaL10 on Figure 1.

Kennington Park is a classic example of a Victorian park with large trees and a lodge designed by Prince Albert. It is 0.2km to the southeast of the Site. See LaL14 on Figure 1.

3.1.3 Protected and Notable Species Records

GiGL returned records of a large number of specially protected and notable bird species within a 2km radius. These include a number of birds associated with the River Thames such as kingfisher *Alcedo atthis*, common tern *Sterna hirundo* and herring gull *Larus argentatus*. The site is located within the black redstart Known Key Area.

3.2 **Extended Phase 1 Habitat Survey**

3.2.1 Habitats and Flora

The Phase 1 habitat types that were recorded within the Site are listed below, in addition to their associated alphanumeric reference codes, as detailed in the JNCC Phase 1 survey guidelines:

- Amenity Grassland (J.1.2);
- Scattered trees (A.3);
- Hardstanding (J3.6); and
- Buildings (J3.6)

This small fenced in parkland area is used by local residents for amenity purposes. The Site is dominated by amenity grassland with scattered mature trees and paths (Figure 2). It is surrounded by roads and lies in a predominantly residential area. A boarded up brick structure was present within the Site boundary.

3.2.2 Amenity Grass

The Site is dominated by amenity grassland, which is managed by regular mowing. The sward comprised perennial rye grass *Lolium perenne*, cranesbill *Geranium* sp., common mouse ear *Cerastium fontanum*, stitchwort *Stellaria graminia*, white clover *Trifolium repens* and yarrow *Achillea millefolium*.

3.2.3 Hardstanding

The Site is surrounded by hardstanding in the form of pavements and roads.

3.2.4 Buildings

There is a building facade on site which resembles a small building. It comprised of bricks and boarded up windows. There was no roof to the building and it is attached to the wall running alongside Montford Place.

3.2.5 Scattered Trees

There are five scattered trees within the amenity grassland, and an additional eight scattered trees planted within the surrounding pavements. The species present in the amenity grassland are cherry *Prunus cerasus*. Trees in the paving around include London plane *Platanus x hispanica*, Tree of Heaven *Ailanthus altissima*, ash *Fraxinus excelsior*, and ginkgo *Ginkgo biloba*.

An arboricultural survey was also undertaken by London Underground Limited in October 2012, the results of which are provided in Appendix 14: Ecology and Trees of ES Volume II.

4 **POTENTIAL FOR PROTECTED SPECIES**

The Site itself is not considered to have potential to support bats as the trees are in good condition and do not provide roosting features. The adjacent housing may provide limited bat potential in the roofs of the Edwardian terraces. The boarded up structure does not provide bat roosting opportunities as there are no suitable roosting areas within the wall. The trees present may provide suitable bird breeding habitat, but not for black redstart which require areas of bare ground, such as those that occur on brownfield sites.

The Site has a limited potential to support urban mammals such as foxes *Vulpes vulpes* and hedgehogs *Erinaceus europaeus*. There is no potential to support reptiles due to the management of the grassland including regular mowing and the high levels of disturbance from dog walkers and members of the public.

5 **RELEVANT LEGISLATION**

5.1 **Bats**

All bat species are fully protected under the WCA and the Conservation of Habitat and Species Regulations 2010 (Ref. 8) which make it an offence to intentionally or deliberately capture, kill or injure or disturb bats (whether in a roost or not), and intentionally or recklessly damage, destroy or obstruct access to their roosts.

5.2 **Mammals**

All wild mammals, including red fox, are protected by the Wild Mammals (Protection) Act 1996 (Ref. 9), which makes it an offence to intentionally cause any wild mammal unnecessary suffering by certain methods. Common wild mammals, such as red fox, may venture onto the Site during the demolition and construction of the proposed development. To avoid an offence, measures should be employed during the construction phase, including the covering of all deep holes and trenches overnight and/or the provision of planked escape routes for any wildlife that may fall in. In addition, any liquids held on-site should be stored in a secure lock-up. These measures should be implemented through a Demolition and Construction Method Statement (DCMS) or similar. Hoarding around the perimeter of the Site should also minimise the likelihood of any wild mammals gaining access to the Site.

5.3 **Breeding Birds**

All birds, their active nests and eggs are protected under the WCA. This legislation makes it an offence to kill, injure or take any wild bird or to take, damage or destroy the nest of any wild

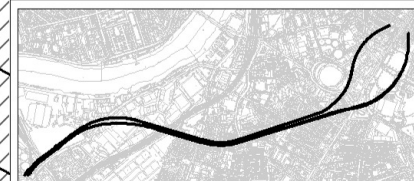
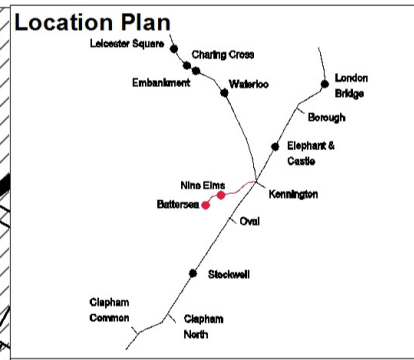
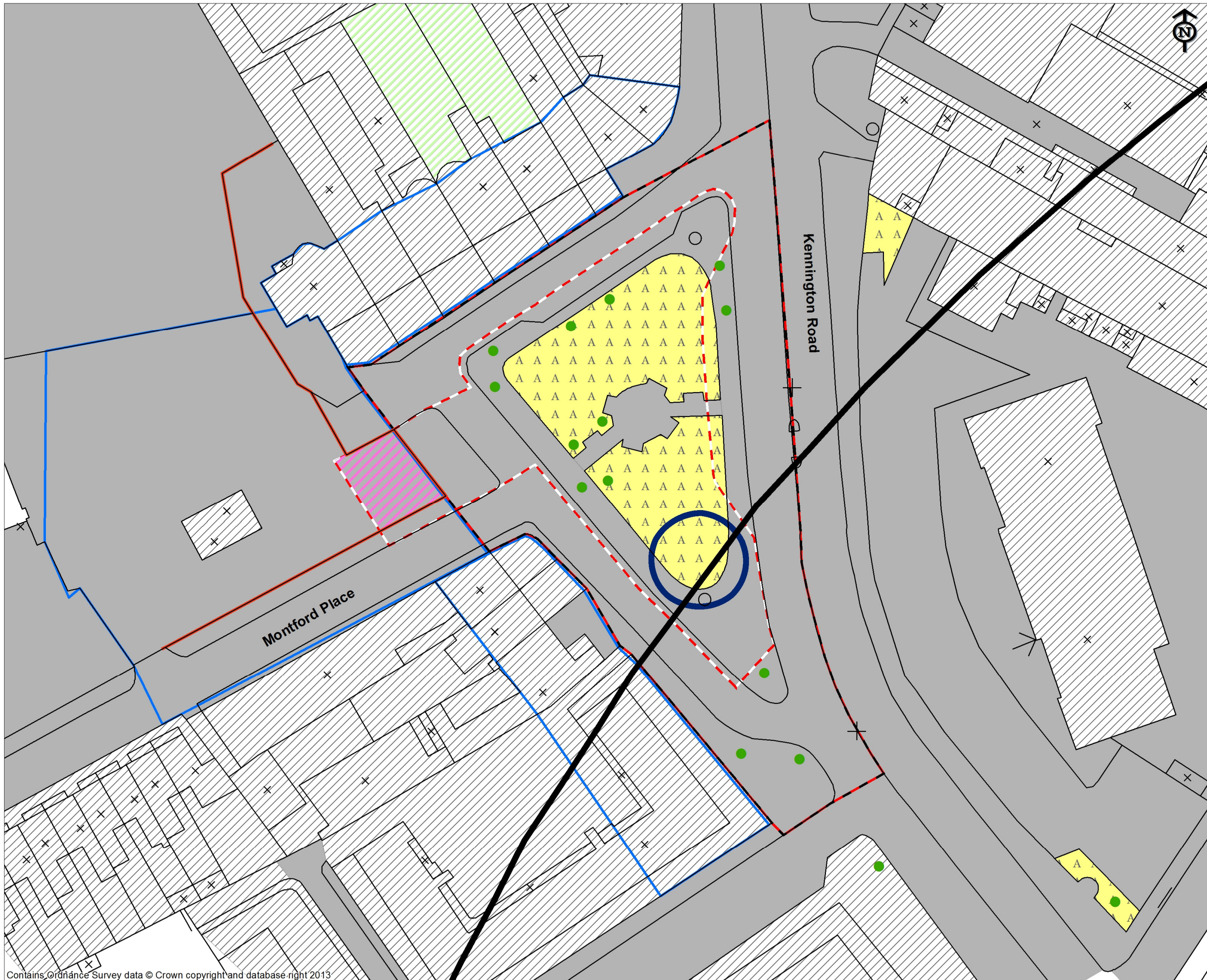
bird while that nest is in use or being built. Special penalties are given for these offences when related to birds listed on Schedule 1. The WCA makes it illegal to intentionally disturb any wild bird listed in Schedule 1 of the Act while it is building a nest or is in, or near a nest containing eggs or young or to disturb the dependent young.

5.4 Kennington Conservation Area

This Site lies within a Kennington Conservation Area, which is an area of special architectural or historical interest where it is desirable to preserve or enhance its character or appearance. This includes the protection of trees in this area and therefore on Site. To prune or fell a tree at this Site, six weeks' notice is required in writing before any works are carried out.

6 REFERENCES

- Ref. 1 Joint Nature Conservation Committee (no date) UK BAP Priority Species and Habitats. Available at: <http://jncc.defra.gov.uk/page-5705>
- Ref. 2 Convention on Biological Diversity, (2010); 'Strategic Plan for Biodiversity 2011–2020.' Available at: <http://www.cbd.int/decision/cop/?id=12268>
- Ref. 3 European Commission, (2011) 'The EU Biodiversity Strategy to 2020
- Ref. 4 London Biodiversity Partnership, (2007); 'The London Biodiversity Action Plan.'. Available at: <http://www.lbp.org.uk/londonap.html>.
- Ref. 5 Natural England (2010) Multi Agency Geographic Information for the Countryside (MAGIC). Available at: <http://www.magic.gov.uk/default.htm>
- Ref. 6 Joint Nature Conservation Committee (JNCC) (1993) Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit, revised reprint 2003. JNCC. Peterborough
- Ref. 7 Her Majesties Stationary Office (HMSO) (1981) Wildlife and Countryside Act 1981.
- Ref. 8 HMSO (2010) The Conservation of Habitats and Species Regulations 2010.
- Ref. 9 HMSO (1996) Wild Mammals (Protection) Act 1996



- Key**
- Vent Construction Site
 - Vent Shaft
 - Track Alignment (Below Ground)
 - Headhouse
- Phase 1 Habitat Survey**
- Scattered Trees
 - Wall
 - Amenity Grassland
 - Hardstanding
- Survey Boundaries**
- Buildings - Private Property Not Surveyed
 - Gardens - Private Property Not Surveyed
 - Phase 1 Habitat Survey Boundary
 - Scoped for Bat Potential
 - Outside Phase 1 Survey Boundary

Client:
Transport for London



Project:
NORTHERN LINE EXTENSION
TO BATTERSEA
TWA0 FOR TfL

Drawing:
Phase 1 Map

Suitability:
S4 **FORMAL ISSUE TO CLIENT**

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 Checked by: TW Date: 04/03/2013
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Drawing Scale: 1:500 @ A3
 Drawing No: Figure 2 Revision: 01



Nine Elms Station

Phase 1 Ecology Report

October 2012

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Prepared for:
Transport for London

UNITED
KINGDOM &
IRELAND



REVISION RECORD

| Rev | Date | Details | Prepared by | Reviewed by | Approved by |
|-------|----------|------------------------|---------------------------------------|---|-----------------------------------|
| Final | 04.10.12 | Phase 1 Ecology Report | Laura Cobden Graduate Ecologist | Rachel Holmes Principal Environmental Consultant | Martin Brit Technical Director |
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The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by URS has not been independently verified by URS, unless otherwise stated in the Report.

The methodology adopted and the sources of information used by URS in providing its services are outlined in this Report. The work described in this Report was undertaken on **3rd October 2012** and is based on the conditions encountered and the information available during the said period of time. The scope of this Report and the services are accordingly factually limited by these circumstances.

Where assessments of works or costs identified in this Report are made, such assessments are based upon the information available at the time and where appropriate are subject to further investigations or information which may become available.

URS disclaim any undertaking or obligation to advise any person of any change in any matter affecting the Report, which may come or be brought to URS' attention after the date of the Report.

Certain statements made in the Report that are not historical facts may constitute estimates, projections or other forward-looking statements and even though they are based on reasonable assumptions as of the date of the Report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. URS specifically does not guarantee or warrant any estimate or projections contained in this Report.

Where field investigations are carried out, these have been restricted to a level of detail required to meet the stated objectives of the services. The results of any measurements taken may vary spatially or with time and further confirmatory measurements should be made after any significant delay in issuing this Report.

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1. INTRODUCTION

1.1 Background

This Ecological Appraisal has been prepared by URS Infrastructure & Environment UK Limited (URS) on behalf of TFL (the Applicant) in support of a Transport and Works Act (TWA) application for the Northern Line Extension, and this report describes the ecological condition at Nine Elms station site and associated head house and traction substation, hereafter referred to as the 'Site'. The Site is located in Lambeth, London and centred on Ordnance Survey (OS) grid reference TQ 299 773.

1.2 Proposed Development

The proposed Nine Elms Station is proposed to be built off Wandsworth Road adjacent to Pascal Street. It will involve the removal of two buildings currently owned by Banhams' Security and an electricity substation and some landscaping and hardstanding (see Figure 2).

1.3 Scope of Work

URS was appointed to undertake a desk study and an extended Phase 1 habitat survey for the Site, the findings of which are presented in this report. The report includes an assessment of the potential for the Site to support protected and notable species, and should be read in conjunction with Chapter 14: Ecology of Environmental Statement Volume I.

1.3.1 UK Biodiversity Action Plan (BAP)

The UK BAP reviews the status of species and habitats on a national scale (Ref. 1). It sets out targets for a number of Priority Species and Habitats as well as for broad habitat types. The revised UK List of Priority Species and Habitats was published online in August 2007 and has been formally adopted. The list contains 1,150 species and 65 habitats.

1.3.2 UK Post 2010 Biodiversity Framework

This document was produced in response to a change in strategic thinking following the publication of the Convention of Biological Diversity's Strategic Plan for Biodiversity 2011–2020 (Ref. 2) and its 20 'Aichi targets' and the launch of the new EU Biodiversity Strategy (Ref. 3) in May 2011.

It set a broad enabling structure for action across the UK between now and 2020, including a shared vision and priorities for UK-scale activities to help deliver the Aichi targets and the EU Biodiversity Strategy. A major commitment by Parties to the Convention of Biological Diversity is to produce a National Biodiversity Strategy and/or Action Plan (NBSAP).

1.3.3 London BAP

The London BAP includes 214 Species Action Plans (SAPs), including those for bats and house sparrow (Ref. 4). Peregrine falcon *Falco peregrinus* and black redstart *Phoenicurus ochruros* are also identified as an important species in London.

The tidal River Thames, wasteland and built structures are identified as important habitats within London.

2 METHODOLOGY

2.1 Desk Study

A desk study was undertaken in August 2010 by URS. The desk study consisted of an ecological data search for information on statutory and non-statutory sites; protected/notable species records; and habitat or open space information held by the Geographic Information for Greater London (GiGL). The GiGL search area included the Site and the surrounding land within a 2 kilometre (km) radius. Only records of protected and notable species dated from within the last 10 years were considered in the baseline review. Records of designated sites within the search area were verified through a review of relevant information on the MAGIC (Ref. 5) website.

2.2 Extended Phase 1 Habitat Survey

An extended Phase 1 habitat survey of the Site was undertaken on 3rd October 2012. The survey followed the Joint Nature Conservation Committee (JNCC) Phase 1 survey guidelines (Ref. 6). The habitats on and adjacent to the Site were classified according to the Phase 1 habitat survey methodology and recorded on a scale map. The survey was 'extended' to record the presence or the potential of the Site to support protected and notable species.

The survey also included a search for invasive species listed on Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA) (Ref. 7), such as Japanese knotweed *Fallopia japonica*.

3 RESULTS

3.1 Desk Study

Statutory and non-statutory sites relevant to the Site are described below. The locations of these sites are presented on Figure 1. Nine Elms station is represented by location 5 on Figure 1.

3.1.1 Statutory Sites

The Site does not fall inside any statutory sites. One statutory site is located within 2km of the Site, namely Battersea Park Nature Areas Local Nature Reserve (LNR), which is described below.

Local Nature Reserves (LNR)

The Site does not fall inside any statutory sites. One statutory site is located within 2km of the Site, namely Battersea Park Nature Areas Local Nature Reserve (LNR), which is described below.

Battersea Park Nature Areas LNR

Battersea Park Nature Areas is a LNR and is situated approximately 1.8km west of the Nine Elms Station Site (LNR). It consists of two areas; the Wilderness, which is a linear plantation with four glades and the Nature Reserve, which consists of a circular belt of mixed woodland and scrub surrounding a managed meadow area. Both sites support a range of woodland bird species and invertebrates. See M102 on Figure 1.

3.1.2 Non-Statutory Sites

There are up to 20 SINC designations and no London Wildlife Trust Reserves situated within 2km of the Site. Non-statutory designations over 1km from the Site are not described below, as these are considered to be too far from the Site to be impacted by the proposed development.

Sites of Metropolitan Importance for Nature Conservation (SMINC)

The River Thames and Tidal Tributaries SMINC is located within 0.3km to the west of the Site. It is valued as a wildlife corridor and due to the variety of habitats it provides, including saltmarsh, reed beds and running water, which supports many valuable fish and bird species. In addition, the river walls provide habitat for invertebrates, which in turn support a number of bird species, including black redstarts. See M031 on Figure 1.

Sites of Borough Importance for Nature Conservation (SBINC)

Battersea Power Station SBINC lies 0.9km to the west of the Site. It is a Site of Borough Grade 1 Importance and supports a breeding pair of peregrine falcons and one or two pairs of black redstarts. The citation for this SBINC recognises that the redevelopment of the Site is inevitable, but states that any development will take account of these rare breeding birds. See WaBI07 on Figure 1.

Harleyford Road Community Garden is a community garden that supports some wildlife. It is located 0.8km to the northeast of the Site. See LaBI08 on Figure 1.

Sites of Local Importance for Nature Conservation (SLINC)

Vauxhall City Farm is located 1km northeast to the Site and is a thriving city farm which provides many opportunities for local people. See LaL05 on Figure 1.

Durand Gardens is an old garden square with secondary woodland and tall herbs. It is located 1km southeast to the Site. See LaL09 on Figure 1.

St George's Square Gardens is a small park with plenty of large trees and a good range of wildflowers. It is located 0.7km northwest of the Site. See WeL07 on Figure 1.

3.1.3 Protected and Notable Species Records

GiGL returned records of a large number of specially protected and notable bird species within 2km radius. These include a number of birds associated with the River Thames such as kingfisher *Alcedo atthis*, common tern *Sterna hirundo* and herring gull *Larus argentatus*. The Site is located within the black redstart Known Key Area.

3.2 **Extended Phase 1 Habitat Survey**

3.2.1 Habitats and Flora

The Phase 1 habitat types that were recorded within the Site are listed below, in addition to their associated alphanumeric reference codes, as detailed in the JNCC Phase 1 survey guidelines:

- Introduced shrub (J.1.4);
- Parkland/scattered trees (A.3);

- Hardstanding; and
- Buildings (J3.6).

The Site is dominated by Banham Security's buildings, petrol filling station, car park and an electrical substation (see Figure 2).. Small areas of planted introduced shrub and scattered trees are present. Overall, the Site is of low ecological value.

3.2.2 Introduced Shrub

There are a number of introduced shrubs and climbing plants in the car park. These areas are relatively species poor and include a number of non-native species including butterfly bush *Buddleia davidii*. Within this area a number of ephemeral and ruderal plants have established, including common nettle *Urtica dioica*, ribwort plantain *Plantago lanceolata*, white clover *Trifolium repens* and dandelion *Taraxacum officinale* agg.

3.2.3 Parkland/ Scattered Trees

There are a number of scattered trees within the landscaping and hardstanding. Species present include sycamore *Acer pseudoplatanus*, rowan *Sorbus aucuparia*, lime *Tilia sp*, London plane *Platanus x acerifolia* and ash *Fraxinus excelsior*. All of the trees present are immature or semi-mature.

An arboricultural survey was undertaken by London Underground Limited in October 2012, the results of which are provided in Appendix 14: Ecology and Trees of ES Volume II.

3.2.4 Buildings/ Structures and Hardstanding

The Site is covered in hardstanding in the form of car parks, roads and pavements.

The four buildings within the Site are as follows:

- B2 - Banhams Security offices are in a multi-storey brick building with a corrugated metal sheet roof. Although the brick part of the building is relatively old, the building is occupied and is in good condition. It has a modern roof. B2 has negligible potential to support bats.
- B3 - Electricity substation is a single-storey building located within the area of hardstanding in front of the Banham offices, owned by NCGM. There are a number of vents on the outside that may lead to crevices within the structure. There is a tall chimney on the western side of the building, which has a number of holes in the façade. This building is considered to have low potential to support bats.
- B4 - Office block adjacent to Banham offices. This is a modern multi-storey brick building with a flat roof. This building is currently occupied and is considered to have no potential to support bats.
- B6 - Petrol Station. The petrol station does not offer any suitable bat roosting features.

3.2.5 Adjacent Habitats

The River Thames is close to the Site and, along with the railway line; good commuting links to the Site for bats are present.

4 POTENTIAL FOR PROTECTED SPECIES

4.1 Bats

B3 (See Figure 2) had some features that could provide opportunities for roosting bats including broken bricks and cracked concrete on the walls. There is an open vent into the structure on the eastern and western façade; and the chimney has broken bricks, these features potentially provide spaces in which bats could roost and also provide access into the vacant building. These features combined with the location of the Site, which is close to the River Thames and the railway track (favoured commuting corridors), means that certain bat species that have been recorded in the area could use the electrical substation building as a roost.

4.2 Birds

The Site is located within the black redstart 'Known Key Area' with a number of records of this species close to the Site. The Site does not currently have habitats to support either foraging or nesting black redstarts. The trees on Site may provide nesting habitat for low numbers of birds associated with urban areas.

5 RELEVANT LEGISLATION

5.1 Bats

All bat species are fully protected under the WCA and Habitat and Species Regulations, which make it an offence to intentionally or deliberately capture, kill or injure or disturb bats (whether in a roost or not), and intentionally or recklessly damage, destroy or obstruct access to their roosts.

5.2 Breeding Birds

All birds, their active nests and eggs are protected under the WCA. This legislation makes it an offence to kill, injure or take any wild bird or to take, damage or destroy the nest of any wild bird while that nest is in use or being built. Special penalties are given for these offences when related to birds listed on Schedule 1. The WCA makes it illegal to intentionally disturb any wild bird listed in Schedule 1 of the Act while it is building a nest or is in, or near a nest containing eggs or young or to disturb the dependent young.

6 REFERENCES

Ref. 1 Joint Nature Conservation Committee (no date) UK BAP Priority Species and Habitats. Available at: <http://jncc.defra.gov.uk/page-5705>

Ref. 2 Convention on Biological Diversity, (2010); 'Strategic Plan for Biodiversity 2011–2020.' Available at: <http://www.cbd.int/decision/cop/?id=12268>

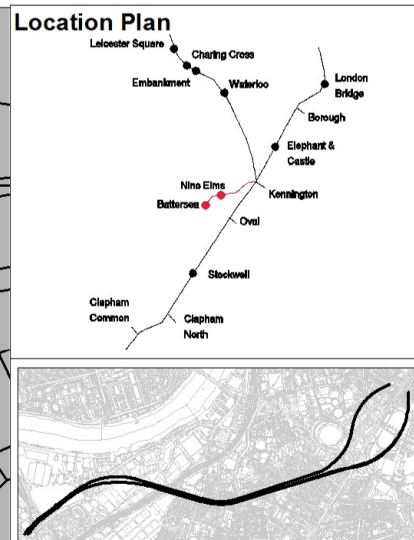
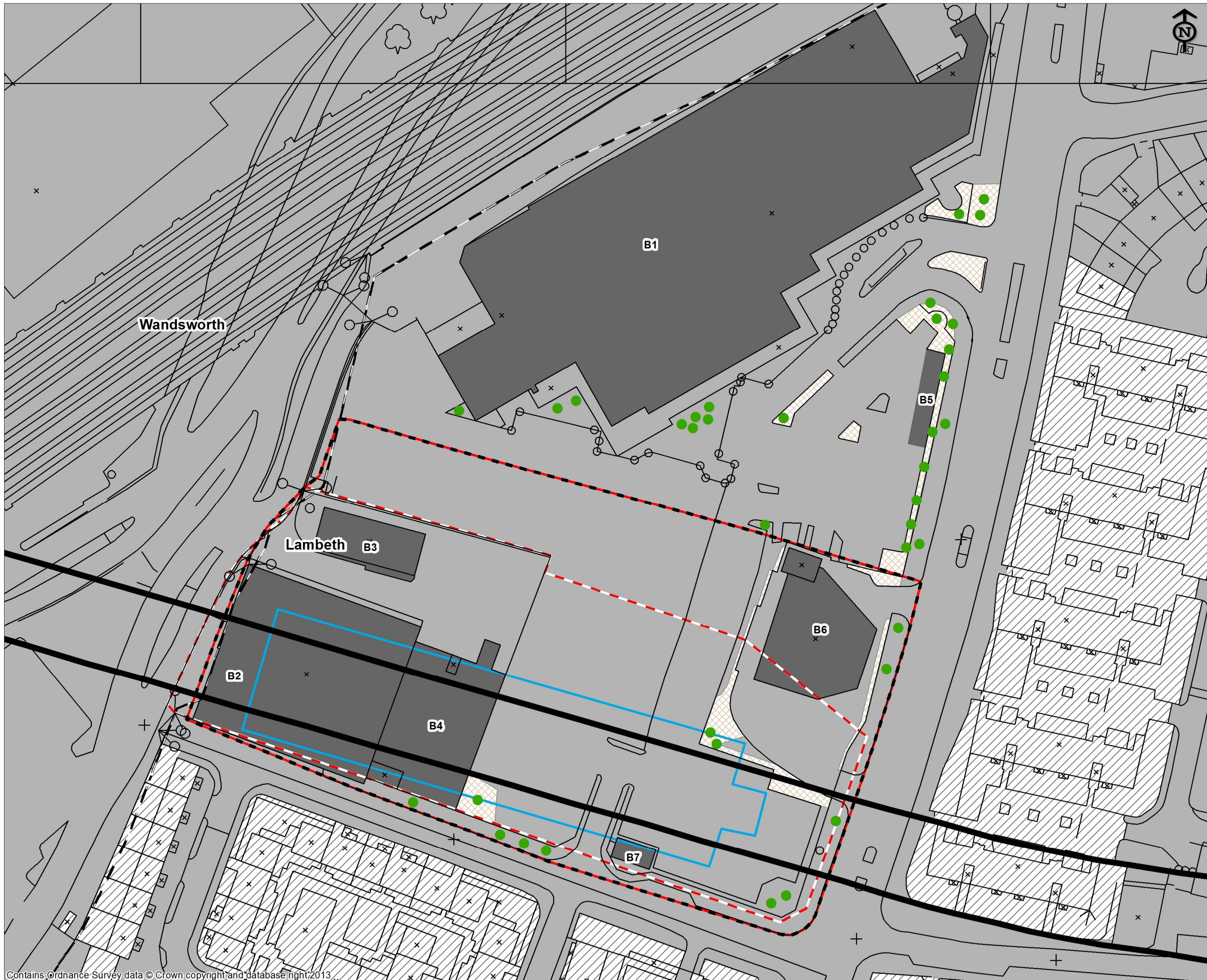
Ref. 3 European Commission, (2011) 'The EU Biodiversity Strategy to 2020

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- Key**
- Proposed Development
 - Station
 - Track Alignment (Below Ground)
 - Phase 1 Habitat Survey
 - Scattered Trees
 - Building
 - Introduced Shrub
 - Hardstanding
 - Survey Boundaries
 - Buildings - Private Property Not Surveyed
 - Gardens - Private Property Not Surveyed
 - Phase 1 Habitat Survey Boundary

Client: **Transport for London**

URS

Project: **NORTHERN LINE EXTENSION TO BATTERSEA TWAO FOR TfL**

Drawing: **Phase 1 Map**

Suitability: **S4 FORMAL ISSUE TO CLIENT**

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| Checked by: TW | Date: 04/03/2013 |
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| Drawing Scale: 1:800 @ A3 | |
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Battersea Power Station

Phase 1 Ecology Report

October 2012

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Prepared for:
Transport for London

UNITED
KINGDOM &
IRELAND



REVISION RECORD

| Rev | Date | Details | Prepared by | Reviewed by | Approved by |
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| Final | 25/10/12 | Phase 1 Report | Rachel Holmes Principal Environmental Consultant | Martin Brit Technical Director | Martin Brit Technical Director |
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| 6 | REFERENCES | 8 |

1. INTRODUCTION

1.1 Background

This Ecological Appraisal has been prepared by URS Infrastructure & Environment UK Limited (URS) on behalf of TFL (the Applicant) in support of a Transport and Works Act (TWA) application for the Northern Line Extension. This report describes the ecological condition at Battersea Power Station Northern Line extension site, hereafter referred to as the 'Site'. The Site is located in Battersea, London and centred on Ordnance Survey (OS) grid reference TQ 290 775.

1.2 Proposed Development

The Battersea Power Station Northern Line Extension is proposed to be constructed as part of the Battersea Power Station redevelopment. It will include a station and associated buildings.

1.3 Scope of Work

URS was appointed to undertake a desk study and an extended Phase 1 habitat survey for the Site, the findings of which are presented in this report. The report includes an assessment of the potential for the site to support protected and notable species, and should be read in conjunction with Chapter 14: Ecology of Environmental Statement Volume I.

1.4 Relevant Planning Policy

1.4.1 UK Biodiversity Action Plan (BAP)

The UK BAP reviews the status of species and habitats on a national scale (Ref. 1). It sets out targets for a number of Priority Species and Habitats as well as for broad habitat types. The revised UK List of Priority Species and Habitats was published online in August 2007 and has been formally adopted. The list contains 1,150 species and 65 habitats.

There are a range of Priority Species that could be relevant to the Site, including noctule bat *Nyctalus noctula*; soprano pipistrelle *Pipistrellus pygmaeus* and brown long-eared bat; A variety of bird species listed on the UK BAP may also be relevant to the Site, including house sparrow *Passer domesticus*, dunnock *Prunella modularis*, herring gull *Larus argentatus* and starling *Sturnus vulgaris*. These species are also species of principal importance in conserving biodiversity in England (Ref. 2), as required under Schedule 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (Ref. 3).

The fish species Atlantic salmon *Salmo salar*, European eel *Anguilla anguilla*, river lamprey *Lampetra fluviatilis*, sea lamprey *Petromyzon marinus*, smelt *Osmerus eperlanus*, brown trout *Salmo trutta and*, twaite shad *Allosa phallax* are Priority Species on the UK BAP.

Rivers and intertidal mudflats are a Priority Habitat on the UK BAP and may also be relevant to the Site.

The UK BAP is relevant in the context of Section 40 of the NERC Act 2006, because Priority Species and Habitats are material considerations in planning decisions.

1.4.2 London Biodiversity Action Plan

The London BAP includes 214 Species Action Plans (SAPs), including those for bats herring gull and house sparrow. Peregrine and black redstart are also identified as important species in London (Ref. 4).

The fish species Atlantic salmon *Salmo salar*, European eel *Anguilla anguilla*, river lamprey *Lampetra fluviatilis*, sea lamprey *Petromyzon marinus*, smelt *Osmerus eperlanus*, brown trout *Salmo trutta and*, twaite shad *Allosa phallax* are priority species on the London BAP.

The tidal River Thames, wasteland and built structures are identified as important habitats within London.

2 METHODOLOGY

2.1 Desk Study

A desk study was undertaken by URS in August 2008. The desk study consisted of an ecological data search for information on statutory and non-statutory sites; protected/notable species records; and habitat or open space information held by the Geographic Information for Greater London (GIGL). The GIGL search area included the Site and the surrounding land within a 2 kilometre (km) radius.

Fish data was requested from the Environment Agency (EA) in 2012.

Only records of protected and notable species dated from within the last 10 years were considered in the baseline review.

Records of designated sites within the search area were verified through a review of relevant information on the MAGIC website (Ref. 5).

2.2 Extended Phase 1 Habitat Survey

An extended Phase 1 habitat survey of the Site was undertaken on 3rd October 2012. The survey followed the Joint Nature Conservation Committee (JNCC) Phase 1 survey guidelines (Ref. 6) and the habitats on the Site were classified according to the Phase 1 habitat survey methodology.

The survey included a search for invasive species listed on Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) (WCA) (Ref. 7), such as Japanese knotweed *Fallopia japonica*.

The survey was 'extended' to also assess the potential of the Site to support protected and notable species.

The Site has been extensively surveyed over a number of years. A scoping opinion for an ecological impact assessment was conducted by URS in 2009. As well as numerous protected species surveys.

3 RESULTS

3.1 Desk Study

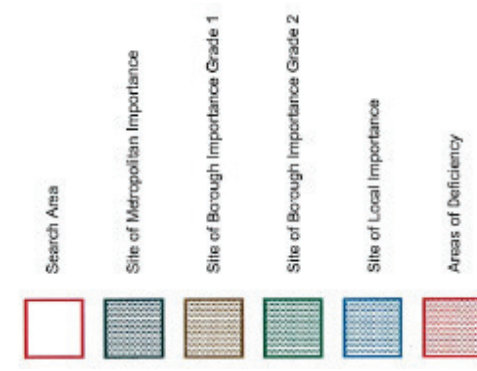
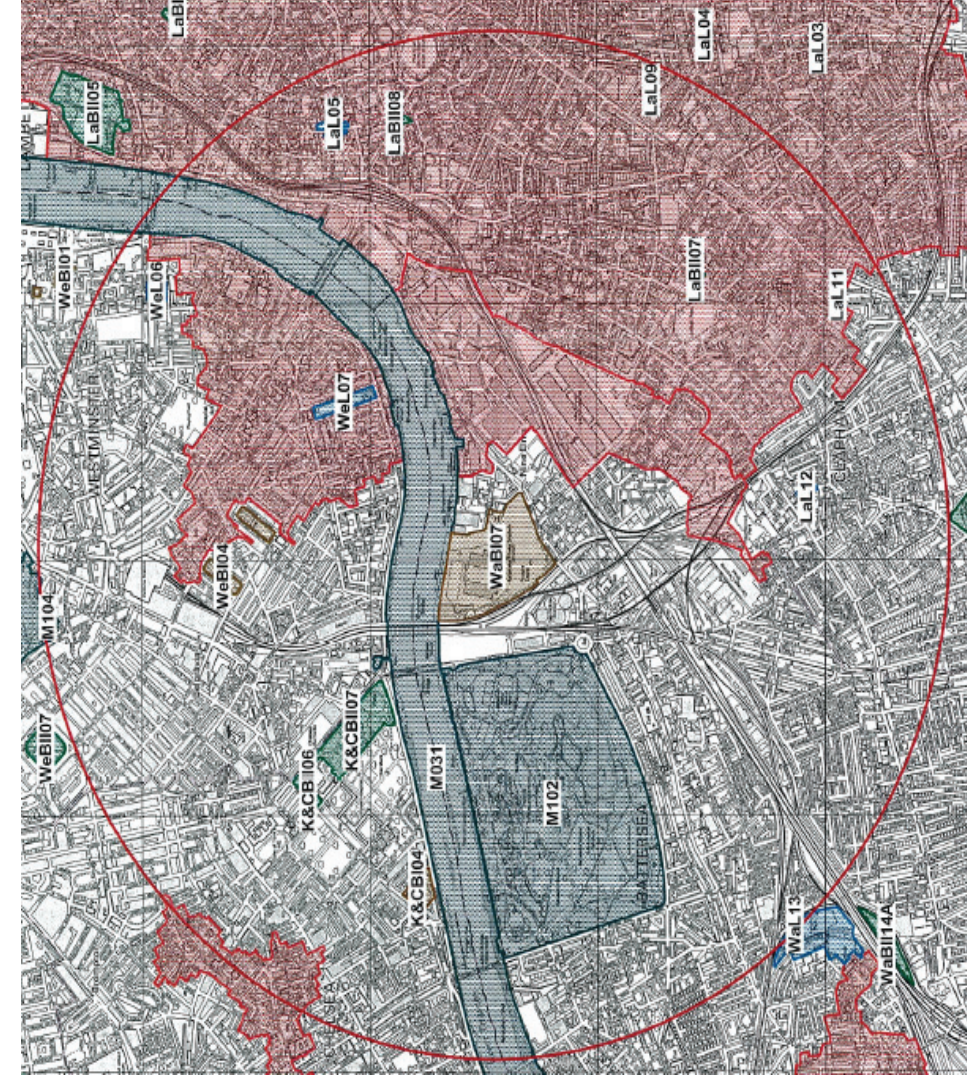
Statutory and non-statutory sites relevant to the Site are described below. The locations of these sites are presented on Figure 1.

3.1.1 Statutory Sites

Battersea Power Station NLE Site does not fall within or adjacent to the boundaries of any statutory sites. There is one statutory protected site within 2km, namely Battersea Park Nature Areas Local Nature Reserve (LNR) which is situated approximately 200m to the west of the Battersea Power Station NLE Site (M102). It consists of two areas; the Wilderness, which is a linear plantation with four glades and the Nature Reserve, which consists of a circular belt of

mixed woodland and scrub surrounding a managed meadow area. Both areas support a range of woodland bird species and invertebrates.

Figure 1. Non-Statutory Designated Sites Within 2km of the Site



3.1.2 Non-Statutory Sites

There are up to 16 SINC designations and no London Wildlife Trust Reserves situated within 2km of the Site. Non-statutory designations over 1km from the Site are not described, as these are considered to be too far from the Site to be impacted by the proposed development.

Sites of Metropolitan Importance for Nature Conservation (SMINC)

The River Thames and Tidal Tributaries SMINC is located adjacent to the Site. It is valued as a wildlife corridor and for the variety of habitats it provides, including saltmarsh, reed beds and running water, which supports many valuable fish and bird species. In addition, the river walls provide habitat for invertebrates, which in turn support a number of bird species, including black redstarts. See M031 on Figure 1.

Battersea Park Nature Areas LNR also forms part of a non-statutory site, Battersea Park Site of Metropolitan Importance (SMI). See M102 on Figure 1.

Sites of Borough Importance for Nature Conservation (SBINC)

The Battersea Power Station NLE Site lies within Battersea Power Station Site of Borough Importance (SBI) (Grade 1 Importance) which is a non-statutory designated site, See WaBI07 on Figure 1.

3.1.3 Protected and Notable Species Records

GIGL returned records of a large number of specially protected and notable bird species within 2km radius. These include a number of birds associated with the River Thames such as kingfisher *Alcedo atthis*, common tern *Sterna hirundo* and herring gull *Larus argentatus*.

Peregrine falcon *Falco peregrinus* is known to nest on structures within Battersea Power Station. Black redstarts have been present at Battersea Power Station since 1974, breeding was confirmed in 1995 and 1996 and it is likely that this species has bred every year since. The Site is located within the black redstart Known Key Area.

The EA annual fish surveys at Battersea revealed that fifteen fish species use the stretch of the River Thames adjacent to the Site. The dominant fish species are estuarine resident fish such as common goby *Pomatoschistus microps*, flounder *Platichthys flesus* and sand smelt *Atherina presbyter*, freshwater species including dace *Leuciscus leuciscus*, common bream *Abramis brama*, perch *Perca fluviatilis* and roach *Rutilus rutilus* and migratory species including eel *Anguilla anguilla* and smelt *Osmerus mordax*. Migratory species, such as Atlantic salmon *Salmo salar* and sea trout *Salmo trutta*, also pass through this area.

Numerous bat species were found near to the Site including Leisler's bat *Nyctalus leisleri*, noctule bat *Nyctalus noctula* and six bat roosts were located within 2km of the Site.

3.2 **Extended Phase 1 Habitat Survey**

3.2.1 Habitats and Flora

The Phase 1 habitat types that were recorded within the Site are listed below, in addition to their associated alphanumeric reference codes, as detailed in the JNCC Phase 1 Habitat Survey Guidelines:

- Semi-improved grassland (B2);
- Tall ruderal (C3.1);
- Amenity grassland (J1.2);
- Ephemeral/short perennial vegetation (J1.3);
- Scattered scrub (A2.2);
- Introduced shrub (J1.4);
- Buildings/ structures and hardstanding (J3.6);
- Bare ground (J4); and
- Mudflats and sand.

Figure 2 shows the approximate locations of the habitats on the Site.

3.2.2 Semi-Improved Grassland

The areas of semi-improved grassland were dominated by false-oat grass *Arrhenatherum elatius*, together with Yorkshire fog *Holcus lanatus*, smooth meadow-grass *Poa pratensis* and a range of forbs, including ribwort plantain *Plantago lanceolata*. This area had developed on rubble/gravel substrates associated with relatively new brownfield habitats. As a whole this grassland type was relatively species-poor.

3.2.3 Tall Ruderal

Small areas of tall ruderal plants had established around the Site. This habitat was dominated by common nettle *Urtica dioica*, mugwort *Artemisa vulgaris* and hoary mustard *Hirschfeldia incana*.

3.2.4 Amenity Grassland

Small areas of amenity grassland were present in the landscaped areas around the Site entrance.

3.2.5 Ephemeral/Short Perennial

Small areas of ephemeral/ short perennial plants had established on the gravel substrate. These areas were subject to physical disturbance by trampling. The dominant plant species were ribwort plantain, melilot *Melilotus albus* and rat's-tail fescue *Vulpia myuros*.

3.2.6 Scattered Scrub

Small pockets of scattered scrub were present around the Site. The dominant plant species were butterfly-bush *Buddleja davidii* and bramble *Rubus* sp.

3.2.7 Introduced Shrub

Non-native introduced shrubs were present in the landscaped areas near to the Site entrance.

3.2.8 Buildings/ Structures and Hardstanding

There are three buildings within the Site boundary. Building 1 (B1) is a single-storey, metal shed with a pitched roof. B2 is a brick built, two-storey building with a pitch roof. The building is unoccupied and part of it has been demolished. It is understood that consent has been obtained for the demolition of this building, as part of the Battersea Power Station redevelopment. B3 is a modern glass and metal building which has no apparent roof void.

3.2.9 Mudflats and Sand

A narrow belt of mudflats and sand was present along the edge of the River Thames. This area was exposed at low tide. No vegetation was recorded in this area; however, several species of birds were recorded here.

3.2.10 Adjacent Habitats

Battersea Power Station lies immediately to the west of the Site boundary and comprises a disused, derelict brick building with four concrete towers. The brickwork has some shallow crevices which may provide temporary roost Sites for crevice dwelling bats.

The River Thames forms the northern Site boundary. The river was approximately 200m in width, fast flowing and turbid at the time of survey. No aquatic vegetation was recorded.

To the west of the Site lies an active railway line. The railway lines forms a green corridor which runs north-south along the western Site boundary.

3.2.11 Fauna

Several species of birds were recorded on the mudflats on the edge of the River Thames. These include mallard *Anas platyrhynchos*, coot *Fulica atra*, herring gull and black headed gull *Larus ridibundus*. Peregrine were recorded roosting on a metal structure to the west of the application Site.

4 **POTENTIAL FOR PROTECTED SPECIES**

4.1 **Bats**

B2 had some features that provide opportunities for roosting bats including access to the interior of the building via a broken window. As consent for the demolition of this building has already been obtained as part of a separate planning application, no further surveys are recommended in this report.

The River Thames and adjacent railway line would provide foraging and commuting habitats for bats. The Battersea Power Station building could support roosting bats.

4.2 **Birds**

The Site does not provide suitable nesting habitat peregrine falcon or black redstart; however, they may nest on buildings on adjacent land and have been recorded as nesting on the wider Battersea Power Station Site. Species such as starlings *Sturnus vulgaris*, feral pigeon *Columba livia* and dunnock may nest in the vegetation and buildings on and near to the Site. Waterbirds may use the mudflats for foraging at low tide.

4.3 **Fish**

There are no aquatic habitats on the Site; however, the River Thames is known to support a range of resident and migratory fish species.

5 **RELEVANT LEGISLATION**

5.1 **Bats**

All bat species are fully protected under the WCA and Habitat and Species Regulations, which make it an offence to intentionally or deliberately capture, kill or injure or disturb bats (whether in a roost or not), and intentionally or recklessly damage, destroy or obstruct access to their roosts.

5.2 **Breeding Birds**

All birds, their active nests and eggs are protected under the WCA. This legislation makes it an offence to kill, injure or take any wild bird or to take, damage or destroy the nest of any wild bird while that nest is in use or being built. Special penalties are given for these offences when related to birds listed on Schedule 1. The WCA makes it illegal to intentionally disturb any wild bird listed in Schedule 1 of the Act while it is building a nest or is in, or near a nest containing eggs or young or to disturb the dependent young.

5.3 **Fish**

Atlantic Salmon is a European Protected Species (EPS) listed on Schedule 3 of the Conservation of Habitats and Species Regulations 2010 and therefore cannot be killed or taken in certain ways. The sea lamprey, river lamprey, twaite shad and allis shad are all protected species under the Habitats Directive. The allis and twaite shad are listed on Schedule 5 of the WCA which prohibits their intentional killing, injuring or taking.

6 **REFERENCES**

Ref. 1 Joint Nature Conservation Committee (no date); 'UK BAP Priority Species and Habitats.' Available at: <http://jncc.defra.gov.uk/page-5705>

Ref. 2 Secretary of State (2010); 'Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 - Habitats and Species of Principal Importance in England.'

Ref. 3 Her Majesty's Stationary Office (HMSO) (2006); 'Natural Environment and Rural Communities Act.'

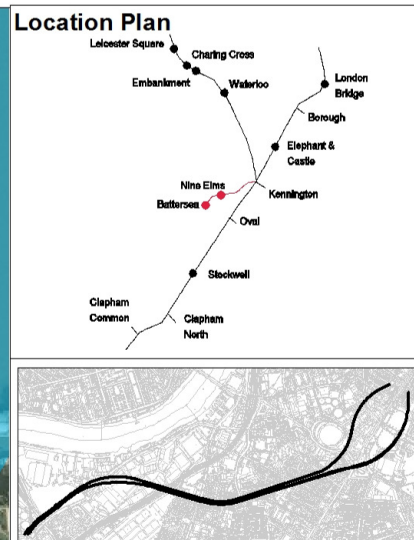
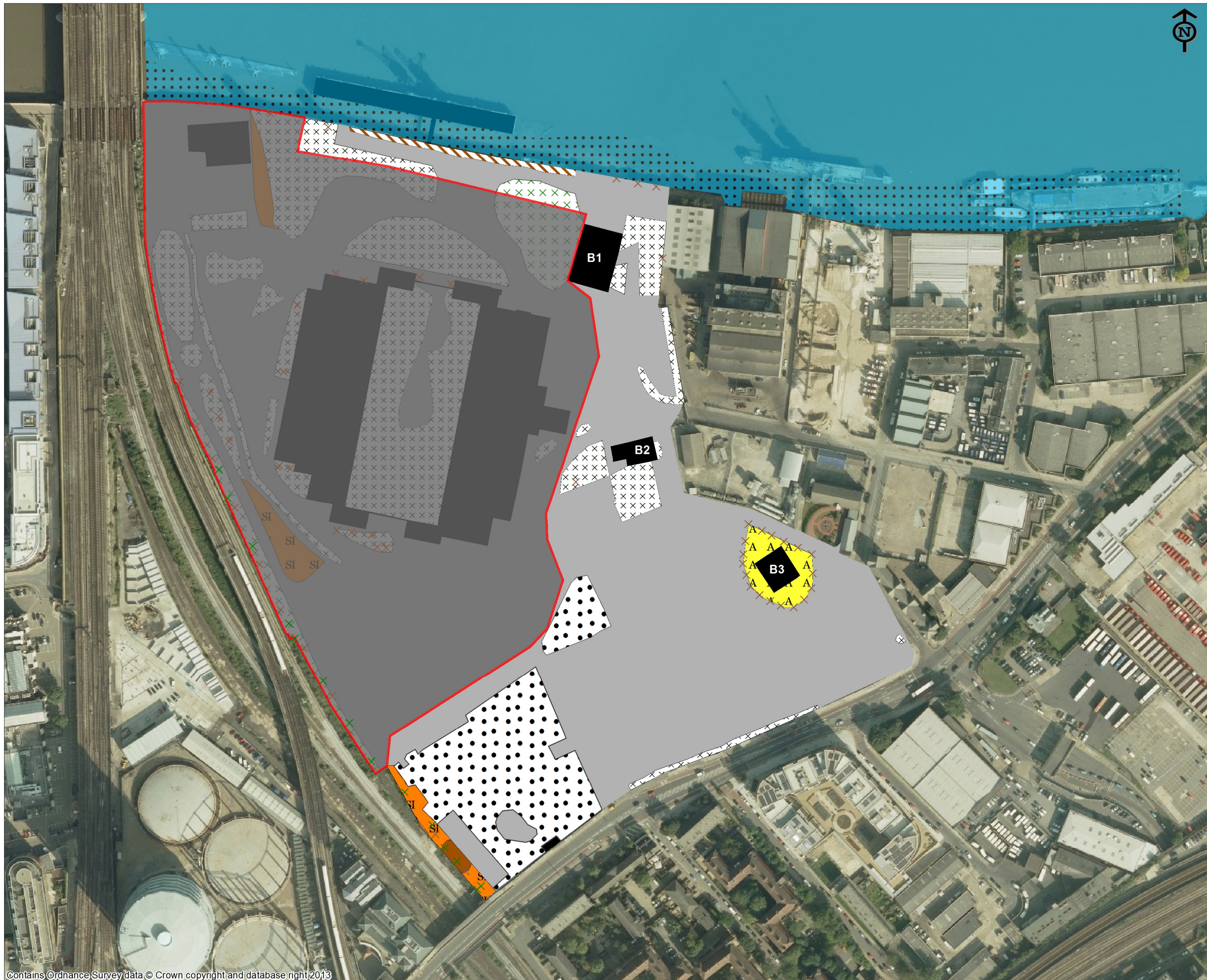
Ref. 4 London's Biodiversity Partnership <http://www.lbp.org.uk/londonpriority.html>

Ref. 5 Natural England (2010); 'Multi Agency Geographic Information for the Countryside (MAGIC)'. Available at: <http://www.magic.gov.uk/default.htm>

Ref. 6 Joint Nature Conservation Committee (JNCC) (2010); 'Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit, revised reprint 2003.' JNCC. Peterborough.

Ref. 7 Her Majesties Stationary Office (HMSO, (1981); 'Wildlife and Countryside Act 1981'

Ref. 8 HMSO (2010); 'The Conservation of Habitats and Species Regulations 2010'.



- Key**
- × Scattered Scrub (A2.2)
 - Scattered Trees (A3.1)
 - × Scattered Introduced Shrub (J1.4)
 - Orange box Unimproved Neutral Grassland (B2.1)
 - Light orange box Semi-Improved Neutral Grassland (B2.2)
 - Diagonal lines Tall Ruderal (C3.1)
 - Blue box Running Water (G2)
 - Blue dotted box Intertidal Mud / Sand (H1.1)
 - Grey box Hardstanding
 - Yellow box Amenity Grassland (J1.2)
 - White box with black dots Ephemeral / Short Perennial Vegetation (J1.3)
 - White box with black crosses Introduced Shrub (J1.4)
 - Black box Building (J3.6)
 - White box with black dots Bare Ground (J4)
 - Red line Site Boundary

Client:
Transport for London



Project:
NORTHERN LINE EXTENSION
TO BATTERSEA
TWA0 FOR TfL

Drawing:
Phase 1 Map

Suitability:
S4 **FORMAL ISSUE TO CLIENT**

Drawn by: DT Date: 04/03/2013
 Checked by: TW Date: 04/03/2013
 Approved by: HW Date: 04/03/2013
 Drawing Scale: 1:2,200 @ A3

Drawing No: **Figure 2** Revision: **01**

