ARCADIS Design & Consultancy for natural and built assets

TFL_PSF_9131 SITE INVESTIGATIONS: SMALL SITES INITIATIVE
LAND AT ARBUTHNOT LANE

Ecological Assessment

FEBRUARY 2019



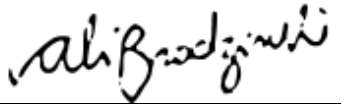
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Hyder

Land at Arbuthnot Lane

Ecological Assessment

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Report No	10024781-ARC-03-XXRP-YY-0001-01-Ecological Assessment	
Date	FEBRUARY 2019	

VERSION CONTROL

Version	Date	Author	Changes

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1 INTRODUCTION

1.1 Background

Arcadis (UK) Limited (Arcadis) was commissioned by Transport for London (TfL) to undertake a number of technical assessments to support the feasibility for potential development at Land at Arbuthnot Lane, Blendon, DA5 1HE hereafter referred to as “the Site”.

TfL is aiming to divest a number of small sites to enable prospective regeneration. The objective of the Small Sites Initiative is to provide robust and pragmatic advice that sensibly de-risks each of the sites such that unreasonable “abnormal” development costs are not included by developers.

The objective of this report is to identify potential ecological development constraints due to current ecological conditions on site as based on the findings of a desk study and ecological constraints survey. The report outlines the ecological constraints associated with the Site with regards to biodiversity legislation and policy and provides advice on mitigation and enhancement opportunities, including requirement for any further assessment or licensing, if necessary.

1.2 Site Location & Setting

The Site is located to the north of the A2 East Rochester Way and to the south of Arbuthnot Lane, in the London Borough of Bexley. The Site is centred at grid reference of TQ 48583 74350 and around the postcode of DA5 1HE.

It is approximately 0.124ha in area and is currently comprised of heavily managed amenity grassland (less than 5cm sward), scattered broadleaved and coniferous trees, scattered scrub and an intact species-poor hedge. A small patch of hardstanding is present in the western corner of the site.

The immediate surrounding residential area is characterised by detached housing. To the immediate south of the Site is the A2 main road. A golf course and areas of park and sports pitches are present nearby to the north and west.

The Site boundary for assessment is presented in Figure 2.

2 METHODOLOGY

2.1 Desk Study

Desk-based ecological information was collated from multiple sources.

The Multi-Agency Geographic Information for the Countryside (MAGIC) website[1] and other Natural England and Forestry Commission datasets were used to search for any statutory or non-statutory designated sites of nature conservation importance within a specific radius of the Site boundary, as follows:

- Special Protection Areas (SPAs) or Ramsar Sites designated for their bird interests (5km radius);
- Special Areas of Conservation (SACs) (5km radius);
- Sites of Special Scientific Interest (SSSIs) and all other statutory designated sites (2km radius);
- National Nature Reserves (NNR) (2km radius);
- Local Nature Reserves (LNR) (2km radius); and
- Woodlands registered on the Ancient Woodland Inventory (AWI) (2km radius).

Records of protected or otherwise notable species of conservation concern (that the Site has the potential to support) located 1km of the Site boundary were obtained from the following sources:

- Section 41 (S41) of the Natural Environment and Rural Communities (NERC) Act 2006) Species of Principle Importance in England[2];
- National Biodiversity Network Atlas[3]; and
- London Biodiversity Action Plan[4].

In addition, the Local Plan was reviewed for citations of any non-statutory designated sites located within a 1km radius of the Site, including Local Wildlife Sites (LWS) and the locations of Sites of Importance for Nature Conservation (SINCs) were also obtained from London Borough of Bexley. No citations for these sites were obtained other than where information was publicly accessible.

SINCs fall into three sub designations:

- Sites of Metropolitan Importance for Nature Conservation (SMINCs);
- Sites of Borough Importance for Nature Conservation (SBINCs) Grades I and II; and
- Sites of Local Importance for Nature Conservation (SLINCs).

Waterbodies located within 250m of the Site identified from OS mapping were assessed with regards to their connectivity to the Site and their potential suitability for supporting a population of breeding great crested newts (*Triturus cristatus*).

2.2 Field Survey

This survey was conducted by Rebecca Beale (Ecologist, MCIEEM) and assisted by Liam Price (Graduate Ecologist, pending CIEEM) in January 2019. Habitats were classified according to their JNCC Phase 1 habitat categories (JNCC 2010)[5] and plants named after Stace (1997)[6] and are presented on Figure 2.

2.3 Limitations and Expectations

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[1] MAGIC (2002). MAGIC Map Search. [online] Available at http://magic.defra.gov.uk [Accessed February 2019]
[2] NERC Act (2006) Section 41 Species http://www.nhm.ac.uk/our-science/data/uk-species/checklists/NHMSYS0020515439/index.html
[3] National Biodiversity Network https://nbn.org.uk/ [Accessed February 2019]
[4] London BAP (Reviewed 2007) http://www.gigl.org.uk/london-bap-priority-species/ [Accessed May 2017]
[5] Joint Nature Conservation Committee (2010), *Handbook for Phase 1 habitat survey - a technique for environmental audit*
[6] Stace, C. (1997). *New Flora of the British Isles Second Edition*. Cambridge University Press

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This report has been compiled from a number of sources, which Arcadis believes to be trustworthy. However, Arcadis is unable to guarantee the accuracy of information provided by others. The report is based on information available at the time. Consequently, there is a potential for further information to become available, which may change this report's conclusion and for which Arcadis cannot be responsible.

No access issues were encountered during the survey.

3 SURVEY RESULTS

3.1 Reporting Outline

The results of the desk study and ecological constraints survey are described below, with Sites or features of particular nature conservation interest detailed as appropriate.

Supporting information to be read in conjunction with the results and subsequent discussion are as follows:

- Figure 1: Statutory Designated Sites within 2km of the Site centre (at the end of the report);
- Figure 2: Phase 1 Habitat Map (with target notes) (at the end of the report);
- Table 1: Ecological Constraints and Mitigation Summary Table; and
- Table 2: Site photographs (at the end of the report).

Only information potentially relevant to the development of the Sites is included within the report other information is appended as follows:

- Appendix A: Desk Study Results;
- Appendix B: Bat Habitat Suitability Assessment and London Bat Population Status;
- Appendix C: Selected Legislation, Nature Conservation Status and Policy; and

3.2 Desk Study Results

Only desk study results that are potentially relevant to the Site are presented within the report. Detailed status and protections conferred by the relevant designations below are presented in Appendix A and Figure 1. The relevant Site information is summarised below.

- There is negligible potential for significant impacts to any designated sites from the development of this Site;
- There were records of Japanese Knotweed (*Fallopia japonica*) and Indian (or Himalayan) balsam (*Impatiens glandulifera*), non-native invasive species listed on Schedule 9 of the Wildlife and Countryside Act (WCA)[7] (1981, as amended), they are both also listed on the London Invasive Species Initiative (LISI)[8:] managed by the London Biodiversity Partnership;
- There were records of Serotine (*Eptesicus serotinus*), Noctule (*Nyctalus noctula*), common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) bats within 1km of the Site, which are listed on Schedule 5 of the WCA, Section 41 and London BAP species;
- There was one record of hedgehog (*Erinaceus europaeus*) within 1km of the Site which is a London BAP and Priority Species S41;
- There were records of the following bird species within 1km of the Site: house sparrow (*Passer domesticus*) which is a London BAP and Priority Species S41 and blackbird (*Turdus merula*).
- There were records of grass snake and common lizard within 1km of the Site, which are listed on Schedule 5 of the WCA, London BAP and Priority Species S41.
- There were records of fox (*Vulpes vulpes*) and grey squirrel (*Sciurus carolinensis*) within 1km of the Site which although not protected for conservation value are protected from inhumane killing or injury by the Wild Mammal Act (1996) [9]; and
- There were no relevant records of protected or notable amphibians or of badger.

3.3 Site Overview

The Site was largely dominated by heavily managed amenity grassland (less than 5cm sward), with scattered broadleaved and coniferous trees and scattered scrub. A species-poor hedge lies on the

[9] Anon The Wild Mammal Act (1996). HMSO
[9] Anon The Wild Mammal Act (1996). HMSO
[9] Anon The Wild Mammal Act (1996). HMSO

eastern boundary of the Site along the fence. A small patch of concrete hard standing is present in the south west corner of the Site. The Site was inaccessible to the public due to a fence along the northern and western edges, the A2 to the south and a hedge and fence along the boundary of the neighbouring property to the east. The Site was on a south-facing slope, descending down towards the A2. Cherry Laurel, which is an invasive non-native species listed on the London Invasive Species List (LISI) was recorded within the Intact species-poor hedge on Site

3.4 Habitats

Phase 1 habitat categories and descriptions of these habitats are presented below and the locations of these habitats are presented in Figure 2. Photographs are presented in the Site Photographs section.

- **Scattered broadleaved trees**: Eight broadleaved trees were present on the Site, roughly in two lines of four including six Silver Birch (*Betula pendula*), one Field Maple (*Acer campestre*) and one Wild Cherry (*Prunus avium*). None of the trees on Site, or those in the immediate vicinity, are protected under Tree Preservation Orders (TPOs) (as of 30/1/2019) [10]. See arboricultural report for full results.
- **Scattered coniferous trees**: Three small planted coniferous trees are present on the Site; two in the north-east and one in the south-east. All three of these were Scots Pine (*Pinus sylvestris*). See arboricultural report for full results.
- **Amenity grassland**: The Site was largely covered with heavily managed amenity grassland. Species present included Cleavers (*Galium aparine*), Common Chickweed (*Stellaria media*), Shephard's-purse (*Capsella bursa-pastoris*), Yarrow (*Achillea millefolium*), Crane's-bill sp. (*Geranium sp.*), Ribwort Plantain (*Plantago lanceolata*), Annual Meadow-grass (*Poa annua*) and Perennial Rye-grass (*Lolium perenne*).
- **Intact species-poor hedge**: An intact species-poor hedge was present on the eastern boundary of the Site. The hedge is approximately 2m wide and 2-3m tall. Firethorn (*Pyracantha coccinea*) is the dominant species in the hedge, with occasional Cherry Laurel (*Prunus laurocerasus*) which is an invasive non-native species listed on the London Invasive Species List (LISI) and Holly (*Ilex aquifolium*).
- **Scattered scrub**: Three stands of Hawthorn (*Crataegus monogyna*) were present towards the southern edge of the Site.
- **Hardstanding**: A small patch of hard standing was present in the south-west corner of the site, where the bridge starts to cross over the site.

3.5 Protected and Notable Species

The following protected or notable species have the potential to be present on the Site:

- **Nesting Birds:** There is potential for nesting birds to be utilising the trees, hedge and scrub on the Site, including species listed on the London BAP and Priority Species S41, such as house sparrow.
- **Bats:** No bat roosting potential was identified on Site;
- **Other mammals**: The Site is likely to be used by mammals, likely to be fox and hedgehog (London BAP and Priority Species S41), commuting/foraging route. The Site has limited potential to be used by badgers, due to the cover provided by the hedge and sloping aspect of the Site. However, no signs of badger were present on the Site.

The Site offered no suitable habitat for reptiles, and no ponds were present within 500m of the Site with connectivity to the Site, so the presence of great crested newts is extremely unlikely. Overall, within the Site, there was limited potential for protected or notable species.

3.6 Invasive Species

[10] London Borough of Bexley (2017) Tree Preservation Order Street Index A Available at: http://www.bexley.gov.uk/sites/bexley-cms/files/2017-11/Tree-preservation-order-street-index.pdf [Accessed 30/1/2019]

On Site, no invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded during the survey. However, Cherry Laurel, invasive non-native species listed on the London Invasive Species List LISI was recorded within the Intact species-poor hedge on Site.

4 POTENTIAL ECOLOGICAL CONSTRAINTS

The potential ecological constraints and associated further works including mitigation is briefly presented below, further detail is presented in Table 1.

4.1 Habitats / Invasive Species

The habitats on Site were assessed as having limited green infrastructure and no protected or notable floral species.

There will be some ecological benefit from the removal of non-native and invasive species listed on LISI, in this case Cherry laurel. There is no legal obligation to control the LISI species recorded on the Site or to remove it as controlled waste but it is good practice to remove them and to avoid their spread.

An ecologist and arboriculturist should contribute to the evolution of any development and landscaping design for the Sites to minimise biodiversity loss and to advise upon the provision of appropriate green infrastructure.

4.2 Protected and Notable Species

The following notable or protected species have the potential to be impacted by the works:

- **Nesting birds**: it is likely that nesting birds may utilise the Site, clearance of vegetation should be avoided during the nesting bird season (March to August inclusive) replacement nesting opportunities should be provided within any development;
- **Other Mammals**: The Site is likely to be used by mammals, likely to be fox and hedgehog (London BAP and Priority Species S41), commuting/foraging route. They are protected against inhumane killing or injury under the Wild Mammal (Protection) Act 1996. Should the site be cleared during the hedgehog hibernation season (November to March inclusive, seasonally dependant) a two staged vegetation clearance should be undertaken to prevent killing or injuring hibernating hedgehog. The implementation of permeable fencing to benefit small mammals such as hedgehog which is a priority species currently in decline is a design recommendation.

5 LEGISLATION AND KEY POLICY REQUIREMENTS

Potentially relevant Legislation and Policy are presented in Appendix C and further detail with regards to surveys and mitigation required are presented in Table 1.

5.1 Relevant Legislation

Development of the Site will require surveys and or mitigation to fulfil legislative requirements for the following protected species:

- WCA, as amended 1981, for nesting birds: works will need to be timed to avoid the nesting bird season (March to August inclusive) or supervised to prevent impacts to nesting birds;
- The Mammal Act (1996) for hedgehog: works will need to ensure that there are no inhumane killing or injury of these species if present during scrub removal.

Full details of subsequent works required are included within section 6, Table 1 below.

5.2 Relevant Policy

Elements of national and London policies and plans have the potential to be applicable to any development of the Site, these relate to:

- The safeguarding and replacement of trees to be lost to development;
- Creation and enhancement of biodiversity where possible; and
- Material consideration of S41 species in design and planning such as, house sparrow and hedgehog; and
- A plant listed on LISI, Cherry laurel, was present on the Site. While there is no legal requirement to remove or control this species it would be appropriate and beneficial to remove the stand as part of any future development.

An ecology report addressing the required design and construction mitigation for any proposed development will be required in support of planning.

5.3 Potential for Enhancement Within a Development

It is likely that biodiversity net gain will become mandatory in the near future and environmental net gain should be targeted.

The area has biodiversity and ecosystem service value including, noise and air quality attenuation, water volume and quality attenuation, and carbon sequestration. Maximising the biodiversity and ecosystem service potential of the landscape to remain or be included within the soft estate of any development is recommended.

Building integrated vegetation would also be recommended such as the consideration of a biodiversity roof, incorporation of integral bird and bat boxes, micro SuDS, the implementation of permeable fencing to benefit small mammals such as hedgehog which is a priority species currently in decline, sensitive lighting strategy, tree replacement and new tree planting where feasible. Off-site compensation should also be considered if required with the objective to achieve net gain.

6 SUMMARY OF ECOLOGICAL CONSTRAINTS AND MITIGATION REQUIRED

Table 1 Ecological Constraints and Mitigation Summary Table

Key Issues	Legislation/Policy	Assumption	Further Survey / input?	Seasonal Timing	Mitigation Required	Seasonal Timing	Programme Delay Risk	Survey/ Mitigation Cost Estimate*	Risk Rating
Biodiversity General									
Ecology Report in Support of Planning	WCA, 1981, as amended London BAP and Priority Species S41 NPPF 2018	To inform and mitigate any potential design	See below	See below	See below	See below	Early commissioning of Ecologist recommended to input into design	Report for planning £2000- 3000	Low
Nesting Birds									
All green infrastructure listed below is suitable for nesting birds. These are likely to be removed for development. • Trees; • Scrub; and • Hedges.	WCA, 1981, as amended	Removed for development / Site investigation.	No (but see mitigation recommendations)	N/A	Remove any remaining trees and hedge vegetation outside the core nesting bird season (March to August inclusive) or vegetation removal will need to be supervised by an ecological watching brief	September to February remove trees, scrub and hedges	If vegetation removal is required during the nesting bird season and nest are found by the ecological watching brief, a delay of 6 weeks is likely to be required until chicks have fledged.	Mitigation £500 - £1000 per day for ecological supervision / nesting bird check. Design and replacement of green infrastructure not costed	Low
Other Mammals: Hedgehog									
All green infrastructure listed below is suitable for hedgehogs. These are likely to be removed for development. • Introduced Shrubs	London BAP and Priority Species S41	Removed for development / Site investigation.	No (but see mitigation recommendations)	N/A	Should scrub be removed in the hibernation season (November to March inclusive) cut to 30cm above ground level to avoid potential hibernating hedgehog and check before grubbing up	If scrub is removed November to March inclusive (seasonally dependant)	None	N/A	Low
Green Infrastructure/ Trees									
Trees were present on Site and may be impacted by development:	No Tree Preservation Orders are present on site or in the immediate vicinity	Trees, scrub and hedges are likely to be removed or damaged due to development	Yes: BS 3857 2012 Tree survey	Removal of trees affected by bird nesting season (see above)	An Arboricultural Impact Assessment will be required for any design to ensure that there is protection of trees to be retained and adjacent trees and replacement of trees and green infrastructure implemented via an Arboricultural	N/A	None	Survey: Already undertaken Mitigation: Arboricultural Impact Assessment £1500- 2500 Bespoke Arboricultural Method Statement £1,500 £500- 1000 per day for Site supervision Design and replacement of green infrastructure not costed.	Low

Key Issues	Legislation/Policy	Assumption	Further Survey / input?	Seasonal Timing	Mitigation Required	Seasonal Timing	Programme Delay Risk	Survey/ Mitigation Cost Estimate*	Risk Rating
					Method Statement and Landscape Strategy.				
Non-native Invasive species									
Cherry laurel	London Invasive Species Index LISI	Development could cause these species to spread	No	N/A	It would be good practice to remove this species during subsequent development and to implement mitigation to ensure they are not spread	N/A	N/A	N/A Can be undertaken with vegetation clearance for development.	Low

Cost estimates only, actual costs would depend on the procurement, design and programme of any subsequent development and do not include costs any actual green infrastructure replacement or associated protected species licencing

7 CONCLUSIONS

There are no likely significant ecological constraints with regards to the development of this Site.

No Statutory or non-statutory designated sites (including ancient woodlands or woodlands listed on the Ancient Woodland Inventory (AWI)) identified within the vicinity of the Site have the potential to be significantly impacted by development on the Site.

Constraints are listed below:

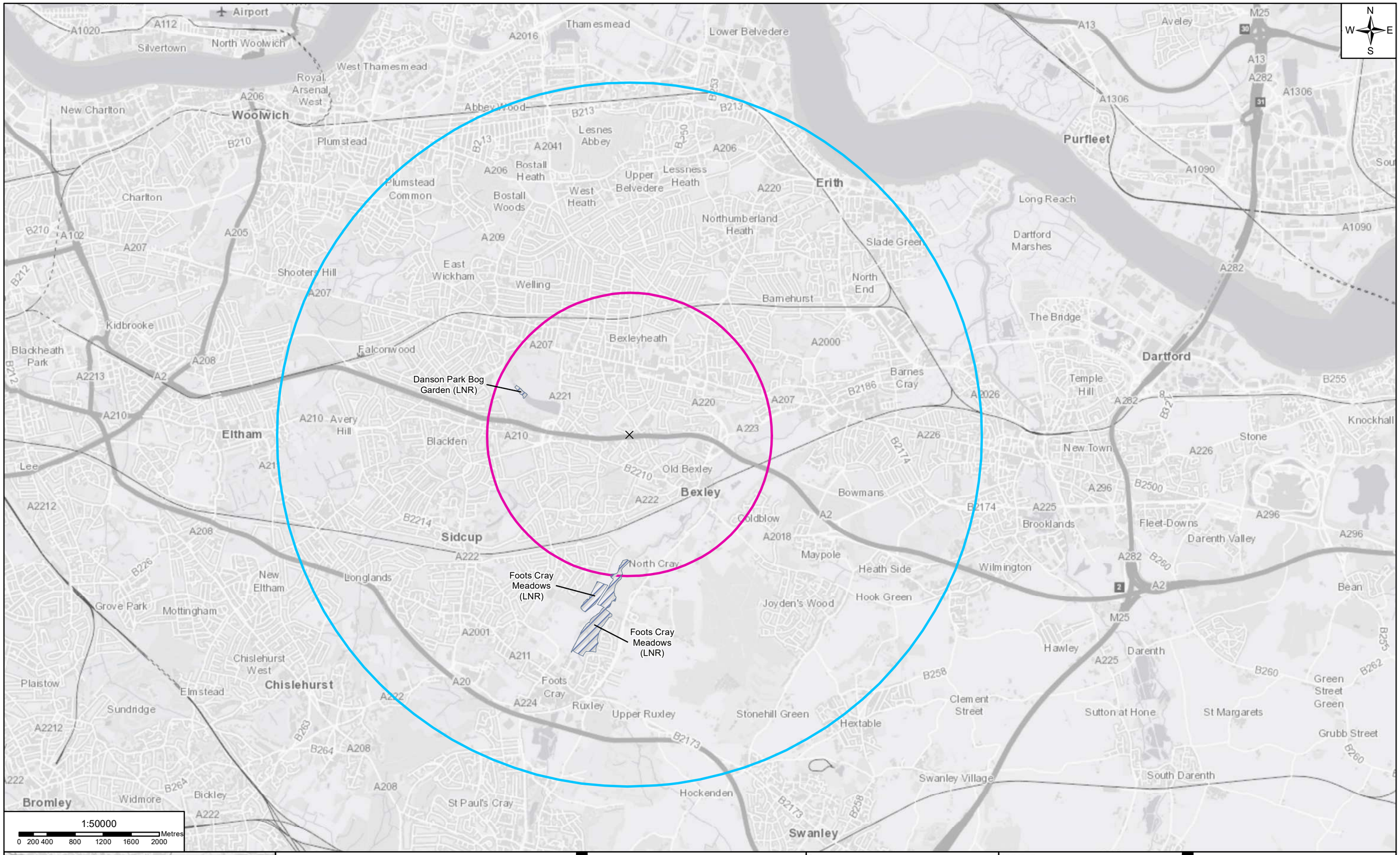
- The Site was dominated by scattered trees, scrub and a hedge. The habitats on Site were generally un-diverse due to the lack of positive management. However, these habitats have value in terms of green infrastructure, likely performing important ecosystem services (such as water quality and volume attenuation and air quality attenuation etc.).
- There is potential for nesting birds to be utilising the trees, scrub and hedges on the Site, including species listed on S41 and the London BAP such as house sparrow. Removal of suitable vegetation on Site will need to be conducted outside of the bird nesting season (March – August inclusive) or under an ecological watching brief.
- There is potential for fox and hedgehogs which is a London BAP and Priority Species S41 (also protected from inhumane killing or injury) to use the Site. Employ a two-stage removal of scrub suitable for hibernating hedgehogs should this be required during the hibernation season (November to March seasonally dependant).
- There will be some ecological benefit from the removal of non-native and invasive species on LISI, which is likely to occur when the Site is cleared for any construction. There is no legal obligation to control the LISI species (Cherry laurel) recorded on the Site or to remove it as controlled waste but it is good practice to remove them and to avoid their spread.
- Trees and other vegetation should be replaced within any proposed soft landscaping and these designs should be evolved in liaison with an ecologist and arboriculturist. In addition, rain gardens, biodiversity roofs and other green infrastructure should be considered within any development.
- There are also opportunities for enhancements for London BAP species. Bird boxes for sparrows would be a valuable enhancement, along with bat roosting boxes. Implementation permeable fencing would be of benefit to small mammals, such as hedgehog, which is a priority species currently in decline.

SITE PHOTOGRAPHS

Table 2: Land at Arbuthnot Lane Site Photographs

Land at Arbuthnot Lane Site photographs	
	
Photograph1: View of south-west corner of the Site.	Photograph 2: View of the south-east corner of the Site.
	
Photograph 3: Two Scots Pine trees in the north-east corner of the Site.	Photograph 4: Hedge along the eastern edge of the Site.
	
Photograph 5: Cherry Laurel in the northern edge of the hedge.	Photograph 6: View of the amenity grassland on Site.

FIGURE 1: STATUTORY DESIGNATED SITES WITHIN 2KM OF THE SITE CENTRE





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REV	Date	Description	Drawn	Check	Approv
01	21/02/19	Initial Issue	YG	AB	MG

LEGEND

- Site Centre Point
- 2km buffer (National Statutory Designated Sites)
- 5km buffer (International Statutory Designated Sites)
- Local Nature Reserve (within 2km)

Client

Transport for London

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Suitability Description: PRELIMINARY/CONFIDENTIAL

Designed	L.Price	Date 21FEB19	Signed
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Approved	M. Girvan	Date 21FEB19	Signed
Scale:	1:50000	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	S2	Project Number:	10024781

PROJECT:

TFL - SMALL SITES PROJECT DUE DILIGENCE

TITLE:

Land at Arbuthnot Lane International and National Designated Sites

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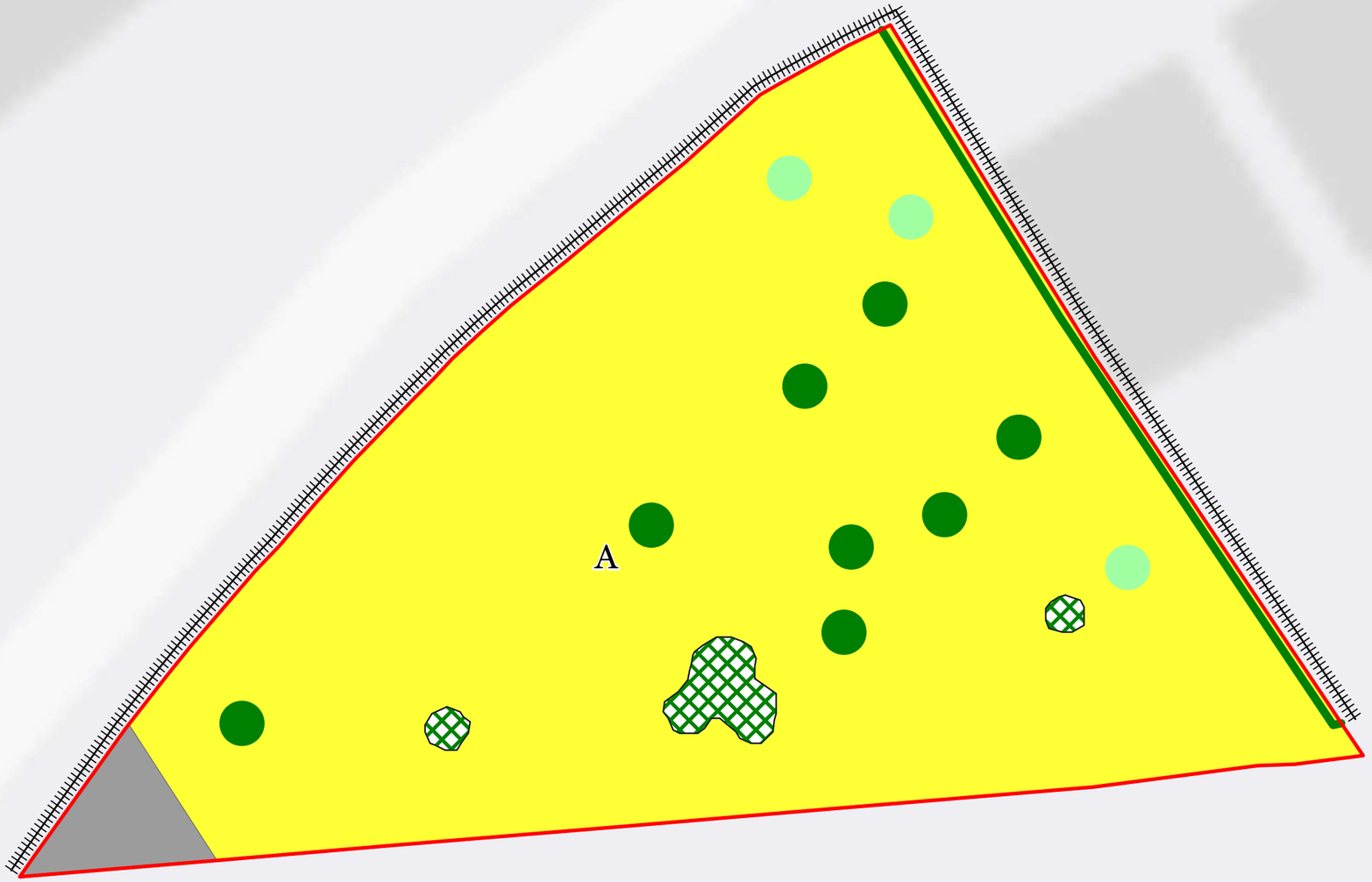
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FIGURE 2: PHASE 1 HABITAT MAP (WITH TARGET NOTES)



N
W E
S

1:250
0 1 2 4 6 8 10 Metres



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REV	Date	Description	Drawn	Check	Approv
01	21/02/19	Initial Issue	YG	AB	MG

LEGEND

- Site Boundary
- Scattered Broadleaved Trees
- Scattered Coniferous Trees
- Intact Species-Poor Hedge
- Scattered Scrub
- A Amenity Grassland
- Hardstanding
- Fence

Client

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Suitability Description:
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Checked	A. Brodzinski	Date 21FEB19	Signed
Approved	M. Girvan	Date 21FEB19	Signed
Scale:	1:250	Datum:	AOD
Original Size:	A3	Grid:	OS
Suitability Code:	S2	Project Number:	10024781

PROJECT:
TFL - SMALL SITES PROJECT DUE DILIGENCE

TITLE:
Land at Arbuthnot Lane - Phase 1 Map

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Appendix A: Desk Study Review

Statutory Designated Sites

The desk study found no Natura 2000 sites (SPAs, SACs, Ramsar) within 5km of the site.

Within 2km of the Site are the following Statutory Designated Sites:

- Danson Park Bog Garden LNR, which contains a large lake, bog garden and formal garden; and
- Foots Cray Meadows LNR, which contains ancient woodland, the river Cray and wildflower margins.

Further detail is presented in Table A1. It was assessed that there was negligible potential for significant impacts to this Site from any development on the Site.

Non-Statutory Designated Sites

The desk study found the following non-statutory designated sites within 1km of the Site:

Sites of Borough Importance for Nature Conservation:

- Bexleyheath Golf Course;
- River Shuttle;
- Bexley Park Woods; and
- The Warren.

Sites of Local Importance for Nature Conservation:

- A2 Rochester Way East Embankment.

There is also a 'strategic green corridor' running through the Borough of Bexley which is located approximately 380m south and west of the Site.

It was assessed that there was negligible potential for significant impacts to these Sites from any development on the Site.

Woodlands registered on the Ancient Woodland Inventory (AWI)

- Three woodlands registered on the Ancient Woodland Inventory were found within 2km of the Site:Bexley Woods
- Joydens Wood
- Churchfield Wood

Further detail is presented in Table A2. It was assessed that there was negligible potential for significant impacts to this woodland from any development on the Site.

Statutory Designated Sites

Table A:1: Statutory Designated Sites

Site Name	Designation	Size (ha)	Distance (m)	Direction	Description
Local Nature Reserve - LNR					
Big Wood and Little Wood LNR	LNR	8.29	375m	South	Twin patches of woodland known as Big Wood and Little Wood. They are two of the few surviving remnants of the ancient Woodland that covered North London. As a relatively isolated patch of woodland, it attracts large numbers of birds now rarely seen in the rest of London, particularly owls and the Green Woodpecker.

Site Name	Designation	Size (ha)	Distance (m)	Direction	Description
Danson Park Bog Garden	LNR	1.07	1545	North-west	A large lake with a bog garden at its western end which, is part of the lake. Formal gardens near the car park and a rock garden with pools at the western end.
Foots Cray Meadows	LNR	30.32	1768	South	Foots Cray Meadows provide a wealth of diverse habitats for flora and fauna. It consists of a rolling landscape, ancient woodland, the River Cray and its adjacent woodlands and wildflower margins.

Non-Statutory Designated Sites

Table A:2: Non-Statutory Designated Sites

Site Name	Designation	Size (ha)	Distance (m)	Direction	Description
Ancient Woodland					
Bexley Woods	Ancient & Semi-Natural Woodland	11.25	494	South	Unknown
Joydens Wood	Ancient Replanted Woodland	113.61	1965	South-east	Unknown
Churchfield Wood	Ancient & Semi-Natural Woodland	4.96	1782	South-east	Unknown
Site of Importance for Nature Conservation - SINC					
Bexleyheath Golf Course;	SBINC	11.85	230	North-west	Designated due to heathland and uncommon acid grassland plants.
River Shuttle;	SBINC	Unknown	320	South	Unknown
Bexley Park Woods;	SBINC	11.42	465	South	This area supports plants rare in the borough, such as Sanicle and Common Cow-wheat. A variety of birds are supported, including Kingfisher, Nuthatch and Treecreeper. Ringlet butterfly and Purple Hair-streaks are also present.
The Warren.	SBINC	4.52	545	East	A small area of woodland dominated by oak and elm, with some acid grassland.

Site Name	Designation	Size (ha)	Distance (m)	Direction	Description
A2 Rochester Way East Embankment	SLINC	1.38	460	East	This broad embankment on the north side of the A2 contains a mix of wildlife habitats. The rough grassland and scrub has been supplemented with plantings of native and ornamental trees. These are now maturing towards woodland. The site supports suitable habitat for breeding garden birds and invertebrates.

Overview of Protected, Notable and Invasive Species in London

This section of this report outlines the status of protected and notable species in London. The status of these species on the Site is fully discussed in section 3. Relevant conservation status and legislation is presented in Appendix D and E.

Non-native invasive species in Greater London

London is an extremely urbanised area and is a major international port for both people and goods, this in addition to its climate and major levels of construction has encouraged the spread of a number of non-native invasive species that are becoming pests. Therefore, in addition to those species listed on Schedule 9 of the Wildlife and Countryside Act (WCA) (1981, as amended) there is a London Species Initiative (LISI)[8:] Managed by the London Biodiversity Partnership, which lists non-native invasive species that should be controlled in London. Species potentially relevant to the Site include those presented in A3.

Table A:3: Potential Schedule 9 (WCA 1981, as amended) or LISI species

Common Name	English Name	Status
Japanese Knotweed	*Fallopia japonica*	Schedule 9 and LISI
Cotoneaster (numerous)	*Cotoneaster* spp.	Schedule 9 and LISI
Rhododendron	*Rhododendron ponticum*	Schedule 9 and LISI
Indian (or Himalayan balsalm)	*Impatiens glandulifera*	Schedule 9 and LISI
Virginia creeper	*Parthenocissus quinquefolia*	Schedule 9
Montbretia	*Crocosmia x crocosmiiflora*	LISI
Cherry Laurel	*Prunus laurocerasus*	LISI
False acacia	*Robinia pseudoacacia*	LISI
Green alkanet	*Pentaglottis sempervirens*	LISI
Butterfly-bush	*Buddleia davidii*	LISI
Snowberry	*Symphoricarpos albus*	LISI
Tree of heaven	*Ailanthus altissima*	LISI
Holm oak	*Quercus ilex*	LISI
Passion flower	*Passiflora caerulea*	LISI
Spanish bluebell	*Hyacinthoides hispanica & H. x massartiana*	LISI
Holm oak	*Quercus ilex*	LISI

Bats in Greater London

From previous Arcadis work in London and from data from the London Bat Group the most likely bats species to be present are common and soprano pipistrelle (*Pipistrellus pipistrellus* and *P. pygmaeus*) which are by far the more frequent, followed by Daubenton's (*Myotis daubentoni* in the vicinity of open water) noctule (*Nyctalus noctula*) and brown long-eared (*Plecotus auritus*). These are all London BAP species and S41 species with the exception of Daubenton's and common pipistrelle. Full details of the conservation status of these species and the results from the London Bat Group Species Action Plan Audit are presented in Appendix B Table B2.

In general, every borough will have bats present, as even in the inner boroughs there are usually some areas of suitable habitat that can provide feeding habitat for small numbers of common and light tolerant bat species such as soprano and common pipistrelles. In general, the outer boroughs with larger areas of more suitable habitat should be expected to have higher numbers of bats and a greater diversity of species.

Birds in Greater London

There are a number of bird species that although relatively common are in decline and have been highlighted S41 or London Priority BAP species and/or birds of conservation concern that have the potential to be present (Table 2).

Table A:4*:* *Birds of conservation concern associated with London*

Common Name	English Name	Status	Typical London habitats
Black redstart	*Phoenicurus ochrurus*	L	Traditionally found on brownfield sites around the built environment in proximity to standing or tidal Thames water
Dunnock	*Prunella modularis*	S41:L:	Associated with dense scrub and trees in private gardens and pocket parks
Grey heron	*Ardea cinerea*	L	associated with tidal Thames and standing water
House sparrow	*Passer domesticus*	S41:L:R	Associated with dense scrub and trees in private gardens and pocket parks traditionally a species associated with nesting in buildings
Peregrine	*Falco peregrinus*	L	Tidal Thames and the built environment using tall buildings for roosting and nesting and foraging on other birds particularly pigeons
Song thrush	*Turdus philomelos*	S41:L:R	Associated with dense scrub and trees in private gardens and pocket parks
Starling	*Sturnus vulgaris*	S41:L:R	Built environment
Tree sparrow	*Passer montanus*	S41:L:R	Associated with dense scrub and trees in private gardens and pocket parks

Section 41 = S41: London BAP = L: R = Birds of Conservation Concern Red List

Reptiles in Greater London

Records from SARG (Surrey Amphibian and Reptile Group) and the London Biodiversity Action Plan show that the presence of European Protected Species of reptile in the London area is generally very unlikely. Common lizard (*Zootoca vivipara*) and Slow worm (*Anguis fragilis*) are the most likely reptiles to be present followed by Grass snake (*Natrix natrix*) with Adder (*Vipera berus*) being unlikely to be present these are all S41 and London BAP species.

Badger in Greater London

Badger is a London BAP species and can be found using private gardens, woodlands and parklands across London.

Amphibians including Great Crested Newts (GCN) in Greater London

GCN are S41 and London BAP species, that while uncommon are found breeding in ponds associated with private gardens, from data available from Froglife (2012), 71 Sites across Greater London were surveyed where historical GCN records were identified, of none of these sites were located within the London Borough of Barnet [11]. Of the other amphibians that are London BAP species Common frog (*Rana temporaria*), palmate newt (*Triturus helveticus*) and Common toad (*Bufo bufo*), common toad is also a S41 species

Other Potentially Relevant S41 and London BAP species

There are a number of other species that have the potential to be relevant to the Site:

- Black poplar (*Populus nigra*);
- Mistletoe (*Viscum album*);
- Hedgehog (*Erinaceus europaeus*); and
- Stag beetle (*Lucanus cervus*), there was an NBN record within 500m of the Site.

Table A:5: Designated sites descriptions

Designation	Description
Special Areas of Conservation (SAC) Special Protected Areas (SPAs)	Sites designated under European law and are the most important sites for wildlife in the UK, along with Special Protected Areas (SPAs). SACs are designated under the European Habitats Directive (Council Directive 92/43/EEC). Both the Habitats and Birds Directives provide for the creation of a network of protected areas across the EU, to be known as 'Natura 2000'. The designations aim to conserve important or threatened species and habitats and provide them with increased protection and management
National Nature Reserve (NNR)	Statutory reserves established for the nation under the Wildlife and Countryside Act, 1981. NNRs may be owned by a relevant national body, e.g. Natural England, or by established agreement; a few are owned and managed by non-statutory bodies. NNRs cover a selection of the most important sites for nature conservation in the UK.
Sites of Special Scientific Interest (SSSI)	Are areas notified under the Wildlife and Countryside Act 1981 by Natural England as being of special interest for nature conservation. SSSI notification forms the statutory bedrock for site protection. Biological SSSIs form a national network of wildlife sites, with each site being of national significance for its nature conservation value. Consultation and some form of agreement with the national statutory conservation agency is mandatory before any listed, potentially damaging development or change in land use can be carried out
Local nature reserves (LNR)	These are land owned, leased or managed by Local Authorities and designated under the National Parks and Access to the Countryside Act. These are sites of some nature conservation value managed for educational objectives. In some cases it is managed by a non-statutory body (e.g. the London Wildlife Trust). Local Authorities have the power to pass bylaws controlling (e.g.) access, special protection measures.

[11] Capital Great Crested Newts Revisited (2012). Project report – Public Web Edition

Designation	Description
Sites of Metropolitan Importance for Nature Conservation (SMINCs)	These are sites that contain the best examples of London's habitats. These sites are of strategic significance and are therefore of the highest priority against damage or loss
Sites of Borough Importance for Nature Conservation (SBINCs) Grades I and II	Sites of Borough Importance for Nature Conservation (SBINCs) Grades I and II are important in the context of the borough. The nature conservation quality of these sites varies and so these sites are graded as I or II in relation to their nature conservation potential.
Sites of Local Importance for Nature Conservation (SINCs)	These are sites of particular importance to people nearby (such as residents and schools). Local sites are particularly important in areas otherwise deficient in nearby wildlife sites.

Appendix B: Bat Habitat Suitability and London Population Status

Table B: 1 BCT (2016) – Habitat Suitability Criteria

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions[a] and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree- lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Table B: 2 *Bat species status in London from the London Bat Species Action Plan Audit*

Common Name	Latin Name	UK Status	London Status	Notes
Greater horseshoe bat	*Rhinolophus ferrumequinum*	Endangered BAP Priority	Extinct	Last Greater London record from Oxleas Wood in 1953.
Lesser horseshoe bat	*Rhinolophus hipposideros*	Endangered BAP Priority	Extinct	Last Greater London record from Abbey Wood (Woolwich) in 1952-3.
Whiskered bat	*Myotis mystacinus*	Vulnerable	Rare	Due to difficulty in separation, these are considered together. Occur rarely and in low numbers in outer London Boroughs such as Hillingdon, Richmond, Bexley and Bromley. One current known (winter) roost only.
Brandt's bat	*Myotis brandtii*	Vulnerable	Rare	
Natterer's bat	*Myotis nattereri*	Vulnerable	Scarce	Still relatively few records in Greater London. Most central locations are Highgate Wood and Hampstead Heath, otherwise Richmond and Hounslow and occasionally other outer London Boroughs. 8 current known roosts (mostly winter).
Daubenton's bat	*Myotis daubentoni*	Not Threatened	Locally frequent but declining	Relatively widespread and strongly associated with ponds, lakes & rivers. Occasional summer roosts have been found in trees on Wimbledon Common and in Ruislip Woods. Contrary to the national trend, this species is apparently declining in London and its sensitivity to increasing ambient light levels is a possible reason. 4 current known winter roosts.
Serotine	*Eptesicus serotinus*	Vulnerable	Rare; has declined	Serotines are found in outer London Boroughs, especially Bromley, Havering, Sutton and Richmond. 2 current known summer roosts, in Bromley and Teddington.
Noctule	*Nyctalus noctula*	Vulnerable; declining BAP Priority	Widespread but declining	The status of this large, wide-ranging bat is difficult to assess, but the past two decades have seen a rapid decline in the species and this mirrors the national trend. An exclusively tree-roosting bat; current known roosts number <10 London-wide.
Leisler's bat	*Nyctalus leisleri*	Vulnerable	Scarce	Leisler's bat has been recorded infrequently in London area, yet sightings have doubled in the last three years. New foraging sites for the species include the Barnes area, Wandsworth Common and Brent Reservoir. 3 current known roosts (Haringey, Bromley and Bexley).

Common Name	Latin Name	UK Status	London Status	Notes
Common pipistrelle	*Pipistrellus pipistrellus*	Not Threatened	Common	A widespread species, the common pipistrelle is believed to occur in all London boroughs. Roosts are still discovered relatively infrequently, however.
Soprano pipistrelle	*Pipistrellus pygmaeus*	BAP Priority	Common	Also widespread and probably London's commonest bat. Apparently more associated with wetland habitats than its close relative, *P. pipistrellus*. Known roosts currently number 15-25?, but many more pass undetected.
Nathusius's pipistrelle	*Pipistrellus nathusii*	Rare	Rare	Only recently confirmed as a UK breeding species. Detector records from an increasing list of sites include Lesnes Abbey Woods, Chislehurst Ponds and the Wetland Centre at Barnes. 1 known current roost site in bat boxes in Hounslow.
Brown long-eared bat	*Plecotus auritus*	Declining BAP Priority	Scarce	Brown long-eared bats are fairly secretive and may be under-recorded in Greater London, although reasons for the national decline are also likely to affect London's population. Roosts have been found in Bexley, Bromley, Hillingdon, Wandsworth, Kensington & Chelsea, Barnet, and Richmond.

NB: This audit is based on data from the London Bat Project collected in the mid-1980s, as well as that collected since by the London Bat Group and is therefore not systematic. This audit is the best possible understanding of the status of bats in London that can currently be realised by the London Bat Group.

Appendix C: Selected Legislation, Nature Conservation Status and Policy

Legislation

Table C: 1 Legislation Summary

Receptor	Legislation
Nesting Birds	The legislation relevant to the potential ecological constraints on site associated with nesting birds. All wild birds, their nests and eggs are protected under the Wildlife and Countryside Act 1981 (as amended)**Error! Bookmark not defined.**. Section 1 of the Act makes it an o ffence to: • intentionally kill, injure or take any wild bird; • intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; or • intentionally take or destroy an egg of any wild bird. It is also an offence to: • intentionally disturb any wild bird included in Schedule 1 of the Act while it is building a nest or is in, on or near a nest containing eggs or young; or • disturb dependent young of such a bird. • Species listed on Schedule 1 include the black redstart, barn owl (*Tyto alba*), Cetti's warbler (*Cettia cetti*) and kingfisher (*Alcedo atthis*). There is no potential for Schedule 1 birds to be nesting on Site, the legislation regarding common nesting birds will be complied with due to the precautionary mitigation previously stated.
Badgers	Badgers are protected from inhumane killing or injury under Badgers Act (1992)[12], this also protects their setts from damage and prohibits blocking access to their setts.
Bats	The legislation relevant to the constraint identified associated with bats. Bats are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010 (as amended).. Bats are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are subject to the provisions of Section 9 of the Act, which make it an offence to: • intentionally or recklessly disturb a wild animal listed on Schedule 5 whilst it is occupying a structure or place which it uses for shelter or protection; • intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a wild animal listed on Schedule 5; • sell, offer or expose for sale, or to possess or transport for sale alive or dead wild animal listed on Schedule 5 or any part of or anything derived from a wild animal listed on Schedule 5. Bats are also listed on Schedule 2 (European protected species of animals) of the Conservation of Habitats and Species Regulations 2010 (as amended) and are subject to the provisions of Regulation 41 which makes it an offence to: • deliberately capture, injure or kill any wild animal of a European protected species; • deliberately disturb wild animals of any such species (where disturbance is likely to impair their ability to survive, breed or reproduce, rear or nurture their young; or to

[12] Protection of Badgers Act 1992 (as amended)

Receptor	Legislation
	hibernate or migrate; or to affect significantly the local distribution or abundance of the species); • damage or destroy a breeding Site or resting place of such an animal; or • be in possession of, control, transport, sell or exchange, or offer for sale or exchange any live or dead animal of such a species or any part of a wild animal or anything derived from an animal or any part of an animal of such a species.
Great Crested Newts	Great crested newts are a European Protected Species (EPS), listed on Annex II and IV of the EEC Directive on the Conservation of Natural Habitats and Wild Fauna and Flora, receiving protection under The Conservation of Habitats and Species Regulations 2010. This species is also afforded full protection under the Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (WCA 1981). Under such legislation it is an offence to: • Intentionally or recklessly kill, injure or take a great crested newt; • Possess or control any live or dead specimen or anything derived from a great crested newt; • Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt; and • Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.
Reptiles	The relevant legislation relevant to the constraint identified associated with reptiles All native British reptile species are protected under the Wildlife and Countryside Act 1981 (as amended). Reptiles are listed under Schedule 5 of the Act. The four more widespread species including common lizard, slow worm, adder and grass snake are subject to some of the provisions of Section 9 of the Act, which make it an offence to: * • intentionally kill or injure a reptile; or * sell, offer or expose for sale, or • to possess or transport for sale alive or dead reptile or any part of, or anything derived from, a reptile.
Other Mammals	Other mammals not protected by their own legislation are protected by the Mammal Act (1996). The Act makes provision for the protection of wild mammals from certain cruel acts. An offence is committed if any person mutilates, kicks, beats, nails, or otherwise impales, stabs, burns, stones, crushes, drowns, drags, or asphyxiates any wild mammal with intent to inflict unnecessary suffering.
Non Native Invasive Species	Numerous species are listed on Schedule 9 (of the Wildlife and Countryside Act 1981, as amended) whereby it is an offence to grow or to cause this species to grow in the wild. A species on Schedule 9 that commonly occurs in London is Japanese Knotweed (*Fallopia japonica*) which is also covered by the Environmental Protection Act (EPA) 1990 which designates this as a controlled waste.

Nature Conservation Status

- **Birds of Conservation Concern (BOCC) (2015)**

The UK's leading bird conservation organisations worked together to produce The Population Status of Birds in the UK: Birds of Conservation Concern Four (BoCC).

Commonly referred to as the UK Red List for birds, this is the fourth review of the status of birds in the UK, Channel Islands and Isle of Man, and updates the last assessment in 2009. Using standardised criteria, 244 species with breeding, passage or wintering populations in the UK were assessed by experts from a range of bird NGOs and assigned to the Red, Amber or Green lists of conservation concern.

Table C: 2 Bird Population Status Criteria for Birds of Conservation Concern in the UK

Criteria	Status
Red list criteria	Globally threatened Historical population decline in UK during 1800–1995 Rapid (> or =50%) decline in UK breeding population over last 25 years Rapid (> or =50%) contraction of UK breeding range over last 25 years
Amber list criteria	Historical population decline during 1800–1995, but recovering; population size has more than doubled over last 25 years Moderate (25-49%) decline in UK breeding population over last 25 years Moderate (25-49%) contraction of UK breeding range over last 25 years Moderate (25-49%) decline in UK non-breeding population over last 25 years Species with unfavourable conservation status in Europe, termed Species of European Conservation Concern (SPEC) Five-year mean of 1–300 breeding pairs in UK > or =50% of UK breeding population in 10 or fewer sites, but not rare breeders > or =50% of UK non-breeding population in 10 or fewer sites > or =20% of European breeding population in UK > or =20% of northwest European (wildfowl), East Atlantic Flyway (waders) or European (others) non-breeding populations in UK
Green list	No identified threat to the population's status

Relevant Policy

National

The Site survey, assessment and recommended mitigation ensure compliance with the following policies, any additional enhancement measures would further comply with these policies:

- **The National Planning Policy Framework** (NPPF 2018)[13] The National Planning Policy Framework (2018): The NPPF, sets out how the planning system should protect and enhance nature conservation interests. Section 15 is concerned with conserving and enhancing the natural environment (paragraphs 170 to 177).
  - Planning policies and decisions should contribute to and enhance the natural and local environment by:
  - protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
  - recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
  - minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

  To protect and enhance biodiversity and geodiversity, plans should
  - Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity56; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
  - promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity and take opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.
  - When determining planning applications, local planning authorities should apply the following principles:
  - development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.
- **The Natural Environment and Rural Communities** (NERC) Act 2006[14] places a duty upon public bodies to consider S41 lists flora, fauna and habitats (previously UK BAP habitats and species) as a material consideration in planning and to consider enhancement of biodiversity.
- **Biodiversity 2020**: A strategy for England's Wildlife and Ecosystem Services[15] includes a list of Habitats of Principal Importance in England (HPIEs) and Species of Principal Importance in England (SPIEs). These were previously included as Priority Habitats and Priority Species in the UK BAP.
- **25 Year Plan for the Environment (2018):** The underlying case for the valuation of ecosystem services is that it will contribute towards better decision-making, fully taking into account the costs and benefits of development to the natural environment. In its White Paper "The Natural Choice: securing the value of nature (HMG, 2011)[16]", and repeated in successive manifestos, the UK Government has stated it wishes to be "the first generation to leave the natural environment of England in a better state than it inherited…". The Natural Capital Committee (NCC, 2016) was set up to advise on how to deliver this objective, and the natural capital approach (which is based on

[13] HMSO (2018). The policy framework for agriculture after the UK leaves EU. Debate Pack Number CDP 2018/0024.
[14] Anon (2006) The Natural Environment and Rural Communities Act HMSO, London
[15] Department for Environment, Food and Rural Affairs (2011) *Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services*
[16] HM Government. (2011). The Natural Choice: securing the value of nature. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228842/8082.pdf

the concept of valuing services delivered by the environment) is the key mechanism proposed to achieve this. The advice of the NCC has been central to the Government's 25-Year Plan to Improve the Environment, published in January 2018 [17], whereby it has been acknowledged that protecting and growing natural capital is a vital component for economic success. It is also important to note that the application of this approach is not related to the total value of ecosystems but, rather, to valuing changes in ecosystem services.

London

- **London Invasive Species Initiative (LISI)**: Managed by the London Biodiversity Partnership, LISI lists non-native invasive species that should be controlled in London. Species relevant to the Scheme include Japanese Knotweed and Butterfly-bush.
- **London Biodiversity Action Plan (BAP)[18]:** Managed by the London Biodiversity Partnership (2006), the London BAP sets out priority habitats and species for the city. London BAP habitats relevant to the Scheme include reed beds, standing water and wasteland.
- **The London Plan (2011) Strategic Policy 7.19 Biodiversity and Access to Nature and Policy 7.21 Trees and woodlands) (updated with the Minor Alterations to the London Plan 2016)[19]:** Regional planning policy for London is presented in the London Plan: Spatial Development Strategy for Greater London. It contains various policies with regard to nature conservation in London, which include commitments to protect, enhance, create, promote, expand and manage the extent and quality of green infrastructure and biodiversity and to increase access to nature, the following elements of SP 7 are as follows:
    - **Strategic Policy 7.19 Biodiversity and Access to Nature and Policy:**
        - A) The Mayor will work with all relevant partners to ensure a proactive approach to the protection, enhancement, creation, promotion and management of biodiversity in support of the Mayor's Biodiversity Strategy.
        - B) Any proposals promoted or brought forward by the London Plan will not adversely affect the integrity of any European site of nature conservation importance.
        - C) Development Proposals should:
            - a) wherever possible, make a positive contribution to the protection, enhancement, creation and management of biodiversity
            - b) prioritise assisting in achieving targets in biodiversity action plans (BAPs), set out in Table 7.3, and/or improving access to nature in areas deficient in accessible wildlife sites
            - c) not adversely affect the integrity of European sites and be resisted where they have significant adverse impact on European or nationally designated sites or on the population or conservation status of a protected species or a priority species or habitat identified in a UK, London or appropriate regional BAP or borough BAP.
        - D) On Sites of Importance for Nature Conservation development proposals should:
            - a) give the highest protection to sites with existing or proposed international designations1 (SACs, SPAs, Ramsar sites) and national designations2 (SSSIs, NNRs) in line with the relevant EU and UK guidance and regulations
            - b) give strong protection to sites of metropolitan importance for nature conservation (SMIs). These are sites jointly identified by the Mayor and boroughs as having strategic nature conservation importance
            - c) give sites of borough and local importance for nature conservation the level of protection commensurate with their importance.
        - E) When considering proposals that would affect directly, indirectly or cumulatively a site of recognised nature conservation interest, the following hierarchy will apply:
            - 1 avoid adverse impact to the biodiversity interest

[17] HM Government (2018) A Green Future: Our 25 Year Plan to Improve the Environment. January 2018 Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/673203/25-year-environment-plan.pdf
[18] City of London (2009). *London Biodiversity Action Plan 2010 – 2015*
[19] Greater London Authority (2011) *The London Plan Strategic Policy 7.19 Biodiversity and Access to Nature and Policy 7.21 Trees and woodlands) (updated with the Minor Alterations to the London Plan 2016)*

        - 2 minimize impact and seek mitigation
        - 3 only in exceptional cases where the benefits of the proposal clearly outweigh the biodiversity impacts, seek appropriate compensation.
    - F) In their LDFs, Boroughs should:
        - a use the procedures in the Mayor's Biodiversity Strategy to identify and secure the appropriate management of sites of borough and local importance for nature conservation in consultation with the London Wildlife Sites Board.
        - b identify areas deficient in accessible wildlife sites and seek opportunities to address them
        - c include policies and proposals for the protection of protected/priority species and habitats and the enhancement of their populations and their extent via appropriate BAP targets
        - d ensure sites of European or National Nature Conservation Importance are clearly identified
        - e identify and protect and enhance corridors of movement, such as green corridors, that are of strategic importance in enabling species to colonise, re-colonise and move between sites.
- **Strategic Policy 7.21 Trees and Woodlands:**
    - A) Trees and woodlands should be protected, maintained and enhanced, following the guidance of the London Tree and Woodland Framework (or any successor strategy). In collaboration with the Forestry Commission the Mayor has produced supplementary guidance on Tree Strategies to guide each borough's production of a Tree Strategy covering the audit, protection, planting and management of trees and woodland. This should be linked to a green infrastructure strategy.
    - B) Existing trees of value should be retained and any loss as the result of development should be replaced following the principle of 'right place, right tree. Wherever appropriate, the planting of additional trees should be included in new developments, particularly large-canopied species.
    - C) Boroughs should follow the advice of paragraph 118 of the NPPF to protect 'veteran' trees and ancient woodland where these are not already part of a protected site.
    - D) Boroughs should develop appropriate policies to implement their borough tree strategy.

- **The London Plan (2011), Housing Supplementary Planning Guidance (March 2016)[20]:** With regards to housing, recently a dedicated supplementary planning guidance has been produced, the relevant elements of which are presented below
    - Standard 40 and Policy 7.19 "Biodiversity and access to nature promotes a proactive approach to the protection, promotion and management of biodiversity across the capital" and that "Proposals for development should give full consideration to their direct and indirect effects on ecology. Ecological improvements can be achieved as part of Sustainable Urban Drainage Systems and incorporated into green or brown roofs, green walls and soft landscaping."
    - Policies 7.19 and 7.21 "supporting biodiversity, protecting London's trees, 'green corridors and networks".
    - Development proposals should also enhance provision of green infrastructure in the public realm, helping to mitigate and adapt to climate change (Policy 5.10 Urban Greening), extend tree cover (Policy 7.21), improve biodiversity (Policy 7.19).
    - Public, communal and private open spaces should be protected and enhanced, and where possible new open spaces should be created. This is supported by Policy 2.18 Green Infrastructure, Policy 7.18 Protecting open space, Policy 7.19 Biodiversity and Policy 7.21 Trees and Woodlands.

[20] Greater London Authority (2016) *London Plan 2016 Implementation Housing Supplementary Planning Guidance adopted in March 2016*

- **The London Plan – Draft for public consultation (2017)**[21]. In 2017 the draft new London Plan went out to public consultation and is scheduled to be published in 2019 following consideration of the consultation responses and Public Examination. The draft London Plan advocates a green infrastructure approach to conservation of the natural environment recognising its social and economic value. It also moves to recognise the practical actual financial value. There is also now the drive for development to incorporate quality green space (i.e. enhancements). The draft London plan now includes an Urban Greening Factor for demonstration of these enhancements (Policy G5). The most relevant chapter in the draft Plan is Chapter 8 Green Infrastructure and Natural Environment (previously Chapter 7 in the adopted London Plan), with other relevant sections in the rest of the Plan, including Chapter 9 Sustainable Infrastructure. Relevant policies include G2 Greenbelt, G3 Metropolitan Open Land, G4 Local green and open space, G5 Urban greening, G6 Biodiversity and access to nature, G7 Trees and woodlands, G8 Food growing and G9 Geodiversity.
- With regards to the Draft London Plan (published 2017) by considering the wider potential effects on Regents Canal and the need to maximise the landscape value for biodiversity the OSD has fulfilled the policies regarding Green Infrastructure and Natural Environment.
- **The Mayor's Biodiversity Strategy (2002)**[22]**:** Connecting with London's Nature: The Mayor's Biodiversity Strategy provides a statutory framework for the delivery of biodiversity policies in London. It seeks to ensure that there is no overall loss of wildlife habitats in London.
- **The London Plan (2011), Sustainable Design and Construction Supplementary Planning Guidance (April 2014)**[23]**:**
    - Mayor's Priority - Developments should contribute to the Mayor's target to increase tree cover across London by 5% by 2025.
    - Mayor's Priority - There is no net loss in the quality and quantity of biodiversity.
    - Mayor's Priority - Developers make a contribution to biodiversity on their development site.
    - Mayor's Priority - Any loss of a tree/s resulting from development should be replaced with an appropriate tree or group of trees for the location, with the aim of providing the same canopy cover as that provided by the original tree/s

[21] Greater London Authority. (2017). The Draft London Plan for Public Consultation
[22] Greater London Authority (2002), *Connecting with Nature: The Mayor's Biodiversity Strategy adopted in 2002*
[23] Greater London Authority (2011), The London Plan *Sustainable Design and Construction Supplementary Planning Guidance adopted in April 2014*

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