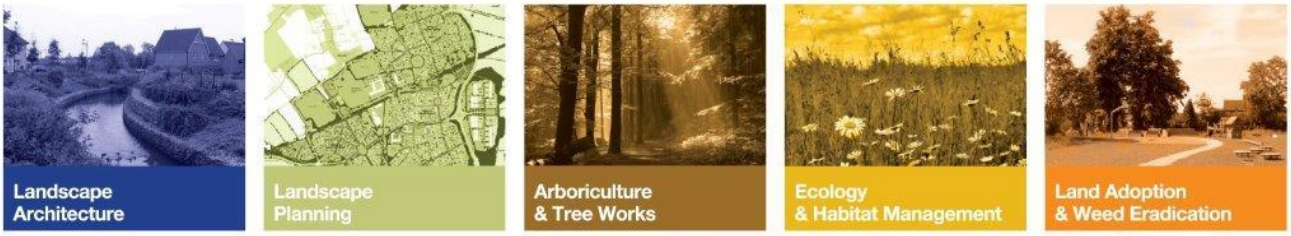

James Blake Associates Ltd

Updated Phase 1 Habitat Survey

of

The Covered Reservoir at Gondar Gardens, West Hampstead, London

on behalf of

LifeCare Residences

July 2018

Over 30 Years of Service, Value and Innovation

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Revision	Purpose	Originated	Checked	Authorised	Date
		GP	IS	CA	July 2018
Job Number: JBA 10/35		**Title:** Phase 1 Habitat Survey of The Covered Reservoir at Gondar Gardens, West Hampstead, London			

Disclaimer

James Blake Associates Ltd have made every effort to meet the client's brief. However, no survey ensures complete and absolute assessment of the changeable natural environment. The findings in this report were based on evidence from thorough survey: It is important to remember that evidence can be limited, hard to detect or concealed by site use and disturbance. When it is stated that no evidence was found or was evident at that point in time, it does not mean that species are not present or could not be present at a later date: The survey was required because habitats are suitable for a given protected species, and such species could colonise areas following completion of the survey.

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CONTENTS

Non-technical Summary

Site:	The Covered Reservoir at Gondar Gardens, West Hampstead
Grid Reference (from the centre of the site)	TQ 248 853
Report Commissioned by:	LifeCare Residences
Date of Survey:	5th July 2018

Considerations	**Description**	**Timings and potential impacts**
Statutory and non-statutory sites within 2km:	One Local Nature Reserve (LNR) and 22 Sites Important to Nature Conservation (SINC), one of which was the site itself	An Ecological Action Plan is recommended to retain where possible, protect, enhance and manage the interest features of the SINC in the long term
SPA, SAC and Ramsar sites within 7km:	There are no SPAs, SACs or Ramsar sites within 7km of the site	N/A
Phase 2 surveys (update 2016 surveys):	Reptile Surveys	Mid-March to September
	Bat Activity Surveys	May to September (ideally May to August)
	Breeding Bird Surveys	April to July (ideally April to June)
Phase 2 survey which may be needed (dependent on final layout):	Updated Emergence/return to roost or climb and inspect surveys for bats (if trees with moderate to high potential will be impacted)	May to September (emergence/return to roost) Year round (climb and inspect)
Precautionary Measures:	Removal of trees, shrubs and scrub	Outside of the nesting bird season (March to September) or following a nesting bird survey
Habitat types:	Semi-improved grassland, scrub, trees, shrubs, ruderal vegetation	

1 Introduction

Background

1.1 James Blake Associates Ltd were commissioned by LifeCare Residences to undertake an Updated Phase 1 Habitat Survey of the covered reservoir at Gondar Gardens, West Hampstead, London (Grid ref: TQ 248 853, taken from the centre of the site).

1.2 The assessment was required to accompany the resubmission of planning application 2013/7585/P which was allowed at appeal (APP/X5210/A/14/2218052) on the16/12/2015 to develop the site: Redevelopment of reservoir street frontage to provide 28 residential units in 2 blocks from lower ground to 3rd floors, following substantial demolition of roof and internal structure of reservoir and subsequent re-landscaping.

1.3 For the purposes of this report, protected species are taken to be those which are protected under European Legislation (Conservation of Habitats and Species Regulations 2010, as amended) and UK legislation (Wildlife and Countryside Act 1981; Protection of Badgers Act 1992); and species and habitats of principle importance which are listed in Section 41 of the NERC Act (2006).

1.4 There is a general biodiversity duty in the National Planning Policy Framework (NPPF) 2012, placing responsibility on Local Planning Authorities to aim to conserve, enhance and encourage biodiversity in and around developments. Section 40 of the NERC Act requires every public body in the exercising of its functions to 'have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'. Biodiversity, as covered by the Section 40 duty, includes all biodiversity, not just the habitats and species of principal importance. However, there is an expectation that public bodies would refer to the S41 list when complying with the Section 40 duty.

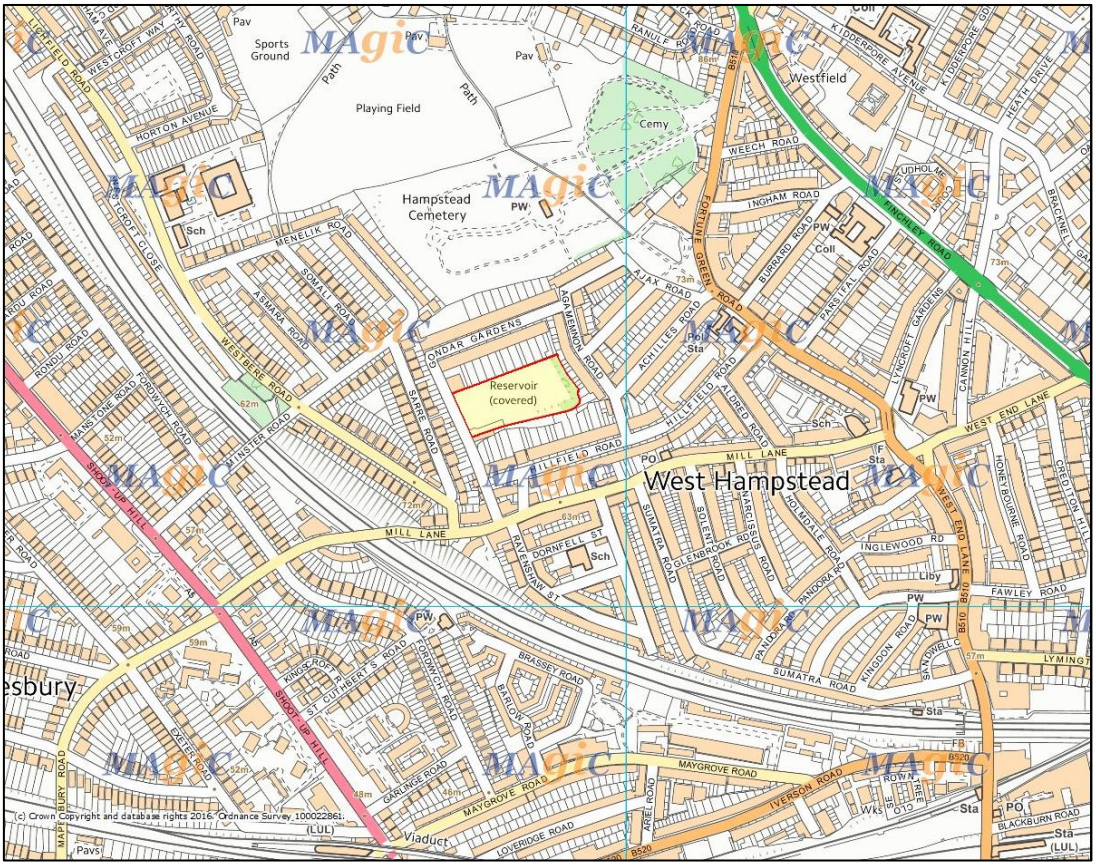
Site Description

1.5 The site is located at Gondar Gardens, Camden, London, and consists of a former underground reservoir with a neutral, rough grassland covering and shrubs and trees located at the site boundary. The area is designated a Site of Borough Grade II Importance for Nature Conservation. Residential properties with gardens are located

directly adjacent to the southern, northern and eastern boundaries of the site, while directly to the west was Gondar Gardens road, across which are further residential properties.

1.6 The surrounding habitats are mostly urban with the parkland habitats of Hampstead Cemetery located approximately 125m north of the site with playing fields beyond. A railway and associated vegetation is located approximately 170m south west of the site (see Figure 1 below). The significant green spaces of Golders Hill Park and Hampstead Heath are located approximately 1.35km north east and approximately 1.9km east of the site respectively.

Figure 1: Site location



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Aims and objectives

1.7 The aim of the survey was to:

- Identify the presence, or potential presence, of any protected or notable species or habitats on, or adjacent to, the site;
- assess the potential impact of the proposed works on any protected or notable species and/or habitats present including nature conservation sites on, or adjacent to, the site; make recommendations for further surveys and/or mitigation following the survey (if necessary) and provide suggestions to enhance the wildlife value of the site post-development.

2 Methods

Desk study

2.1 A 2km radius search for statutory designated sites, excluding Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites, either on the proposed development site or in the surrounding area, was conducted using "MAGIC", the Multi-Agency Geographic Information system for the Countryside.

2.2 A 7km search for SACs, SPAs and Ramsar sites was also conducted using MAGIC.

2.3 The Greenspace information for Greater London (GiGL) was consulted for records of non-statutory sites and protected and rare species within a 2km search radius (GiGL data provided on the 8th July 2018).

2.4 The site is covered by the Local Biodiversity Action Plan (BAP) for Camden (https://www.camden.gov.uk/ccm/content/leisure/outdoor-camden/wildlife-and-nature-conservation/camden-biodiversity-action-plan.en).

Phase 1 Habitat Survey

2.5 The survey was undertaken by Crystal Acquaviva BSc (Hons) MSc MCIEEM (Natural England great crested newt class license WML-CL08; bat class license WML-CL18) and George Poulton BSc (Hons) MSc GradCIEEM. During the survey, the temperature was 33°C, there was a light breeze (Beaufort scale 1), 25% cloud cover and good visibility on the 5th July 2018.

2.6 The survey methodology followed JNCC (Joint Nature Conservation Committee) Guidelines (JNCC, 2010) and included mapping habitat types and identifying all plant species observed on the site, including Wildlife and Countryside Act Schedule 9

invasive plant species such as Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*).

2.7 The site was also assessed for signs and evidence of protected, principally important and rare species in accordance with approved guidelines, as follows:

2.8 **Amphibians**: There were no known ponds at the site, or within 500m. Therefore, assessment for amphibian suitability was based upon terrestrial habitat only.

2.9 **Bats**: Trees at, and adjacent to, the site boundary were surveyed externally, from the ground, for their potential to support roosting bats, under the following criteria, taken from recommendations made by the Bat Conservation Trust in the 'Bat Surveys for Professional Ecologists Good Practice Guidelines' (BCT, 2016).

Table 1: Bat survey protocol for trees (potential bat roosting features were identified in order to categorise trees, as below):

Bat Roost Potential	Field signs
Roost **Confirmed**	Confirmed bat roost in tree: field evidence of the past or current presence of bats, e.g. droppings, staining.
High roost potential	Splits or cracks in major limbs which develop upwards, smooth surface or flies around entry point, medium to dense ivy-covering particularly on mature trees, woodpecker/rot holes, hollow stem or limb, significant lifting bark, snagged branches, artificial bird or bat boxes, tightly forked branch unions, hole between roots leading into a hollow stem, dense epicormic growth, deadwood in canopy or stem, Ancient or over mature trees where the canopy cannot be fully inspected from the ground.
Medium roost potential	Splits in branches, low - medium ivy-covering on trees in healthy condition, small cavities and small areas of deadwood in canopy or stem.
Low roost potential	Splits in minor branches, sparse ivy, and limited loose bark.
No roost potential	Trees with good visibility to the top of the canopy (particularly young and semi-mature trees) not supporting any of the above features or trees with a negligible potential to support bat roosts (may display minor features but considered highly unlikely to be suitable for bats).

2.10 **Dormice**: A visual survey for the presence of suitable habitat (woodland/suitable hedges with good under-storey/shrub layer and a range of food plant species, such as hazel, bramble and honeysuckle) was carried out, to assess if dormice were likely to be present.

2.11 **Reptiles**: A visual survey for the presence of suitable habitat was carried out according to the criteria given in the Herpetofauna Workers' Manual (Gent and Gibson 1998).

2.12 **Otters and water voles**: There were no water bodies within the site or within 50m that provided suitable habitat for otters or water voles.

2.13 **Invertebrates**: The site was scoped for significant rotting deadwood, and high quality aquatic or other habitats, which could be used by significant assemblages of invertebrates, or by any of the invertebrates highlighted in the data search.

2.14 **Flora and habitats**: All habitats and plant species that were identifiable at the time of the survey were recorded.

2.15 **Badgers:** A visual survey for setts, hair, latrines, prints, snuffle marks or other signs of badgers was undertaken within the site boundary, following guidelines set out by the Mammal Society (1989).

2.16 **Birds:** A visual survey of bird activity and suitable nesting habitat was carried out, to determine if any areas would be suitable for WCA Schedule 1 birds, Birds of Conservation Concern or other common and widespread nesting birds.

2.17 **Adjacent Habitat**: Habitats close to the site were identified, using aerial maps and field observation, so that the ecological impact of the proposed works on the wider landscape could be assessed.

3 Results

Desk Study

Statutory Nature Conservation Sites within 2km of the site and Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites within 7km

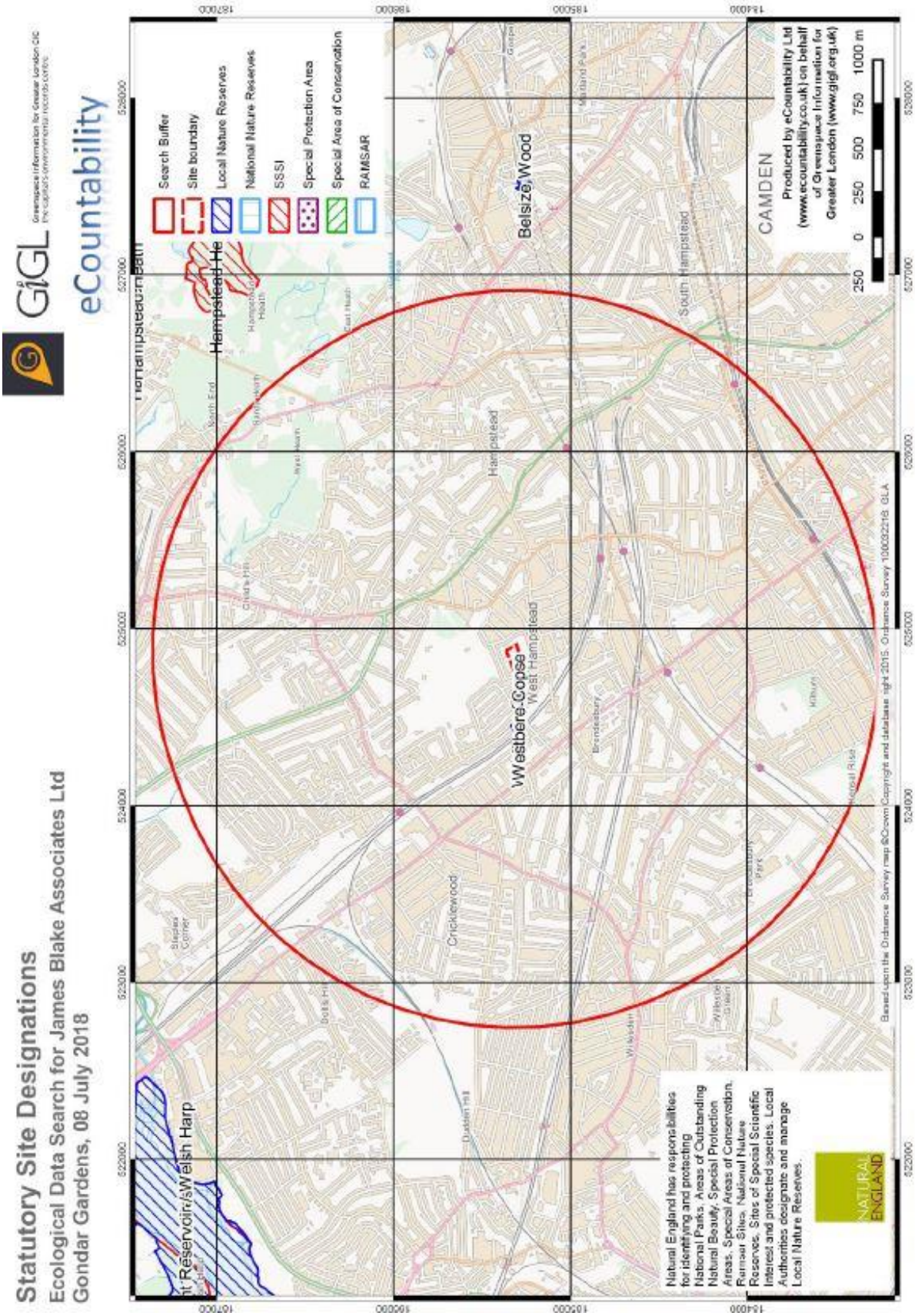
3.1 A search for statutory designated sites within 2km of the site was carried out for Sites of Specific Scientific Interest (SSSIs) and National or Local Nature Reserves. One Local Nature Reserve (LNR), Westbere Copse, was identified which is detailed in Table 2 and shown in Figure 2.

3.2 In addition, a 7km radius search was carried out for SPAs, SACs and Ramsar sites. No SPAs, SACs or Ramsar sites were found within the search area.

Table 2: Statutory conservation sites within 2km of the site

Site Name	Approximate Location & Description
Westbere Copse LNR and SINC (Grade I)	Approximately 235m west. One of the most important sites for wildlife in this part of Camden, relatively undisturbed due to years of strictly limited public access and having benefited from years of regular conservation activity. It is divided into a Public Open Space area, and The Jenny Wood Nature Reserve. Jenny Wood contains a small woodland area composed predominantly of Grey Poplar, Sycamore, Oak, Lime, Ash and Beech. The under-storey is dense and dominated by Snowberry with Hawthorn, Blackthorn, Privet and Elder. In these densely shaded areas there is a limited under-storey with species such as Cow Parsley, Common Nettle, Ivy and Bramble. There is a small area of rough grassland dominated by a variety of grasses interspersed with Wild Carrot, Red Clover, Lesser Knapweed, Yarrow, Ox-eye Daisy and other meadow species and sometimes Common Broomrape (a rare species in London). Later in the season it is dominated by the alien and invasive Canadian Goldenrod and Michaelmas Daisy. There is a small pond and wet area dug in 1998 and improved in 2003 with a fence and dipping platform and in 2006.

Figure 2: Statutory sites within 2km



Non-Statutory Nature Conservation Sites

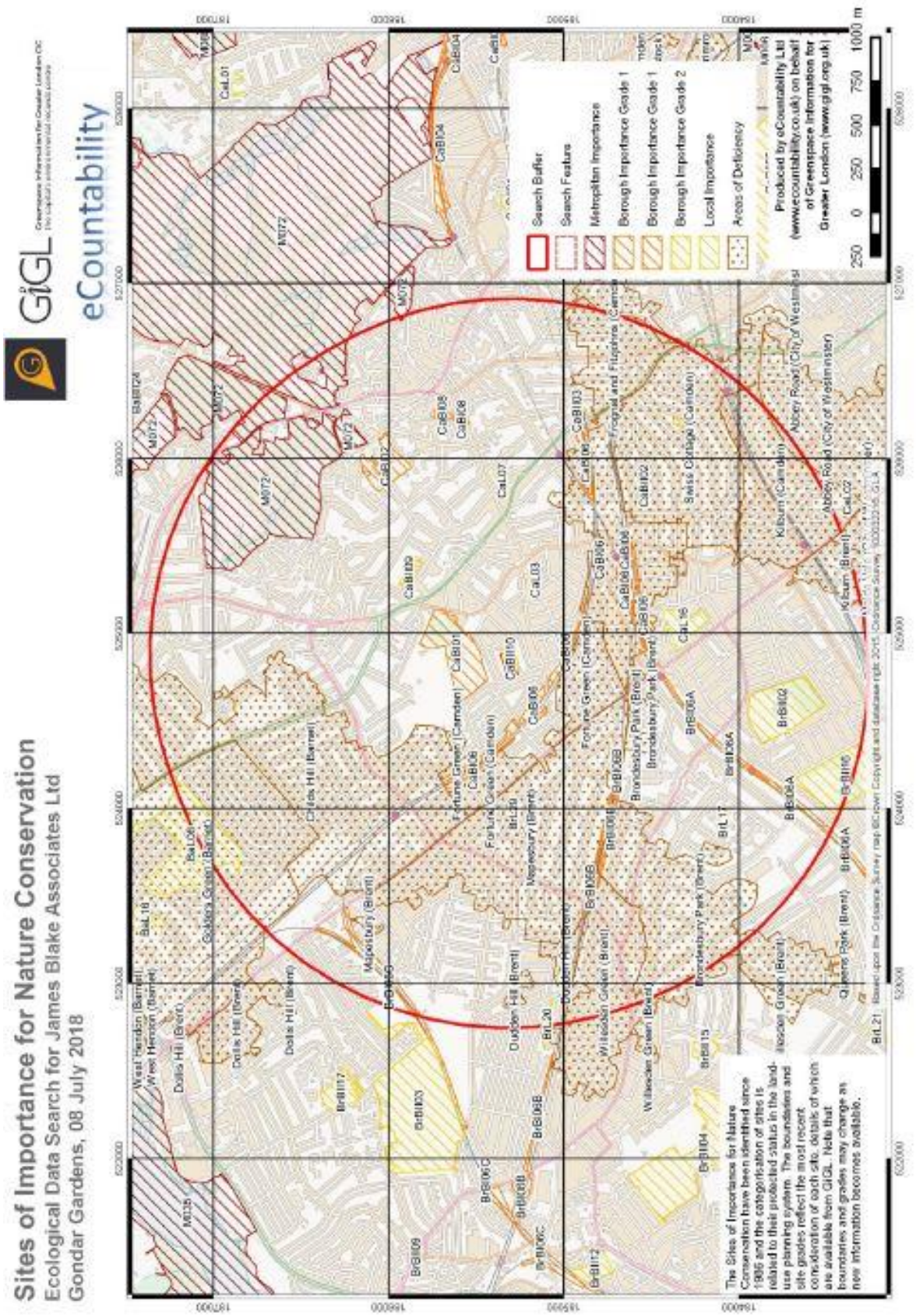
3.3 There were 22 non-statutory conservation sites within 2km of the site: all of which were Sites of Importance for Nature Conservation. These included the site itself, and are classed as having Metropolitan, Borough and Local Importance, and are listed in Table 3 and shown in Figure 3.

Table 3: Non-statutory conservation sites within 2km of the site

Site Name	Approximate Location & Description
Gondar Gardens Covered Reservoir (Grade II SINC)	The site is designated for its mostly neutral grassland, moderate diversity of common wild flower plants and a population of the locally uncommon spiked sedge (*Carex spicata*). The site also has the only known population of Slow Worms in Camden.
Hampstead Heath (SINC)	Located approximately 1.9km east of the site and cited for its range of habitats including bogs, ponds, grassland and ancient woodland. The site is particularly noted for its botanical and invertebrate interest.
Silverlink Metro between Brondesbury and Willesden Junction (Grade I SINC)	Located approximately 700m south of the site and is cited for its scrub habitats of value to wildlife including birds, reptiles, mammals and insects.
Metropolitan line between Kilburn and Neasden (Grade I SINC)	Located approximately 1.5km south west of the site and cited for its botanical diversity providing habitat for wildlife including birds, reptiles, mammals and insects.
Dudding Hill Loop between Cricklewood and Harlesden (Grade I SINC)	Located approximately 1.7km north west of the site and cited for its botanical diversity providing habitat for birds, mammals, reptiles and invertebrates.
Hampstead Cemetery (Grade I SINC)	Located approximately 125m north of the site and cited for its parkland green space with mature trees grassland and scrub providing habitat for a range of birds, mammals and invertebrates.
Branch Hill (Grade I SINC)	Located approximately 1.3km north west of the site and cited for its Varity of habitats including allotments, gardens and secondary woodland providing habitat particularly for birds.
West Hampstead Railside, Medley Orchard and Westbere Copse (Grade I SINC)	Located approximately 300m south of the site and is cited for its variety of habitats including orchard, secondary woodland and grassland providing habitats for birds, mammals and invertebrates. The London notable species of common broomrape *Orobanche minor* has also been found here.
Hampstead Parish Churchyard (Grade I SINC)	Located approximately 1.4km east of the site and cited for its mature trees and interesting grassland with the uncommon lady-fern *Athyrium filix-femina*.
Paddington Old	Located approximately 1.7km south west of the site

Cemetery (Grade II SINC)	and cited for its variety of habitats including scattered trees and grassland including some less common species and provides habitat for birds and invertebrates.
Queen's Park (Grade II SINC)	Located approximately 1.9km south west of the site and is cited for its mature trees and grassland habitats providing habitat for biodiversity.
Broadhurst Gardens Meadow (Grade II SINC)	Located approximately 1.2km south east of the site and cited for its garden habitats variety of botanical interest providing habitat for invertebrates and birds.
Frognal Court Wood (Grade II SINC)	Located approximately 1.6km south east of the site and cited for its secondary woodland providing habitat for a range of birds.
Green Triangle (Grade II SINC)	Located approximately 1.8km south east of the site and cited for its variety of habitats including secondary woodland and a pond and the biodiversity it supports.
Kings College Hampstead Campus (Grade II SINC)	Located approximately 1.1km north east of the site and is cited for habitats such as mature trees and grassland habitats.
Clitterhouse Recreational Ground (SINC)	Located approximately 1.9km north west of the site and cited for habitats such as running water, scrub and secondary woodland and the biodiversity it supports.
Malorees School Orchard (SINC)	Located approximately 1.7km south west of the site and cited for its orchard habitats and pond including the largest black mulberry tree in Brent.
Griffin Close Scrub (SINC)	Located approximately 2km west of the site and is cited for scrub and grassland habitat and botanical diversity supporting a variety of biodiversity.
The Dell Doorstep Green (SINC)	Located approximately 900m west of the site and cited for habitats including scattered trees grassland and a lake supporting birds and invertebrates.
160 Mill Lane Community Garden (SINC)	Located approximately 500m south east of the site and cited for habitats including a lake, scattered trees and grassland and botanical diversity.
Frognal Lane Gardens (SINC)	Located approximately 700m east of the site and cited for habitats such as a lake, scattered trees and grassland including a good selection of wildflowers.
Kilburn Grange Park (SINC)	Located approximately 500m south east of the site and is cited for habitats and pond including scattered trees, semi-improved grassland and scrub supporting a diverse range of aquatic and terrestrial flora.

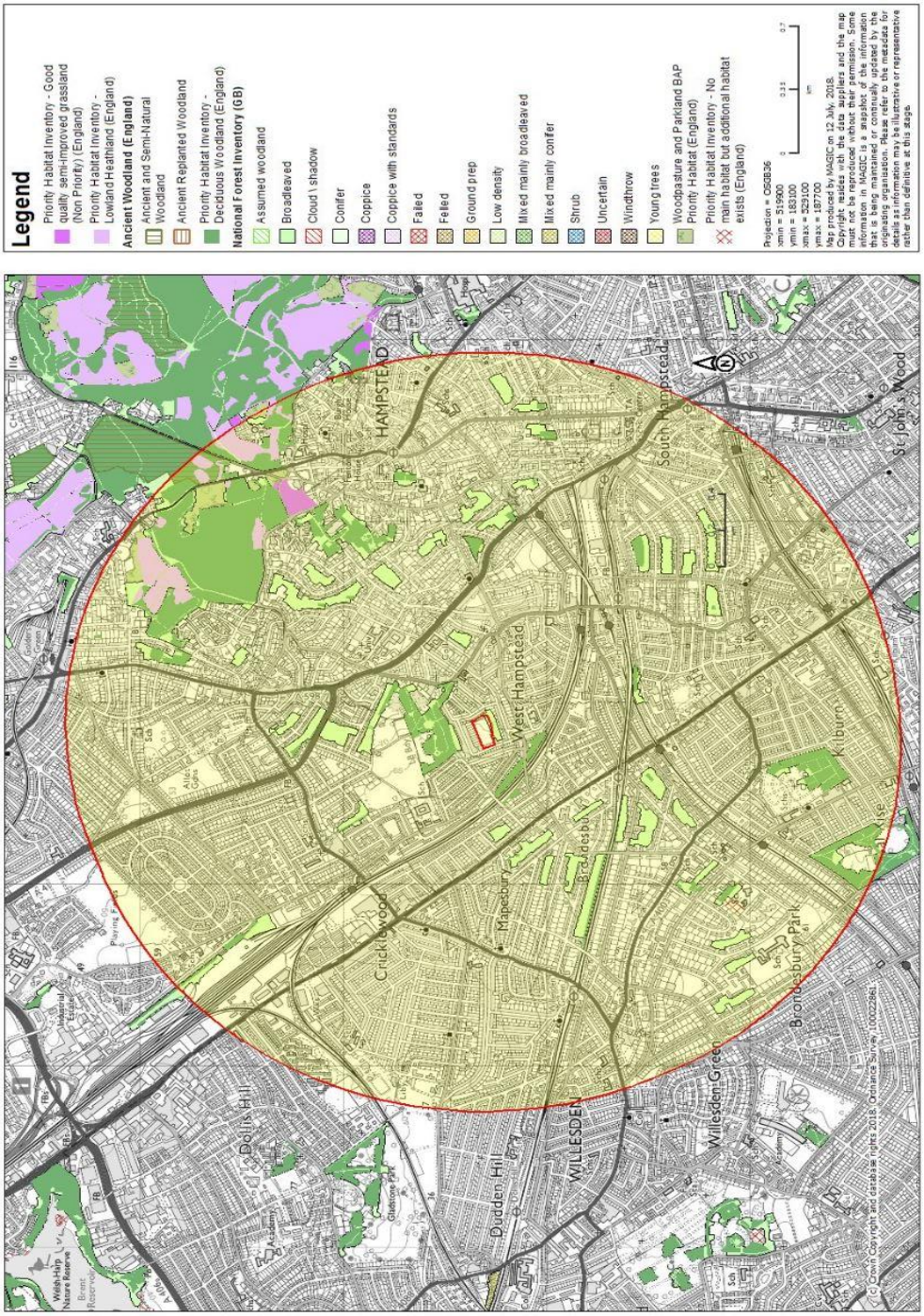
Figure 3: Non-statutory conservation sites within 2km of the site



Habitat Types within 2km

3.4 Habitat types within the area included deciduous woodland, good quality semi-improved grassland, lowland heathland and ancient woodland. The nearest woodland was adjacent to the south of the site, some of which was classified as priority habitat deciduous woodland. The nearest ancient woodland was approximately 1.9km north east. The nearest good quality semi-improved grassland and lowland heathland were approximately 1.4km north east.

Figure 4: Habitat types within 2km



Protected, priority and rare species

3.5 The Birds of Conservation Concern (BoCC) are split into three criteria. The red list is the highest conservation priority (species needing urgent action). The amber list is the next most critical group, followed by green. Red listed species are those that are globally threatened according to IUCN criteria, species with populations or ranges that have declined rapidly in recent years, and those that have declined historically and have not shown a substantial recent recovery.

3.6 Full lists of UK principally important and protected amphibians, plants, birds, reptiles and mammals are shown below. A reduced list of UK principally important and protected invertebrates is shown; these have been selected based on their likelihood of being recorded at the site or within adjacent habitats, given the habitat types present.

Birds	Protection	Approximate distance from site	Recent year within 2km
Barn owl	WCA 1	No distance available*	1998
Bittern	BoCC red list; WCA 1; LBAP	1.7km east	2010
Black Redstart	WCA 1; LBAP	No distance available*	2012
Brambling	WCA 1	1.2km south west	1987
		Within a 1km square	2011
Bullfinch	BoCC amber list; SPI	1.2km south west	1987
Dunnock	BoCC amber list; SPI	On site	2014
		1.4km south west	2017
Fieldfare	BoCC red list; WCA 1	1.2km south west	1986
		Within a 2km square	2013
Firecrest	WCA 1	285m north	2010
Grey wagtail	BoCC red list	959m north	2005

		Within a 1km square of the site	2010
Herring gull	BoCC red list; LBAP	On site	2016
Hobby	WCA 1	No location available*	2002
House sparrow	BoCC red list; SPI; LBAP	On site	2014
		Within a 1km square of the site	2017
Kingfisher	BoCC amber list; WCA 1	1.7km north	2001
Lapwing	BoCC red list; SPI	1.4km south west	1986
		Within a 1km square of the site	2010
Common redpoll	BoCC red list; SPI	Within a 1km square of the site	2010
Lesser spotted woodpecker	BoCC red list; SPI; LBAP	135m north	1987
		800m east	2015
Linnet	BoCC red list; LBAP	Within a 1km square	2010
Mediterranean gull	WCA 1	Within a 1km square	2010
Merlin	BoCC red list; WCA 1	Within a 1km square	2010
Peregrine falcon	WCA 1; LBAP	No location available*	2006
Red kite	WCA 1	448m north	2010
		No distance	2011
Redwing	BoCC red list; WCA 1	288m north	2014

Reed bunting	SPI; LBAP	Within a 1km square of the site	2010
Skylark	BoCC red list; SPI; LBAP	1.2kn south west	1987
		Within a 1km square of the site	2010
Song thrush	BoCC red list; SPI	On site	2014
Spotted flycatcher	BoCC red list; SPI	1.2km south west	1985
		1.7km north	1986
Starling	BoCC red list; SPI	On site	2016
Turtle dove	BoCC red list; SPI; LBAP	No distance available*	1987
Willow warbler	BoCC amber list	1km south	2001
		1.2km south east	2002
Wood warbler	BoCC red list; SPI; LBAP	288m north	2012
Yellowhammer	BoCC red list; SPI; LBAP	600m east	2014

Mammals	**Protection**	**Approximate distance from site**	**Year of Record**
Hedgehog	SPI; LBAP	On site	2004
		1.4km north east	2017
Daubenton's bat	European protected; LBAP	1.5km north	1993
Natterer's bat	European protected; LBAP	1.8km north	2002
		Within a 1km square of the site	2002

Brown long-eared	European protected; SPI; LBAP	1.8km north	2009
		No distance available*	2013
		Within a 1km square of the site	2006
Noctule bat	European protected; SPI; LBAP	On site	2016
Leisler's bat	European protected; LBAP	On site	2016
Common pipistrelle	European protected; LBAP	On site	2014
		1.4 south west	2017
Serotine bat	European protected; LBAP	On site	2016
Soprano pipistrelle	European protected; SPI; LBAP	On site	2016
Nathusius's pipistrelle	European protected; LBAP	On site	2016

Plants	IUCN Red Data list / Protection	Approximate distance from site	Year of Record
Annual knawel (*Scleranthus annuus*)	*Endangered;* SPI; LBAP	Within a 2km square of the site	1898
Black Poplar (*Populus nigra subsp. betulifolia*)	*Least concern; LBAP*	1.1km north	1992
		Within a 2km square of the site	2002
Chamomile (*Chamaemelum nobile*)	*Vulnerable;* SPI; LBAP	1.6km north	2003
		Within a 1km square of the site	1861
Common cudweed (*Filago vulgaris*)	*Near threatened*	Within a 2km square of the site	2003
Common juniper (*Juniperus communis subsp. communis*)	*Least concern; SPI; LBAP*	Within a 10km square of the site	1998
Corn cleavers (*Galium tricorntum*)	*Crirtically Endangered*	Within a 10km square of the site	1887
Corn marigold (*Glebionis segetum*)	*Vulnerable*	Within a 1km square of the site	2002
Darnel (*Lolium temulentum*)	*Critically Endangered;* SPI	Within a 1km square of the site	1965
Depthford pink (*Dianthus armeria*)	*Endangered*; SPI	Within a 1km square of the site	1941
Field woundwart (*Stachys avernsis*)	*Near Threatened*	1.3km north	2011
Flat-stalked pondweed (*Potamogeton friesii*)	*Near Threatened*	Within a 1km square of the site	1949
Henbane (*Hyoscyamus niger*)	*Vulnerable*	Within 1km square of the site	1994
Hydrilla (*Hydrilla verticillata*)	*Vulnerable*	Within a 2km square of the site	1996
Lesser water plantain (*Baldellia ranunculoides*)	*Near Threatened*	Within a 10km square of the site	1917
Loose silky-bent (*Apera spica-venti*)	*Near Threatened*	Within a 10km square of the site	1984
Marsh clubmoss (*Lycopodiella inundata*)	*Endangered; SPI*	Within a 10km square of the site	1865
Marsh stitchwort (*Stellaria palustris*)	*Vulnerable;* SPI	Within a 2km square of the site	1869

Meadow clary (*Salvia pratensis*)	*Near threatened*	Within a 1km square of the site	1988
Meadow Saffron (*Colchium autumnale*)	*Near threatened*	Within a 2km square of the site	2003
Nettle-leaved goosefoot (*Chenopodium murale*)	*Vulnerable*	Within a 2km square of the site	1965
Oak-leaved goosefoot (*Chenopodium glaucum)*	*Vulnerable*	Within a 10km square of the site	1949
Oxlip (*Primula elatior*)	*Near threatened*	Within a 10km square of the site	1988
Pennyroyal (*Mentha pulegium*)	*Endangered; SPI; LBAP*	Within a 10km square of the site	1850
Petty whin (*Genista anglica*)	*Neat Threatened*	Within a 10km square of the site	1951
Pheasant's-eye (*Adonis annua*)	*Endangered;* SPI	Within a 2km square of the site	1878
Flat-stalked pondweed (*Potamogeton friesii*)	*Near threatened*	Within a 1km square of the site	1949
Service tree (*Sorbus domestica*)	*Endangered*	614 north east	2011
Spreading bellflower (*Campanula patula*)	*Endangered; SPI*	1.3km north	2010
		Within a 1km square of the site	1948
Sulphur clover (*Trifolium ochroleucon*)	*Near threatened*	Within a 1km square of the site	1993
Yellow vetch (*Vicia lutea*)	*Near threatened*	Within a 2km square of the site	1915
Yellow vetchling (*Lathyrus aphaca*)	*Vulnerable*	Within a 10km square of the site	1954

Invertebrates	**Protection**	**Approximate distance from site**	**Year of Record**
Asiraca clavicornnis (Coleoptera)	LSoCC; NN	199m west	1999
Brown ant	LSoCC; NN	199m west	1999
Flax flea beetle	LSoCC; NN	199m west	1999

Marbled white	LSoCC	Within a 1km square of the site	2014
Nysson trimaculatus (Hymenoptera)	NN	199 west	1999
Oak pinhole norer (*Platypus cylindrus*)	LSoCC; NN	Within a 1km square of the site	1999
Oxystoma cerdo (*Coleoptera*)	NN	199m west	1999
Stag beetle	LSoCC; WCA5; SPI; LBAP	300m west	1999
		1.4km south	2016
Wall	SPI; LBAP; Red List *Near Threatened*	800m north	2001
White admiral butterfly	SPI; LBAP; Red List *Vulnerable*	Within a 1km square of the site	2001
White-letter hairstreak	SPI, LBAP; Red List *Endangered*	Within same 2km square as site	1998
Hornet mimic hoverfly	LSoCC; NN	199m west	1999
Volucella inanis	LSoCC; NN	199m west	1999
Moth Species			
Alder signal	NN	Within the same 1km square as the site	1867
Brindled beauty	SPI; LBAP; Red List *Vulnerable*	Within the same 1km square as the site	1976
Buff ermine	SPI; LBAP; Red List *Vulnerable*	Within the same 10km square as the site	1976
Buttoned snout	LSoCC	Within the same 1km square as the site	1966
Cinnabar	SPI; LBAP; Red List *Vulnerable*	Within the same 1km square as the site	1966
Double dart	SPI; LBAP; Red List *Endangered*	Within the same 10km square as the site	1966
Ear Moth	SPI; LBAP; Red List *Vulnerable*	Within the same 1km square as the site	1966

Garden tiger	SPI; LBAP Red List *Vulnerable*	Within the same 1km square as the site	1968
Ghost moth	SPI; LBAP; Red List *Vulnerable*	Within the same 1km square as the site	1966
Grey dagger	SPI; LBAP; Red List *Vulnerable*	Within same 2km square as the site	1966
Hornet moth	LSoCC	199m west	1999
Horse chestnut leaf miner	LSoCC	1198m north	2007
Knot grass	SPI; LBAP; Red List *Vulnerable*	Within the same 1km square as the site	1966
Pinion-streaked snout	LSoCC	Within the same 10km square as the site	2009
Sallow	SPI; LBAP; Red List *Vulnerable*	1.1km north	2007
Spinach	SPI; LBAP; Red List *Endangered*	Within the same 10km square as the site	1976
White ermine	SPI; LBAP; Red List *Vulnerable*	Within the same 1km square as the site	1968

Amphibians	**Protection**	**Approximate distance from site**	**Year of Record**
Toad	SPI; LBAP	27m north west	1999
		919 north east	2014
Great crested newt	European protected, SPI; LBAP	1.2km north	2002

Reptiles	**Protection**	**Approximate distance from site**	**Year of Record**
Slow worm	Partially protected under the WCA Schedule 5; LBAP	On site	2016

WCA = Wildlife and Countryside Act 1981 as amended; SPI = Species of Principle Importance; LBAP = Local Biodiversity Action Plan; BoCC = Birds of Conservation Concern 4; NN = Nationally Notable; LSoCC Local Species of Conservational Concern

** Records do not include the location of sighting and therefore the distance from site cannot be determined, however these records do indicate the presence of a species in the search area*

Updated Phase 1 Habitat Survey

3.7 Figure 5 shows a Phase 1 habitat map of the site, with Target Notes. A list of plant species identified on the site is included in Appendix A.

Limitations and Assumptions

3.8 The baseline conditions reported and assessed in this document represent those identified at the time of the survey on the 5th July 2018. Although a reasonable assessment of habitats present can be made during a single walkover survey, seasonal variations are not observed. The full plant species list (Appendix A) was based on the current site visit. The survey was conducted in July, which is in the optimal season for Phase 1 habitat surveys. All areas of the site were accessible on the day of the survey, apart from the shed (TN8) which had become overgrown and surrounded by scrub.

3.9 The desk study used available records and historical data from the local area. However, this does not provide a reliable indication of species present since records depend entirely on survey effort in the area, which is highly variable. The data are useful as a general guide to supplement the site visit, but absence of records does not reflect absence of species.

Figure 5: Phase 1 Habitat Map

Target Notes

Target Note (TN)	Habitat description	Photo
1	The reservoir top was neutral grassland with shallow soil and an average sward height of approximately 40-50cm. Grass species included sweet vernal (*Anthoxanthum odoratum*) and false oat (*Arrhenatherum elatius*). Forbs were frequent, including bird's foot trefoil (*Lotus corniculatus*), yarrow (*Achillea millefolium*) and black knapweed (*Centaurea nigra*).	
2	The grassland continued to the east, dominated by false oat grass, where soil depth was greater. Stands of meadow vetchling (*Lathyrus pratensis*) and tufted vetch (*Vicia cracca*) were also present.	

2a	An area of shorter sward height grassland (approximately 20cm) was within the eastern area. This was dominated by false oat grass (*Arrhenatherum elatius*), with zigzag clover (*Trifolium medium*), cinquefoil (*Potentilla* sp.) and meadow vetchling (*Lathyrus pratensis*).	
2b	An area of tall ruderal dominated by creeping thistle (*Cirsium arvense* and field bindweed (*Convolvulus arvensis*). Bramble scrub is beginning to encroach upon this part of the site. This area was previously long SI grassland in 2016.	
3	Virginia creeper (*Parthenocissus quinquefolia*) – an invasive species listed on WCA Schedule 9 - was also present in this area, overgrowing garden fencing, increasingly encroaching into the grassland. Cherry saplings are also encroaching on the site. Fencing previously present within the site has been removed.	

4	A shrub belt at the eastern boundary included semi-mature sycamore (*Acer pseudoplatanus*), hawthorn (*Crataegus monogyna*), yew (*Taxus baccata*), plum (*Prunus sp.*) and privet (*Ligustrum vulgare*). Ground cover was dominated by ivy (*Hedera helix*). Trees on this boundary require further inspection due to dense ivy covering which may have concealed potential features for bats.	
5	South-facing banks, heavily dominated by field bindweed. Grasses were less frequent and dominated by false oat grass. Ruderal species and scrub were encroaching and included creeping thistle and bramble (*Rubus fruticosus*). Log piles were present on the bank, some of which were overgrown by bindweed.	
6	Mature trees outside the southern boundary, included scots pine (*Pinus sylvestris*), ash (*Fraxinus excelsior*), sycamore and willow (*Salix sp.*). Some trees had low to medium bat roost potential due to ivy covering and/or snapped limbs or stems.	

6a	An ash had a snapped stem. Woodpecker holes were noted in remaining wood, providing roosting opportunities for bats. High bat roost potential (Photo from 2016 survey).	
7	Some trees to the south east of the reservoir top, including ash and sycamore, had low bat roost potential due to dense ivy covering, which may have concealed potential features. (Photo from 2016 survey).	
8	A dilapidated garden shed to the south west of the reservoir top had been overgrown by scrub and shrubs, and was not sufficiently visible to assess during the site visit (Photo from 2016 survey).	

9	An on-site willow (*Salix sp.*) with low bat roost potential due to an ivy covered trunk.	No photo
9a	An on-site willow (*Salix sp.*) had low bat roost potential due to an ivy covered stem (Photo from 2016 survey).	
10	Trees and shrubs with scattered scrub in the south-west corner of the site, dominated by ash saplings, bramble, privet and ivy.	

11	A dense stand of bramble scrub was present close to the southern boundary.	
12	An overgrown area to the western boundary (outside the SINC designated area): Hard-standing, rough grass and scrub. Species included hazel (*Coryllus avellana*), sycamore, ash, bramble, ivy, creeping cinquefoil (*Potentilla reptans*), great willowherb (*Epilobium hirsutum*), nettle (*Urtica dioica*), ragwort (*Senecio jacobaea*) and cock's foot (*Dactylis glomerata*).	

13	An open, block built control building with a concrete flat roof to the west of the site. This was open at the front, and access was noted into spaces within the brickwork, providing opportunities for roosting bats. Seals on front and rear of building (inserted in 2016) were still intact.	 
14	A south facing grill close to the southern boundary had metal mesh behind it with a small aperture (approximately 5-10mm) which prevented entry for bats into the reservoir itself at this point. Visible external brickwork was in reasonable condition, with no recorded alternative entry points or opportunities for crevice roosting bats.	

15	Reservoir entrance (steel hatch) found ajar giving bats potential access to reservoir underground. Needs to be checked by a licensed bat ecologist prior to sealing.	 
16	Hedgehog droppings were found along the northern site boundary adjacent to the residential gardens. Fox droppings were found throughout the site.	

4 Protected Species – Results and Evaluation

Flora and habitats

4.1 **Semi-improved grassland** - The reservoir top (Target Note 1) was neutral semi-improved grassland, on shallow soil, dominated by grasses with frequent to abundant forbs. To the east of this was an area of less species rich rough, taller grassland (Target Note 2). Tall ruderal and scrub has encroached from the southern boundary over the eastern field since the 2016 phase 1 survey. This was dominated by thistles with frequent bramble and field bindweed (Target Note 2b). A shrub belt (Target Note 4) at the eastern boundary included mostly semi-mature trees.

4.2 **Trees and shrubs** – The site was bordered mostly by semi-mature trees, the majority of which were situated within the adjacent gardens bordering all but the western boundary. Some of these to the eastern and southern boundaries were considered to have low to moderate bat roost potential. A semi-mature ash which had a snapped main stem and woodpecker holes, along the southern boundary, was also considered to have high bat roost potential.

4.3 **Scrub** – The western, eastern and southern boundaries had bramble and immature tree scrub. Bramble scrub had encroached from the south and eastern boundary into the eastern field. This potentially provided additional nesting opportunities for birds, as well as cover for commuting hedgehogs.

4.4 Virginia creeper, listed on Schedule 9 of the Wildlife and Countryside Act (1981) (as amended) (WCA), was recorded on the site along the northern boundary in 2016 (James Blake Associates, 2016). It has since encroached further onto the site from the boundary (Target Note 3). It is an offence to introduce, or allow such species to grow in the wild. These species are classed as 'controlled waste' and must be disposed of appropriately at a licensed landfill site according to the Environmental Protection Act (Duty of Care) Regulations 1991.

4.5 Japanese knotweed (*Fallopia japonica*), listed on Schedule 9 of the WCA (as amended) had previously been recorded at the site and had been treated with herbicide (JBA, 2010a). This species was not recorded in 2016 Phase 1 survey, nor during the current site visit, however, if knotweed is found during construction, it is recommended that further spraying is undertaken to eradicate this species from the site.

4.6 Spiked sedge (*Carex spicata*) was recorded at the site during the 2013 Phase 1 Habitat Survey (JBA, 2013) in very small quantities within discrete areas which are recommended for retention. This species was not recorded during the 2016 Phase 1 survey, nor the current site visit and therefore if it does persist at the site, it is most likely in smaller amounts than previously recorded. It was noted in the 2016 report that scrub encroachment in the south east corner had covered areas where the species was recorded (Target note 2b). As the tall ruderal and scrub encroachment has become more substantial, it was considered that this plant is unlikely to be impacted by the proposed development. However, with proper management of the site the plant could benefit. This species is cited within the SINC designation due to its rare status in Camden.

4.7 The desk study highlighted a number of rare plant species, some of which could potentially be found in grassland habitats. However, many of these were historic records, and have not been recorded during the period over which surveyors from James Blake Associates have been visiting the site – including the current site visit during July, when the majority of these species would still be identifiable. Other plant species noted in the desk study were woodland and aquatic species which would not be found in habitats such as those within the site boundary.

4.8 It is recommended that the area of grassland to the east, which includes the remnant pocket of acidic grassland, a Camden BAP habitat, should be retained within the development and suitably managed in the long term.

4.9 No further survey is considered necessary.

Bats

4.10 James Blake Associates have previously conducted further surveys for bats, including activity, emergence/return to roost of tree and building features and internal inspections of the reservoir. The results of the surveys are summarised in Table 4 below.

Table 4: Previous survey results

Date	Company	Results for reservoir at Gondar Gardens			Further surveys
		Roosting evidence	Evidence of bats	Bat roost potential	
July 2010	James Blake Associates	None found on site. Possible individual pipistrelle roost in garden to north.	Personal observation of swarming behaviour off site. Very low numbers of common pipistrelle bats were detected and observed foraging and commuting along the boundary of the site.	Reservoir itself had negligible potential due to restricted access	N/A
July & August 2014	JBA Consultancy Services Ltd	None found on site. Reservoir was internally inspected and no evidence of bats was found.	Low numbers of foraging and commuting common pipistrelles. Occasional commuting passes from soprano pipistrelle, noctule and Leisler's bat.		N/A
July to December 2016	James Blake Associates Ltd	None found on site. Reservoir was internally inspected and no evidence of bats was found.	Low numbers of foraging and commuting common pipistrelles. Occasional commuting passes from soprano pipistrelles, noctules and Nathusius' pipistrelles. Leisler's and *Myotis* species to boundaries of the site.		N/A

4.11 Trees on the eastern and southern boundaries were considered to have low bat roost potential due to having a good ivy covering, concealing potential features (Target notes 4, 6, 9, 9a). Seals that had been installed on the control building (Target note 13) were still intact. No additional features or potential entry points for bats were recorded on the buildings or boundary trees. A brick built sub-station in the north western corner of the site (to the north of TN12) appeared well sealed where brickwork and roof edges were visible, although dense ivy covered much of it. Bat roost potential was likely to be negligible.

4.12 The entrance hatch reservoir itself was found to have been left ajar, and could potentially have provided access to bats. An internal inspection was carried out

shortly after the Phase 1 survey on the 10th July 2018, the survey uncovered no bats or signs/evidence of bat activity within the reservoir. The reservoir hatch was sealed following the inspection preventing bats from entering the reservoir following the inspection (James Blake Associates, 2018).

4.13 The site was dominated by semi-improved grassland, which provides moderate quality foraging habitat for bats. The shrub belt to the west and trees at the southern boundary provided good quality foraging habitat for bats, and potential commuting routes between the site and surrounding habitat.

4.14 The desk study highlighted records of nine species of bat within 2km of the site, five of which were recorded using the site during the surveys in 2014 and 2016 (JBA, 2014a; James Blake Associates, 2016).

4.15 Bat surveys were undertaken by James Blake Associates in 2010, 2014 and 2016. Low numbers of common pipistrelles and occasional soprano pipistrelles were recorded foraging at the site boundaries, and within adjacent gardens. Other species recorded included serotine, Nathusius', noctules, Leisler's and *Myotis* species, it was considered that these were occasional visitors to the site for foraging and commuting. No roosting bats or bats exhibiting roosting behaviour were recorded at the site during the surveys.

4.16 Due to the time which has lapsed since the most recent surveys, it is recommended that bat activity surveys are updated to ensure that the status of the site with regards to foraging and commuting bats has not changed.

4.17 If any of the trees with low bat roost potential will be impacted by the proposed development, any felling or works to these should be undertaken using sensitive methods under supervision of a licensed ecologist. Any with moderate or high bat roost potential, which are scheduled to be impacted should be surveyed prior to any works. Emergence/return to roost surveys can be undertaken between May and September, or climb and inspect surveys may be possible which can be undertaken year round. Surveys should comply with BCT survey guidelines (2016).

4.18 Ivy should be removed from the sub-station in the north western corner of the site, and the building should be checked prior to demolition by a suitably qualified ecologist to ensure that no roost features were concealed by the vegetation. If features are found then further recommendations may be necessary and should be followed.

4.19 To minimise risk of disturbance to foraging and commuting bats on the site, it is recommended that the development should follow lighting minimisation precautions,

including the following:

- No works on site should be conducted after sunset and if security lighting is required then this should be kept to the minimal level (as necessary for safety and security)
- Post development lighting should be directed away from boundary trees and vegetation, in particular, away from the off-site trees with bat roost potential highlighted in Target Notes 4, 6, 9 and 9a.
- Installation of lighting columns at the lowest practical height level with box shield fittings will minimise glare and light spillage
- Lux level of lamps should be as low possible and be high pressure sodium (rather than metal halide, or other) with covers made from glass rather than plastic as this minimises the amount of UV light, reducing the attraction effects of lights on insects
- Security lights should be set on short timers, and be sensitive to large moving objects only

Reptiles

4.20 The majority of the site, semi-improved grassland, provided good quality foraging and sheltering habitat for reptiles. Surrounding scrub, shrubs, trees, garden waste to the northern boundary and log piles along the south-facing bank, and the bank itself (Target Note 5), provided sheltering, hibernation and basking opportunities for reptiles.

4.21 Previous desk studies highlighted records of grass snake, common lizard and slow worm within 2km of the site. However, the former are not cited within the results tables due to being obtained using the National Biodiversity Network. Records of common lizard were over 2km from the site, and records of grass snake were historic. The SINC designation cites Gondar Gardens as the only known population of slow worms in Camden.

4.22 Reptile surveys were undertaken by Entec UK Ltd in September 2008 and May to July 2009. Further survey was carried out by James Blake Associates from August to September 2010 (JBA, 2010b), September to October 2013 (JBA, 2013) and from July to September 2016 (James Blake Associates, 2013; James Blake Associates Ltd, 2016a). The 2008 and 2010 surveys recorded a low population (peak count of

less than five adults) of slow worms, whereas the 2013 and 2016 surveys recorded a good population of slow worms (peak count of 5-10 adults). The majority of slow worm recordings were at the south-facing bank at the south-east of the site (Target Note 5). Slow worms were also recorded on the north and west site boundaries. Full details of these surveys can be found in these reports (JBA, 2015a).

4.23 Due to the elapsed time since the most recent surveys, updated reptile surveys are recommended to ensure that the status of reptiles (such as population size, extent of use) has not changed in the interim.

4.24 Reptile surveys can be undertaken between April and September, and involve seven visits to the site to survey previously laid artificial refuges. Surveys should follow current best practice guidelines (Froglife 1999).

Birds

4.25 The shrub belt at the eastern boundary, and trees within and surrounding the site provided potential nesting and foraging opportunities for birds.

4.26 Bird species observed during the field survey included great tit, wren, magpie, carrion crow, blackbird, jay and swift; swift is a BoCC amber listed species. The site provided potential habitat for a range of nesting widespread and common species. BoCC red-listed species and those of Principle Importance in England (SPIs) such as skylark, yellowhammer, song thrush, bullfinch, dunnock and spotted flycatcher, which were identified in the desk study, could use habitats such as those within the site boundary, although typically arable species, such as the former three, are less likely to be in the area.

4.27 Breeding bird surveys were carried out by James Blake Associates between March and June 2010, were updated in 2014 (JBA, 2014) and updated further in 2016 (James Blake Associates, 2016b). Of the birds recorded during the surveys two BoCC Red Listed species (starling, house sparrow) and two BoCC Amber Listed species (dunnock) were recorded using habitats within the site.

4.28 It is recommended that trees and boundary vegetation are retained, which would reduce the likelihood that any nesting habitat would be significantly impacted by the development. However, the reservoir top will be removed, and due to the loss of this area of greenspace in central London it is recommended that breeding bird surveys are updated to assess the use of habitats at the site by breeding and foraging birds.

4.29 Any trees/hedgerows proposed for retention should be suitably protected from harm during the construction works following British Standard: BS5837 (2012).

4.30 Site clearance and works proposed to any buildings, trees, scrub or hedges should be conducted outside the main bird breeding season (which is March until September). If vegetation removal is unavoidable between these dates, an ecologist should survey the site for active bird nests immediately prior to works. If nests are identified, there may be a delay in the clearance of some vegetation until all young birds have fledged.

Amphibians

4.31 There were no ponds or waterbodies within the site. The closest pond previously identified on OS maps was 500m south-east of the site boundary, and none were found within 500m of the proposed development site during the current survey.

4.32 The semi-improved grassland, trees, shrub belt and log piles at the proposed development site provided suitable foraging, sheltering and hibernation opportunities for amphibians, including great crested newts, in their terrestrial phase.

4.33 Due to the distance between the proposed development site and the closest pond (which potentially now does not exist), and the ecological barriers between it and the site, such as roads and buildings, it was considered unlikely that great crested newts would be using the proposed development site during their terrestrial phase.

4.34 No further survey is recommended.

Invertebrates

4.35 The semi-improved grassland, trees, shrub belt and areas of scrub provided suitable habitat for common and widespread invertebrates. However, these habitats, were of limited extent and therefore unlikely to support a significant assemblage of BAP or rare invertebrates. The log piles on the south-facing bank provided rotting deadwood, some of which was likely to be ash, which was frequent along the adjacent tree line, providing potential habitat for breeding stag beetles, a species of Principle Importance (SPI) in England.

4.36 The data search highlighted records of the wall, white letter hairstreak and white admiral butterflies and stag beetle within 2km of the site. Potential habitat and larval food plants was present at the site for wall, although this is now more confined to coastal areas, reducing the likelihood that it would be found using the site. Larval food plants for white admiral and white letter hairstreak were not recorded within the site boundary. Basking and nectaring opportunities for butterflies were present within the semi-improved grassland.

4.37 It is recommended that the less species rich area of the site, to the east, which includes ruderal, rough grassland and scrub is retained, enhanced and managed as a wildlife area post development. Appropriate management of the grassland will increase species diversity, and ensure that the grassland does not revert to scrub and become encroached by ruderal species, thus increasing the value of the habitat for butterflies and other grassland insects. The rotting wood providing potential habitat for breeding stag beetles should also be retained, and can be replenished (where necessary) and enhanced (by partially burying additional deadwood). If this recommendation is followed, it is considered unlikely that the local population status of rare, priority or protected invertebrates will be adversely affected by the proposed development.

Hedgehogs, hares and badgers

4.38 No signs of badger activity were recorded on the site. Hedgehog droppings were found along the northern site boundary adjacent to residential gardens. The grassland, shrub belt and areas of scrub and ruderal vegetation provided moderate quality habitat for foraging badgers and hedgehogs. It was considered unlikely that badgers would use the site. However, it was considered that the site acts as commuting habitat for hedgehogs to move between residential gardens where they will forage for food. Fox runs and droppings were abundant throughout the site.

4.39 There are records of hedgehogs within the site boundary from 2004.

4.40 Although the site provided potential foraging habitat for brown hare, it was not considered of sufficient extent to support a population of this species and similar habitat was lacking in the surrounding area.

4.41 It is recommended that, where possible, shrubs and scrub are retained to provide sheltering and commuting habitat for hedgehogs, and areas of grassland are retained to provide foraging habitat for this SPI species.

Dormice

4.42 The site was sub-optimal for dormice: The shrub belt was gappy, with infrequent mature trees, and lacked fruit and nut bearing species such as hazel. The area at Target Note 13 supported hazel but was isolated, and the vegetation structure was not suitable for dormice. There was no suitable habitat for this species surrounding, or connected to, the site.

4.43 The desk study did not highlight records of dormice in the surrounding area. Further survey is not recommended.

Other Protected, BAP or Rare Species

4.44 There were no water courses within the site or within 50m of the site boundary. Protected species associated with aquatic habitats, such as otter and/or water vole, would not be impacted by the proposed development.

Potential Impacts to Conservation Sites

4.45 Westbere Copse, a statutory designated conservation site, was within a 2km radius of the site. It was considered unlikely that the development would impact on this site, due to the limited size of the proposed development site and significant infrastructure between the site and other nature conservation sites (statutory or non-statutory).

4.46 The site itself is designated as a Grade II SINC: To ensure that the proposed development does not impact on the interest features of the SINC, an area of slow worm habitat should be retained, enhanced and suitably managed. The core area for slow worms, following a number of years of survey, has been shown to be the south facing slopes, which are recommended for retention and inclusion within an Ecological Management Plan for the site. Provided this is followed, these areas will not be impacted by the development. Scrub encroachment had also continued since the previous Phase 1 survey (JBA, 2015). Through appropriate long term management, following a dedicated management plan, the control of scrub and rank vegetation will aid in maintaining the value of the site for wildlife, including slow worms, which are an interest feature of the SINC.

4.47 An Ecological Action Plan should be compiled, detailing plans for a Wildlife Area including native and fruit bearing shrub and tree planting, rotational management of the retained grassland and the creation of hibernacula. This should take into account results and recommendations from all further surveys, and be implemented, through which it was considered that the site could be enhanced for slow worms, and other wildlife, post-development.

Key Recommendations: Legal Requirements

5.1. Further surveys and precautionary measures (if trees with roosting potential will be impacted) for bats are recommended. These species are protected under EU and UK law and loss of habitat or disturbance to these species should be licenced and adequately mitigated.

5.2. Further surveys for reptiles and breeding birds are also recommended. Widespread reptiles and breeding birds are protected under UK law, and any potential harm or significant losses of habitat should be adequately avoided and/or mitigated.

5.3. Precautionary clearance of buildings, scrub, shrubs and trees will be necessary, as detailed in Section 4, to avoid infringing legislation which protects all nesting birds. Additional areas requiring precautionary clearance may be highlighted once breeding bird surveys have been updated.

5 Additional Enhancements and Recommendations

5.1 The following suggestions will enhance the value of the site for wildlife.

5.2 The addition of six bat boxes on retained trees within the site would provide additional roosting opportunities. Schwegler bat boxes are recognised as being suitable for roosting bats and long lasting. Bat boxes should ideally be located south facing (between south east and south west) and above 5m. Boxes such as Schwegler 2F, suitable for pipistrelles would be suitable for this site.

5.3 The addition of three general purpose nest boxes (Schwegler 1B or similar) and three starling boxes (Schwegler 3SV or similar) on the new buildings or retained trees on site will provide additional nesting opportunities for BoCC red listed species such as house sparrow and starling, recorded close to site, and well adapted to an urban setting. General purpose boxes may also be used by a variety of other birds and bats. Boxes should be located out of direct sunlight and close to, but not restricted by, vegetation.

5.4 If new buildings at the site are sufficient in height (providing suitable locations, such as below eaves at least 5m above ground) then five swift bricks (Schwegler 17B or similar) could be incorporated into the external framework. These should be located as high above ground as possible (at least 5m), out of reach of predators and unobstructed with a clear flight path to the northern or western aspect of the building.

5.5 To encourage black redstarts, two open-fronted nest-boxes should be used within the development, appropriately located under structures, such as over hangs, balconies, escape routes and within utility buildings. Holes or access points should allow for small birds to pass through them but prohibit access to larger birds, particularly pigeons. A number of access point opportunities is preferable. Several nest boxes should be used to give black redstarts a choice of nesting locations.

5.6 To maintain the on-site breeding habitat for stag beetles, A Species of Principle Importance in England and Local BAP species, disturbance to any piles of rotting deadwood should be avoided throughout the construction phase, particularly those on the south facing bank to the south east of the site. The incorporation of a dedicated stag beetle loggery (also using deadwood species listed above) and untreated piles of wood chip or mulch, close to the shrub belt, would enhance the site for stag beetles which are known to be present in the surrounding area.

5.7 Landscaping could incorporate native or wildlife attracting trees, shrubs, and wildflower areas as these would likely be of benefit to a variety of wildlife including, birds, bats, hedgehogs, invertebrates and reptiles.

5.8 The construction of reptile hibernacula at the boundary of the site, particularly to the southern boundary, would enhance the site for reptiles in the future. These could be created by partially burying wood and rubble, covering with earth and thatching will a geotextile membrane and turf to reduce flood risk. The use of oak, ash, apple or cherry deadwood within these would also provide additional potential breeding habitat for stag beetles.

5.9 The incorporation of green and brown roofs would encourage invertebrates, providing a food source for a variety of wildlife including bats and birds. Rare birds such as black redstart (a Local BAP and WCA Sch. 1 species) may also benefit from green roofs, when installed in the London area.

6 Conclusion

6.1 The site predominantly consisted of semi-improved grassland with frequent ruderals. A shrub belt, boundary trees and a south facing bank formed a variety of habitats for reptiles, bats, birds and hedgehogs.

6.2 Further surveys for breeding birds and bats are recommended.

6.3 Previous reptile surveys have identified a good population of slow worms using the site, but an updated survey is recommended to reassess the population. A Reptile Mitigation Method statement should be prepared and implemented prior to start of works.

6.4 By following the proposed Reptile Mitigation Method Statement and Ecological Action Plan, recommendations contained herein and provided following further surveys, the key habitats, protected species, and local wildlife in general, can be protected during development, and preserved and maintained in the longer term.

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Appendices

Appendix A: Plant species list

Forbs

Common Name	Scientific Name	Semi-improved Grassland	Ruderal	Shrubs/scrub
Yarrow	*Achillea millefolium*	✓		
Bur chervil	*Anthriscus caucalis*	✓		
Mugwort	*Artemisia vulgaris*		✓	
White bryony	*Bryonia alba*			✓
Black knapweed	*Centaurea nigra*		✓	
Creeping thistle	*Cirsium arvense*	✓	✓	
Spear thistle	*Cirsium vulgare*	✓		
Field bindweed	*Convolvulus arvensis*	✓		✓
Smooth hawks-beard	*Crepis capillaris*	✓		
Foxglove	*Digitalis purpurea*	✓		
Great willowherb	*Epilobium hirsutum*		✓	
Cleavers	*Galium aparine*		✓	✓
Wood avens	*Geum urbanum*		✓	✓
Cut-leaved cranes-bill	*Geranium dissectum*	✓		
Dove's-foot cranes-bill	*Geranium molle*	✓		
Ground ivy	*Glechoma hederacea*		✓	✓
Hoary mustard	*Hirschfeldia incana*	✓		
Red dead nettle	*Lamium purpureum*	✓		
Nipplewort	*Lapsana communis*		✓	
Meadow vetchling	*Lathyrus pratensis*	✓		
Oxeye daisy	*Leucanthemum vulgare*	✓		
Bird's-foot trefoil	*Lotus corniculatus*	✓		
Common mallow	*Malva sylvestris*	✓	✓	
Black medick	*Medicago lupulina*	✓		
Everlasting sweet pea	*Lathyrus latifolius*	✓		
Ribwort plantain	*Plantago lanceolata*	✓		
Creeping cinquefoil	*Potentilla reptans*	✓	✓	
Meadow buttercup	*Ranunculus acris*		✓	
Common sorrel	*Rumex acetosa*	✓		
Broad leaved dock	*Rumex obtusifolius*	✓		
Common ragwort	*Senecio jacobaea*	✓		
Red campion	*Silene dioica*		✓	
Sow thistle	*Sonchus spp.*		✓	
Chickweed	*Stellaria media*	✓		
Lesser stitchwort	*Stellaria graminea*	✓		
Russian comphrey	*Symphytum x uplandicum*	✓		
Dandelion	*Taraxacum officinale*	✓		
Goat's-beard	*Tragopogon pratensis*	✓		

Zigzag clover	*Trifolium medium*			
Red clover	*Trifolium pratense*	✓		
Nettle	*Urtica dioica*		✓	
Tufted vetch	*Vicia cracca*	✓		

Trees and shrubs

Common Name	Scientific Name	Semi-improved Grassland	Ruderal	Shrub belt	Boundary/scattered trees
Sycamore	*Acer pseudoplatanus*		✓	✓	✓
Hazel	*Corylus avellana*		✓		
Hawthorn	*Crataegus monogyna*			✓	
Ash	*Fraxinus excelsior*		✓		✓
Ivy	*Hedera helix*	✓	✓	✓	✓
Laburnum	*Laburnum anagyroides*		✓		
Privet	*Ligustrum sp.*		✓	✓	
Virginia Creeper	*Pathenocissus quinquefolia*	✓			
Scots pine	*Pinus sylvestris*				✓
Blackthorn	*Prunus spinosa*			✓	
Prunus	*Prunus spp.*		✓		✓
Bramble	*Rubus fruticosus*	✓	✓	✓	
Willow	*Salix sp.*				✓
Elder	*Sambucus nigra*		✓		
Yew	*Taxus baccata*			✓	

Grasses, sedges, rushes and ferns

Common Name	Scientific Name	Semi-improved Grassland	Ruderal
Bent sp.	*Agrostis sp.*	✓	
Sweet vernal grass	*Anthoxanthum odoratum*	✓	
False oat grass	*Arrhenatherum elatius*	✓	✓
Cocksfoot	*Dactylis glomerata*	✓	✓
Yorkshire fog	*Holcus lanatus*	✓	
Wall barley	*Hordeum murinum*	✓	✓
Perennial rye grass	*Lolium perenne*	✓	
Rough meadow grass	*Poa trivialis*	✓	

Appendix B: Relevant protected species legislation

Species	Relevant Legislation	Level of Protection
Bats	○ Full protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended ○ Classified as European protected species under Conservation of Habitats and Species Regulations 2010, as amended ○ Also protected by the Wild Mammals (Protection) Act 1996	Under the WCA (1981), it is an offence to: • intentionally kill, injure, or take any species of bat • intentionally or recklessly disturb bats • intentionally or recklessly damage destroy or obstruct access to bat roosts
Birds	○ Protection under the Wildlife and Countryside Act (1981) as amended	Under the WCA (1981), it is an offence to: (with exceptions for certain species): • Intentionally kill, injure or take any wild bird • Intentionally take, damage or destroy nests in use or being built (including ground nesting birds) • Intentionally take, damage or destroy eggs Species listed on Schedule 1 of the WCA or their dependant young are afforded additional protection from disturbance whilst nesting
Widespread reptiles	○ Partially protected under Schedule 5 of the Wildlife and Countryside Act (1981) as amended.	Under the WCA (1981), it is an offence to: • intentionally kill or injure these animals • sell, offer for sale, advertise for sale, possess or transport for the purposes of selling any live or dead animals or part of these animals