

1MCo4 Main Works - Contract Lot S2

Preliminary Ecological Appraisal
Report - Ruislip Golf Course S2

MDL Code:

Document no.: 1MCo4-SCJ_SDH-EV-REP-SSo5_SLo7-000006

Revision	Author	Checked by	Approved by		Date approved	Reason for revision
C01	Gemma Turner	Nigel Phelps	Mark Gaby	Christiane Hof	14/7/2020	For acceptance
	<i>GTurner.</i>	<i>Nigel Phelps</i>	<i>MG</i>	<i>Christiane Hof</i>		

SECURITY CLASSIFICATION: OFFICIAL

Handling instructions: None



Revision	Author	Date authored	Checked by	Date checked	Approved by	Date approved	Reason for revision
Co1.1	Gemma Turner	22/5/2020	Nigel Phelps	22/5/2020	Mark Gaby	22/5/2020	For acceptance
Co1.2	Gemma Turner	10/7/2020	Nigel Phelps	13/7/2020	Mark Gaby	14/7/2020	RGC For acceptance following incorporation of SCS/HS2 comments



Contents

1	Executive Summary	2
2	Introduction	4
2.1	Overview	4
2.2	Purpose of this Appraisal	4
2.3	Legislation	5
2.4	Planning Policy	5
2.5	Guidance	5
3	Methodology	7
3.2	Desk Study	7
3.3	Field Survey	7
3.4	Assumptions and Limitations	8
4	Baseline Ecological Conditions	9
4.1	Designated Sites	9
4.2	Habitats	12
4.3	Protected and Notable Species	15
5	Evaluation and Recommendations	19
5.1	Further Surveys	19
5.2	Constraints	19
5.3	Mitigation Measures	20
5.4	Landscaping Strategy	20
6	Appendices	22
	Appendix A: Legislation, Policy and Guidelines	23
6.1	Legislation	23
6.2	Policy	25
6.3	The Mayor's Biodiversity Strategy	27
6.4	Hillingdon Local Plan: Part 1	27
6.5	Guidance	28
	Appendix B: Species List	30

1 Executive Summary

- 1.1.1 This report was written by Ove Arup & Partners Ltd (Arup) on behalf of Skanska Costain Strabag Joint Venture (SCS), to provide a Preliminary Ecological Appraisal (PEA) of the development at Ruislip Golf Course, Ickenham, Ruislip, HA4 7DP. The proposed project will reconfigure the course to accommodate land loss caused by the construction and operation of HS2 to the south of the site, and the subsequent safety buffer zone required.
- 1.1.2 Baseline information about the site was derived through a desk study and an extended Phase 1 habitat survey of the site. This included an ecological data search within a 2km radius and a review of planning application documents for HS2 Phase 1.
- 1.1.3 West Ruislip Golf Course and Old Priory Meadows Site of Borough Importance for Nature Conservation Grade 1 (SBI.I) is located partly within the site on the western and northern boundaries and also a smaller section lying centrally within the golf course. The western and northern sections within the site are formed of a rich wetland habitat, enhanced by adjacent wet grassland and a drainage ditch. Mad Field Covert, Railway Mead and the River Pinn Site of Borough Importance for Nature Conservation Grade 2 (SBI.II) is located approximately 70m to the south of the site. It contains an area of wildflower-rich grassland, a pond, mature hedgerows, complex woodland and the course of the shallow and slow-flowing River Pinn runs through it to the south.
- 1.1.4 A range of habitats were recorded within the site, including woodlands, grasslands, notably marshy grassland within the SBI.I, dense and scattered scrub, ponds and drainage ditches and running water associated with Ickenham Stream and with the River Pinn immediately adjacent to the site to the north. The site has potential to support roosting, foraging and commuting bats, badgers, otter, a wide range of bird species, including kingfisher, common reptiles and other wild mammals, and notable invertebrates and plant communities.
- 1.1.5 Further surveys for bats, badger, breeding birds, reptiles, great crested newts, invertebrates and notable plant species should be conducted to inform an assessment of impacts of the proposed development and requirements for mitigation and compensation. Key constraints relate to the designated sites (West Ruislip Golf Course and Old Priory Meadows SBI.I and Mad Field Covert, Railway Mead and the River Pinn SBI.II), as well as the woodlands, scrub, neutral semi-improved and marshy grasslands, and running and standing water that have the potential to support protected and notable species.
- 1.1.6 The development should ensure that valuable habitat areas are protected and enhanced to ensure no net loss of biodiversity. Best practice guidelines should be followed throughout all stages of the development to protect existing wildlife in the area. This is likely to include obtaining appropriate species licenses prior to the commencement of works and implementing mitigation strategies to ensure compliance with wildlife legislation. Specific requirements for mitigation will depend on the results of further surveys. However, the

landscaping proposals should compensate for habitat loss associated with the proposed development and provide enhancements, including improving connectivity across the site.

2 Introduction

2.1 Overview

- 2.1.1 This report was written by Ove Arup & Partners Ltd (Arup) on behalf of Skanska Costain Strabag Joint Venture (SCS), to provide a Preliminary Ecological Appraisal (PEA) of the development at Ruislip Golf Course, Ickenham, Ruislip, HA4 7DP centred at approximate Ordnance Survey (OS) grid reference TQ 08094 87184, which is hereafter referred to as the 'site'. The site, shown in Figure 1, is located within a suburban environment in the London Borough of Hillingdon, surrounded by houses, fields and woodland with the Chiltern Mainline railway running along the southern border and the River Pinn running along the northern boundary.
- 2.1.2 The proposed project will reconfigure the course to accommodate land loss caused by the construction and operation of HS2 to the south of the site, and the subsequent safety buffer zone required. It will reconfigure the existing, now closed 18 hole golf course into a nine hole golf course, practice area outfield, short game practice area and putting green. It will also create a new six hole academy course in the north-eastern part of the site. The existing driving range will be demolished and replaced with a minimum of 20-bays, including associated floodlights and safety netting. The development will re-profile the River Pinn and divert Ickenham Stream and requires the removal of vegetation, including some ponds and areas of woodland. Habitat replacement will include the planting and seeding of new trees, shrubs, grasses, wildflower meadows and turf, as well as the creation of new wetland habitats.

2.2 Purpose of this Appraisal

- 2.2.1 The objectives of this report are to:
- Identify any likely ecological constraints associated with the development;
 - Identify any requirements for mitigation following the 'Mitigation Hierarchy' ;
 - Allow the further ecological surveys needed to inform an ecological impact assessment (EcIA) to be identified and appropriately designed; and
 - Inform master-planning to allow significant ecological effects to be avoided or minimised wherever possible.

- 2.2.2 This report has been prepared with reference to current guidelines for Preliminary Ecological Appraisal (PEA)¹ and in accordance with BS42020:2013: Biodiversity – Code of Practice for Planning and Development².

2.3 Legislation

- 2.3.1 The interpretation of the survey findings and the subsequent recommendations have been produced in accordance with relevant legislation and best practice guidelines. Legislation relating to ecological resources that are relevant to this report and the recommendations subsequently provided include:

- Wildlife and Countryside Act 1981 (as amended) (WCA);
- Countryside and Rights of Way (CROW) Act 2000;
- Conservation of Habitats and Species Regulations 2017;
- Natural Environment and Rural Communities (NERC) Act 2006;
- Wild Mammals (Protection) Act 1996; and
- Protection of Badgers Act 1992.

- 2.3.2 Further details regarding protected species legislation is provided in Appendix A.

2.4 Planning Policy

- 2.4.1 This section reviews planning policies that support improving biodiversity and retaining green and natural spaces and therefore relevant to this report:

- The National Planning Policy Framework (NPPF);
- The England 2020 Biodiversity Strategy;
- London Plan;
- The Mayor's Biodiversity Strategy; and
- Hillingdon Local Plan: Part 1.

- 2.4.2 Full details regarding relevant planning policy is provided in Appendix A.

2.5 Guidance

- 2.5.1 This section reviews guidance documents that are relevant to this assessment:

¹ British Standards Institute (BSI) (2013); 'BS42020 – Biodiversity Code of Practice for Planning and Development.'

² Chartered Institute of Ecology and Environmental Management (CIEEM) (2017); 'Guidelines for Preliminary Ecological Assessment Second Edition.'

- UK Post-2010 Biodiversity Framework;
- London Biodiversity Action Plan;
- Section 41 List; and
- Birds of Conservation Concern.

2.5.2 Full details regarding relevant guidance is provided in Appendix A.

3 Methodology

- 3.1.1 Baseline information about the site was derived through a desk study and an extended Phase 1 habitat survey of the site, as described below.

3.2 Desk Study

- 3.2.1 In June 2018, an ecological data search was undertaken within a 2km radius of the OS national grid reference for the site (TQ 08047 87198)³. Information on statutory and non-statutory sites and notable and protected species records was obtained from Greenspace Information for Greater London (GiGL). Only records of protected and notable species dated from within the last 10 years were considered in the baseline review.
- 3.2.2 The site was assessed as part of the planning application for HS2 Phase 1. As such, the following reports were reviewed:
- Volume 2 Environmental Statement⁴; and
 - Volume 5 Mapbook⁵; and
 - Volume 5 ecological baseline data technical appendices for CFA1-6 Euston to Ickenham: designated sites, habitat surveys and flora⁶; amphibians, reptiles and birds⁷; mammals⁸; and invertebrates and fish⁹.

3.3 Field Survey

- 3.3.1 An extended Phase 1 habitat survey was undertaken on 25th April 2018 following the standard methods as described in the Guidelines for Preliminary Ecological Appraisal² and the Joint Nature Conservation Committee (JNCC) Handbook for Phase 1 Habitat Survey¹⁰. Access was obtained to the entire site, in addition to the remaining portion of the golf course to the south that falls within the boundary of the HS2 site.
- 3.3.2 Habitats on the site were mapped and characteristic plant species were recorded, with target notes to identify particular areas of interest or concern, including any invasive species.

³ Greenspace Information for Greater London, (2018); 'An Ecological Data Search for West Ruislip Golf Course On behalf of Arup Report reference 12049. Prepared on 07 Jun 2018.'

⁴ HS2, (2013); 'London West Midlands Environmental Statement. Volume 2 Community Forum Area report CFA6 South Ruislip to Ickenham.'

⁵ HS2, (2013); 'London West Midlands Environmental Statement. Volume 5 Map books CFA6 South Ruislip to Ickenham Ecology.'

⁶ HS2, (2013); 'London West Midlands Environmental Statement. Volume 5 | Technical Appendices CFA1-6 Euston to Ickenham Ecological baseline data: designated sites, habitat surveys and flora (EC-001-001) Ecology.'

⁷ HS2, (2013); 'London West Midlands Environmental Statement. Volume 5 Technical Appendices CFA1-6 Euston to Ickenham. Ecological baseline data: amphibians, reptiles and birds (EC-002-001) Ecology.'

⁸ HS2, (2013); 'London West Midlands Environmental Statement. Volume 5 Technical Appendices CFA1-6 Euston to Ickenham Ecological baseline data: mammals (EC-003-001) Ecology.'

⁹ HS2, (2013); 'London West Midlands Environmental Statement. Volume 5 Technical Appendices CFA1-6 Euston to Ickenham. Ecological baseline data: invertebrates and fish (EC-004-001) Ecology.'

¹⁰ Joint Nature Conservation Committee (JNCC) (2010); 'Handbook for Phase 1 Habitat Survey.'

Consideration was given to the potential for features to support protected and/or notable species, including the suitability of buildings and trees to support bat roosts¹¹.

3.4 Assumptions and Limitations

- 3.4.1 The findings presented in this study represent those at the time of survey and reporting. Variations in these conditions will occur as a result of seasonal factors, and with the general passage of time.
- 3.4.2 It should also be noted that fauna may travel over wide areas and can have large home ranges and so can be overlooked during surveys. Species which are absent at the time of survey may also return to or colonise a site at any future time.

¹¹ Hundt, L. (2012); 'Bat Surveys; Good Practice Guidelines. Second Edition.'

4 Baseline Ecological Conditions

4.1 Designated Sites

- 4.1.1 The site is within a 2km proximity to seven statutory designated sites: three Local Nature Reserves (LNRs); three Sites of Special Scientific Interest (SSSI); and one National Nature Reserve (NNRs), details of which can be found in Table 1.

Table 1 Statutory designated sites within 2km of the site

Site Name	Location	Reason for Designation
Ruislip Woods SSSI and NNR	1.23km north	Four extensive woodlands form a 305 hectare (ha) complex of structurally diverse and species-rich ancient woodland including some of the largest blocks of ancient semi-natural woodland in Greater London. Ruislip Woods include one of the most extensive oak <i>Quercus</i> sp. and hornbeam <i>Carpinus betulus</i> coppice woods in southeast England. The site also includes acid and neutral grassland, ponds, streams and marshland. The wooded streams, scrub, ponds and an area of grass-heath mosaic contribute to the diversity of the site from which around 360 species of vascular plants have been recorded. These include a number of species that are scarce or locally rare. The butterflies and moths are also of interest.
Fray's Farm Meadows SSSI	1.72km southwest	This 29ha site is adjacent to Denham Lock Wood SSSI and contains rare wet grazing meadows. Fray's River provides habitat for water vole <i>Arvicola amphibious</i> . The meadows are rich in flowers attracting rare insect assemblages.
Frays Valley LNR	1.73km west	This site encompasses Fray's Farm Meadows SSSI and Sites of Metropolitan Importance for Nature Conservation (SMI).
Denham Country/ Quarry Park LNR	1.88km west	This 27.9ha site is adjacent to Fray's Valley LNR and Fray's Farm Meadows SSSI and therefore helps to create a large area for wildlife. The site is surrounded by the Grand Union Canal, the River Colne and River Misbourne and therefore the majority of the site contains lowland fen habitat, rare in London and a Priority Habitat.
Denham Lock Wood SSSI	2km southwest	The 6.3ha wood consists largely of chestnut <i>Aesculus</i> coppice and conifer plantations, with areas of beech <i>Fagus sylvatica</i> , hazel <i>Corylus avellana</i> , ash <i>Fraxinus excelsior</i> and pedunculate oak <i>Quercus robur</i> woodland. Fray's River runs through the site, creating wet woodland and fen habitat. As a result, the area is rich in habitat for birds, flowers and invertebrates and supports some of London's most threatened species.
Ruislip LNR	2km northeast	This small site of 3.7ha contains deciduous woodland, a Priority Habitat. The site provides a 'stepping stone' habitat for wildlife moving through the area and provides connectivity between Ruislip Woods NNR and SSSI and other nearby sites.

- 4.1.2 Sites of Importance for Nature Conservation (SINCs) are recognised by the Greater London Authority and London borough councils as important wildlife sites. There are three tiers of sites:

- SMI;
- Sites of Borough Importance for Nature Conservation (SBIs); and

- Sites of Local Importance for Nature Conservation (SLI).

4.1.3 There are 18 non-statutory designated sites within 2km: two SMLs; 13 SBIs (four Grade 1 (SBI.I) and nine Grade 2 (SBI.II)); and three SLIs, details of which can be found in Table 2.

Table 2 Non-statutory designated sites within 2km of the site.

Site Name	Location	Reason for Designation
West Ruislip Golf Course and Old Priory Meadows SBI.I	Within the site	<p>The entire designated site is 17.9ha. The Old Priory Meadow lies beyond the north western boundary of the site supports a rich variety of wildflowers. Alongside is another much wetter field, dominated by Yorkshire fog <i>Holcus lanatus</i>, meadowsweet <i>Filipendula ulmaria</i> and tufted hair-grass <i>Deschampsia cespitosa</i>.</p> <p>The southern section within the site is a rich wetland habitat, enhanced by adjacent wet grassland and a drainage ditch. The river supports water-starwort <i>Callitriche</i> sp., brooklime <i>Veronica beccabunga</i> and fool's water-cress <i>Apium nodiflorum</i>, with meadowsweet, common fleabane <i>Pulicaria dysenterica</i> and hemlock <i>Conium maculatum</i> occurring along the banks. The wet grassland is dominated by meadowsweet, tufted hair-grass, gipsywort <i>Lycopus europaeus</i>, red clover <i>Trifolium pratense</i>, common nettle <i>Urtica dioica</i>, and common knapweed <i>Centaurea nigra</i>. The ditch supports abundant floating sweet-grass <i>Glyceria fluitans</i> and water-starwort along with water plantain <i>Alisma plantago-aquatica</i>, fleabane and marsh woundwort <i>Stachys palustris</i>. A tree-line on Clack Lane relieves the otherwise open nature of the fairways.</p> <p>A pond beside the railway embankment (pond 3, Figure 1) is dominated by great reedmace <i>Typha latifolia</i> with much trifid bur-marigold <i>Bidens tripartita</i> and silverweed <i>Potentilla anserina</i>, but has very little open water which might adversely affect great crested newt <i>Triturus cristatus</i> which has previously been seen in this pond. There are woodland areas adjacent to the railway to the south of the site. The railway embankment is species-rich, with a range of tall herbs and scattered shrubs and trees.</p>
Mad Field Covert, Railway Mead and the River Pinn SBI.II	0.07km south	This site is located approximately 70m to the south of the site. It contains an area of wildflower-rich grassland, a pond, mature hedgerows, complex woodland and the course of the shallow and slow-flowing River Pinn runs through it to the south. Green woodpeckers <i>Picus viridis</i> are regularly seen in this area and the pond is home to kingfisher <i>Alcedo atthis</i> .
Breakspear Road South Pond SBI.II	0.23km north	This small designated area (0.28ha) comprises a secluded pond with extensive marshy edges. Emergent and marginal vegetation covers approximately a third of the pond and includes soft rush <i>Juncus effusus</i> , floating sweet-grass <i>Glyceria fluitans</i> and reed canary-grass <i>Phalaris arundinacea</i> . The open water is partially shaded by alder and pedunculate oak and scrub restricts access to nearby grazing horses thus prevents disturbance. This pond was surveyed as part of HS2 Phase 1 in 2013 and was not found to have potential to support great crested newt.
River Pinn between St Martin's Approach and Woodville Gardens SLI	0.23km northeast	This 4.08 designated site contains a section of the River Pinn corridor and range of habitats including semi-improved neutral grassland, tall herbs, secondary woodland and ancient woodland.

Site Name	Location	Reason for Designation
Ickenham Marsh, Austin's Lane Pastures and Freezeland Covert SBI.I	0.55km southeast	This site comprises a mosaic of fields, old hedges, woodlands, rivers and wetlands. Much of the grassland in the fields is currently or formerly grazed. The extensive native hedgerows are dominated by hawthorn <i>Crataegus monogyna</i> and blackthorn <i>Prunus spinosa</i> and some hedges have seasonally wet ditches. Woodlands are dominated by pedunculate oak, with a dense canopy and shrub layer. Freezeland Covert is an area of dense damp woodland which provides habitats for a good range of birds, invertebrates and mosses. The river is home to fish and varied riparian flora. To the south east, meadows have become landlocked following road development to the south. A wide range of butterflies fly at the site, as well as numerous hoverflies and solitary aculeates.
Herlwyn Park Recreation Ground and railway banks SBI.II	0.59km east	The line of trees in the park includes old and twisted pedunculate oaks, which were pollarded in the past. These provide extremely valuable habitats for insects living in dead and decaying wood. An outgrown hedgerow of mainly hornbeam trees marks the eastern boundary of the site. The localised hoverfly <i>Didea fasciata</i> occurs here.
Bury Street Open Space and Wallington Close Streamside SLI	0.66km north	This 3.74ha designated site consists of a section of stream and adjacent habitats. Much of the open space comprises extensive native scrub and trees include oak, hornbeam and ash. The site provides extensive cover for songbirds, as well as green woodpecker. Unusually for a public open space, hornets <i>Vespa crabro</i> are present. This large social wasp is scarce and very local in London.
Ickenham Pond SBI.II	0.76km south	This small pond is in a busy area adjacent to High Road, Ickenham and has reasonable plant diversity despite the local dominance of exotic species; New Zealand pigmyweed <i>Crassula helmsii</i> and parrot's-feather <i>Myriophyllum aquaticum</i> . Native species include reed sweet-grass <i>Glyceria maxima</i> is locally abundant, as is great reedmace <i>Typha latifolia</i> , with yellow iris <i>Iris pseudacorus</i> and pendulous sedge <i>Carex pendula</i> .
Brackenbury Railway Cutting SBI.II	1.01km west	This 4.87ha designated site comprises dense tree and scrub dominated by pedunculate oak, elder and English elm with abundant ivy. There are a number of large oaks and areas of semi-improved neutral grassland.
Kings College Playing Fields SBI.II	1.04km northeast	This site follows a section of the River Pinn and incorporates the open spaces of the playing fields towards its western end. Much of this stretch of the Pinn is flanked on both banks by dense belts of native scrub and trees. These are interspersed with rough grassland, hedgerow and, in the west of the site, wetland features. The hedges, rough grassland, trees and large decaying timbers at the edges of Ruislip Cricket Club are also included in the site. Common sedge, a scarce plant in London despite its name, and marsh foxtail also grow here. The raft spider <i>Dolomedes fimbriatus</i> lives amongst ditch-side vegetation, together with common blue <i>Polyommata icarus</i> and large red damselflies <i>Pyrrosoma nymphula</i> . The river itself is home to many small fish. Grey wagtails <i>Motacilla cinerea</i> fly along the banks.
Newyears Green SBI.I	1.14km northwest	This 19.1ha designated site is centred around a secondary woodland which is dominated by pedunculate oak and contains ash, hornbeam, English elm, blackthorn, hawthorn, hazel and the locally scarce buckthorn <i>Rhamnus catharticus</i> . Other habitats include wet ditches, tall herbs, scrub, hedges and species-rich semi-unimproved neutral grassland. The unimproved grassland is horse-grazed and contains a central area of herb-rich grassland.
Harefield Hall and The Lodge SBI.II	1.43km southwest	This 11.18ha designated site comprises the gardens of a country house and golf course woodlands, including ancient and coniferous. The ancient woodland is dominated by pedunculate oak with frequent English elm, common lime and ash. This designated site also contains native and non-native scattered trees including a very mature oak, orchards, species-rich sward and a pond.

Site Name	Location	Reason for Designation
Ickenham Moat SLI	1.50km south	This 0.4ha designated site contains a listed Ancient Monument ditch which is filled with large trees and scrub creating damp shade, seasonal pools and marshy patches. Fallen trees provide decaying wood. This SLI provides sheltering and foraging opportunities for birds, mammals and invertebrates.
Dew's Dell SBI.II	1.60km northwest	This site is in an old quarry which is gradually being reclaimed by nature. Its northern section is managed as a nature reserve by the London Wildlife Trust. Past quarrying activities have left a variety of habitats, occupied by a wide range of species. A shaded pond is present in the wood which is dominated by pedunculate oak and ash trees. Common knapweed, agrimony <i>Agrimonia eupatoria</i> and ox-eye daisy <i>Leucanthemum vulgare</i> are found in drier grassland areas, with cuckooflower <i>Cardamine pratensis</i> and common spotted-orchid <i>Dactylorhiza fuchsii</i> in damper sections.
Common Plantation and Park Wood SBI.II	1.61km south	This site includes three areas of woodland with the River Pinn flowing between them. The river provides an excellent wildlife route between nature areas to the north and those to the south of the A40, which is a major barrier to wildlife movement.
Old Pumping Station Field SBI.II	1.78km north	The Old Pumping Station field is a large area of rich grassland bounded by hedgerows, immediately adjacent to Ruislip Woods NNR. The entire site is particularly rich in insects, including butterflies and moths. The numerous predatory robber-flies <i>Asilidae</i> are indicative of the wide range of insects here. The site is also valuable for reptiles.
Mid Colne Valley SMI	1.87km west	This section of the Colne Valley includes a diverse range of high quality habitats. There are several waterways running through the site, including both the River Colne and the Frays. The Frays flows through the natural wet pastures of Frays Farm Meadow. Also included in this site are the wet alder-willow woods of Denham Lock Wood as well as several extensive flooded gravel pits.
Ruislip Woods and Poor's Field SMI	1.92km north	This is the largest ancient woodland in London, an area of enormous wildlife conservation interest, is the richest site in London for lichens on trees and contains 585 species of fungi. It is also one of the capital's most important sites for bats, with at least nine species recorded. Large numbers of amphibians and reptiles also live on the site. There is also an important invertebrate community which includes several nationally rare and scarce species. The nationally rare heath fritillary butterfly was introduced here recently. There has been woodland on this location for eight thousand years and therefore the historical continuity is hugely important. Locally uncommon plant species growing here include wild service-tree <i>Sorbus torminalis</i> and common cow-wheat <i>Melampyrum pratense</i> . In addition to the woodland, the site also includes important heathland areas at Poor's Field as well as wetlands.

4.2 Habitats

4.2.1 The habitat types recorded within the site are listed below, with their alphanumeric reference codes, as detailed in the JNCC Phase 1 Habitat Survey Guidelines¹⁰:

- Broadleaved semi-natural woodland (A.1.1.1);
- Broadleaved plantation woodland (A.1.1.2);
- Dense scrub (A.2.1);

- Scattered scrub (A.2.2);
- Broadleaved scattered trees (A3.1);
- Semi-improved neutral grassland (B.2.2);
- Marshy grassland (B5);
- Standing water (G1);
- Running water (G2);
- Amenity grassland (J1.2);
- Introduced shrub (J1.4);
- Intact species-poor hedge (J2.1.2);
- Fence (J2.4);
- Dry ditch (J2.6);
- Buildings (J3.6); and
- Bare ground (J4).

4.2.2 These habitats are described below. A Phase 1 Habitat map can be found in Figure 1 and a species list in Appendix C.

Figure 1 Phase 1 Habitat Map

Woodland and Scattered Trees

- 4.2.3 Bands of broadleaved semi-natural woodland were recorded across the site, mainly around the periphery of the site and along Clacks Lane. A wide variety of tree species was recorded, with some mature specimens, including ash, lime *Tilia* sp., willow *Salix* sp. and holly *Ilex aquifolium*, as well as varied scrub and field layers, including bramble *Rubus* sp., hawthorn, celandine *Chelidonium majus*, cleavers *Galium aparine*, forget me not *Myosotis arvensis* and lords and ladies *Arum maculatum*. Two narrow strips of woodland were recorded either side of Clacks Lane, with tall ruderal vegetation recorded along the path, including garlic mustard *Alliaria petiolata*, green alkanet *Pentaglottis sempervirens*, hogweed *Heracleum sphondylium* and cow parsley *Anthriscus sylvestris*. Himalayan balsam *Impatiens glandulifera* was also recorded along Clacks Lane, which is listed on Schedule 9 of the WCA. This is a priority habitat under the UK and London BAPs, defined as lowland mixed deciduous woodland and woodland respectively.
- 4.2.4 Strips of broadleaved plantation woodland, scattered and lines of trees were recorded across the fairway. The woodlands were well managed with little or no woodland understorey, primarily patches of bramble. Tree species included hybrid black poplar *Populus x canadensis*, ash, pedunculate oak, including some mature specimens and white poplar *Populus alba*.

Scrub

- 4.2.5 Areas of impenetrable scrub were recorded in the northwest corner of the site, to the north of hole four, and to the east of semi-natural broadleaved woodland to the north of hole six. This comprised predominantly blackthorn and hawthorn scrub, with stands of hazel and silver birch *Betula pendula*. Scattered bramble, hawthorn and blackthorn was also noted in these areas.

Grasslands

- 4.2.6 The site is predominantly amenity grassland associated with the fairways and greens of the golf course. This was well maintained and generally closely mown and therefore supporting few species, including annual meadow grass *Poa annua*, daisy *Bellis perennis* and dandelion *Taraxacum officinale*. Neutral semi-improved grassland was recorded within part of the central fairway, to the west of hole 13, which was less frequently managed and consequently supported additional species than the surrounding amenity grassland, including cuckooflower, creeping buttercup *Ranunculus repens*, yarrow *Achillea millefolium* and Yorkshire fog.
- 4.2.7 An area of marshy grassland was recorded in the northwest corner of the site, to the south of the River Pinn and both north and south of the ditch alongside with Celandine Walk, characterised by a greater than 25% cover of meadowsweet *Filipendula ulmaria*. Giant hogweed *Heracleum mantegazzianum* was also recorded along the River Pinn in this part of the site, which is listed on Schedule 9 of the WCA. A range of other tall ruderal species were recorded, including common nettle, cow parsley and hogweed.

Standing Water

- 4.2.8 Four ponds were recorded within the golf course, although only one of these was within the site (P4, Figure 1). This pond was situated within a patch of semi-natural broadleaved woodland and was therefore heavily shaded with no aquatic vegetation. It was also shallow and likely to be temporary. P1, P2 and P3 are located within the HS2 site to the south and all supported aquatic and bankside vegetation. A network of wet ditches were also recorded, which were typically narrow drainage channels lacking in aquatic or riparian planting.
- 4.2.9 Ickenham Stream also comprises standing water and is, partially culverted to the north. The northern-most exposed section supported emergent and bankside vegetation, including meadowsweet, cuckooflower and rushes *Juncus* sp., the central section was dry and the southern section also heavily vegetated.

Running Water

- 4.2.10 The River Pinn flows northeast to southwest along the northern and eastern boundaries of the site. It has a stony substrate, with steep earth banks and bankside vegetation; within the site this is associated with marshy grassland.

Other Habitats

- 4.2.11 A stand of cherry laurel *Prunus laurocerasus* was recorded towards the west along the southern boundary and a section of Leyland cypress *Cupressus × leylandii* hedge extended into the golf course. A short cherry laurel hedgerow was recorded within the golf course compound. Sections of dry ditch were recorded across the golf course. Three buildings were recorded within the site, comprising the shelter for the driving range (B1, Figure 1), a single-storey brick building with a clay tiled pitched roof and a metal shed within the golf course compound (B2 and B3 respectively, Figure 1). Areas of bare ground are associated with car parking and roads around the entrance to the golf course and the compound. Occasional ruderal species were recorded within area of bare ground within the compound, including teasel *Dipsacus fullonum*, hedge mustard *Sisymbrium officinale* and groundsel *Senecio vulgaris*.

4.3 Protected and Notable Species

Bats

- 4.3.1 There is potential for trees at the site to support roosting bats, particularly some of the mature scattered trees and those within the broadleaved semi-natural woodlands. Daubenton's bat *Myotis daubentonii* and soprano pipistrelle *Pipistrellus pygmaeus* have been recorded within 2km of the site. During activity surveys from the public right of way within the golf course for HS2 in 2013, regular, low level, dispersed commuting and foraging activity from common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle bats was recorded, with occasional noctule *Nyctalus noctula* and Leisler's bat *Nyctalus leisleri* passes.
- 4.3.2 Trees with bat potential were recorded incidentally during the extended Phase 1 habitat survey (refer to Figure 1) and during bat scoping surveys conducted by the HS2 Early Works

Contractor (EWC) in 2017. Tree climbing and emergence and re-entry surveys are planned by the EWC to assess the value of the site to roosting bats.

- 4.3.3 The buildings at the site lacked suitable crevices for roosting bats, such as lifted roof tiles and gaps in the mortar. For example, the brickwork and clay tiles on the building within the golf course compound (B2) were in good condition. As such, the buildings were considered to be of negligible bat potential.
- 4.3.4 The site provides good opportunities for foraging and commuting bats, notably the woodland edges, ditches and ponds, Clacks Lane and wetland habitats in the western part of the site within West Ruislip Golf Course and Old Priory Meadows SBI.I.

Badger

- 4.3.5 The juxtaposition of woodland and grassland habitats suggests that the site could support badgers, with the woodland edges most likely to support setts. This species has also been recorded within 2km of the site. No signs of badgers were recorded incidentally during the survey.

Otter and Water Vole

- 4.3.6 The watercourses within and adjacent to the site provide suitable habitat for water vole and otter, particularly the River Pinn given the presence of earth banks, dense bankside vegetation and, with respect to otter, mature trees and woodland within close proximity.
- 4.3.7 Water vole has been recorded within 2km of the site (the specific location was not provided), but not otter. Water vole and otter surveys were undertaken on Ickenham Stream and the River Pinn for Hs2 in 2013 on sections of the watercourses to the south of the site. Neither water vole nor otter were recorded, with American mink *Neovison vison* recorded along the River Pinn. Taking this into consideration, as well as the limited suitability of Ickenham Stream, it was considered unlikely that water vole was present. However, as access was limited for otter surveys, it was concluded that otter may be present on occasion, most likely commuting along the watercourses. The EWC has since conducted water vole and otter surveys at the site and no signs were recorded to indicate the presence of either species.

Other Mammals

- 4.3.8 Other wild mammals are likely present on the site, such as red fox *Vulpes vulpes*, rabbit *Oryctolagus cuniculus* and hedgehog *Erinaceus europaeus*. Hedgehog has been recorded approximately 500m to the north of the site.
- 4.3.9 There are no records of hazel dormouse *Muscardinus avellanarius* within 2km of the site and given the lack of suitable habitat and connectivity to suitable woodland and hedgerows outside the site, there is considered to be limited potential for this species at the site.

Birds

- 4.3.10 There is potential for a wide range of bird species to nest and forage within the site, including kingfisher along the River Pinn, which is listed on Schedule 1 of the WCA. This species has been recorded within 2km of the site. Red kite have also been recorded within 2km of the site and are also listed on Schedule 1 of the WCA (as have redwing *Turdus iliacus* and fieldfare *Turdus pilaris* though neither species nest in this area of the UK). Other notable species recorded nearby that could occur at the site include starling *Sturnus vulgaris*, grey wagtail, house sparrow *Passer domesticus*, bullfinch *Pyrrhula pyrrhula* and skylark *Alauda arvensis*.

Reptiles

- 4.3.11 The mosaic of woodlands, rough grassland and wetland habitats provide suitable habitat for reptiles, notably slow worm *Anguis fragilis*, common lizard *Zootoca vivipara* and grass snake *Natrix natrix*. However, only slow worm has been recorded within 2km of the site. The predominance of well-managed amenity grassland fragments areas of suitable habitat, which is likely to limit the suitability of the site for reptiles.
- 4.3.12 Reptile surveys were carried out in June and July 2017 and slow worm was recorded (peak count of three). Surveys within areas of suitable habitat across the site are scheduled by the EWC.

Amphibians

- 4.3.13 The complex of wet ditches and ponds provide suitable breeding habitat for amphibians, including great crested newt and common toad *Bufo bufo*. Both species have been recorded within 2km of the site. Woodlands and rough grasslands also provide suitable terrestrial habitat, although similarly to reptiles, the vast expanses of amenity grassland are likely to reduce connectivity between potential breeding ponds and the suitability of the wider site for this species.
- 4.3.14 The EWC has completed great crested newt Habitat Suitability Indices (HSI) surveys and environmental DNA (eDNA) surveys on ponds within the golf course (including those outside the site) and a positive eDNA result was recorded for P₃ (Figure 1). Presence/absence surveys on this pond are underway, which have confirmed the presence of great crested newts.

Invertebrates and Plants

- 4.3.15 A cinnabar moth *Tyria jacobaeae* caterpillar was recorded incidentally on groundsel within the golf course compound. This species is listed on the former UK BAP as a priority species (research only) and on the Section 41 list of species of principal importance in conserving biodiversity due to a decline of 83% over 35 years. The mosaic of habitats at the site, notably the wetland habitats, marshy grassland and broadleaved semi-natural woodlands, have potential to support notable plant and invertebrate assemblages. A wide range of notable invertebrates and plants have been recorded within 2km of the site. This includes stag beetle

Lucanus cervus and white-letter hairstreak *Satyrrium w-album*, which both have potential to occur within woodland habitats at the site.

5 Evaluation and Recommendations

5.1 Further Surveys

- 5.1.1 Further surveys for bats, badgers, breeding birds, reptiles, great crested newts, invertebrates and notable plant species should be conducted to inform an assessment of impacts of the proposed development and requirements for mitigation and compensation. These surveys should be undertaken in accordance with the Ecological field survey methods and standards¹².

As previously highlighted, bat, great crested newt and reptile surveys have already been undertaken, are underway or are due to be completed by the HS2 EWC. The following further surveys have therefore been recommended:

- Bat activity and automated surveys, to assess the importance of the site for foraging and commuting bats and identify key flight lines;
- Badger survey, to record any setts, their status and signs of activity across the site;
- Breeding bird survey, to assess the importance of the breeding bird assemblage at the site;
- Invertebrate survey, focussing on habitats with potential to support notable invertebrate assemblages, such as the aquatic, woodland and marshy grassland habitats; and
- Botanical survey, as above focussed on important habitats and those with potential to support notable plant species.

5.2 Constraints

- 5.2.1 West Ruislip Golf Course and Old Priory Meadows SBI.I falls within the site and therefore could pose a constraint to development. In accordance with the London Plan and NPPF, the development should avoid adverse impact to the biodiversity interest of this site and deliver ecological enhancements. The proximity of Mad Field Covert, Railway Mead and the River Pinn SBI.II to the south means it could also pose a constraint and equally should be protected from adverse impacts. It is unlikely that other designated sites within the wider surrounding area will pose any constraints, including Ruislip Woods SSSI, NNR and SMI, given their distance from the site, the urban context of the site and the nature and scale of the works proposed.

- 5.2.2 The amenity grassland, bare ground and buildings are of low ecological value and therefore not likely to pose any constraints to development. However, the woodlands, scrub, neutral semi-improved and marshy grasslands and running and standing water have the potential to

¹² Ecological field survey methods and standards

support protected and notable species. Of particular note are the broadleaved semi-natural woodlands over the plantation woodlands, considering the presence of mature trees, understorey and deadwood habitats, which have potential to support valuable plant communities and provide improved opportunities for badgers, birds, reptiles, amphibians and invertebrates. Further surveys are recommended (refer to Section 5.1.1) to inform an assessment of the value of these habitats and the requirements for mitigation and compensation.

5.3 Mitigation Measures

- 5.3.1 The development should ensure that valuable habitat areas are protected and enhanced to ensure no net loss of biodiversity, in line with the NPPF. West Ruislip Golf Course and Old Priory Meadows SBI.I, should be retained and where possible enhanced.
- 5.3.2 Best practice guidelines should be followed throughout all stages of the development to protect existing wildlife in the area. This is likely to include obtaining appropriate species licenses prior to the commencement of works and implementing mitigation strategies to ensure compliance with wildlife legislation.
- 5.3.3 Requirements for mitigation will depend on the results of further surveys; however, standard embedded ecology measures (EEMs) include the implementation of the HS2 Code of Construction Practice; ideally undertaking clearance works outside the breeding bird season (March to August inclusive) or following a check for nesting birds; preventing unnecessary harm to wild mammals; the protection of trees in accordance with the recommendations of an arboricultural report and BS 5837:2012 Trees in relation to design, demolition and construction¹³; the removal and appropriate disposal of invasive species within the site, specifically Himalayan balsam and Giant hogweed; and the implementation of standard pollution prevention measures in accordance with Pollution prevention for businesses¹⁴.

5.4 Landscaping Strategy

- 5.4.1 The landscaping proposals should compensate for habitat loss associated with the proposed development. The strategy should improve habitat connectivity across the site, taking into consideration the results of protected species surveys. Specific recommendations are outlined below:
- Enhance West Ruislip Golf Course and Old Priory Meadows SBI.I, notably the River Pinn (to provide opportunities water voles, kingfishers, grey wagtail and otters), woodland and marshy grassland habitats;
 - Enhance Ickenham Stream through its diversion and the creation of a wetland

¹³ British Standards Institution (2012), BS 5837:2012 Trees in relation to design, demolition and construction – Recommendations

¹⁴ Department for Environment, Food & Rural Affairs and Environment Agency (2016), Guidance - Pollution prevention for businesses.

corridor with aquatic, bankside and riparian planting;

- Naturalise existing ditches and provide riparian planting;
- Incorporate interconnected ponds to provide habitat for great crested newts;
- Enhance the woodland along Clacks Lane to strengthen the corridor across the site;
- Create woodland with multiple layers, to include understory and ground flora;
- Provide wildflower meadows/rough grassland, including south-facing banks, to provide habitat for invertebrates and reptiles;
- Incorporate piles of deadwood both in woodlands and grassland to provide hibernacula for reptiles, amphibians and invertebrates;
- Incorporate native planting throughout; and
- Provide bird, bat and invertebrate boxes.

5.4.2 A landscape and habitat management plan should be prepared to inform the long-term management of the retained and newly created habitats. This should include the use of organic fertilisers, no pesticides and reduced management where possible outside the fairways.

6 Appendices

Appendix A: Legislation, policy and guidelines

Appendix B: Species list

Appendix A: Legislation, Policy and Guidelines

6.1 Legislation

- Wildlife and Countryside Act 1981 (as amended) (WCA) – this legislation comprises the primary means of protecting wildlife in the UK and provides the mechanism by which a number of international directives are implemented in the UK;
- Countryside and Rights of Way (CROW) Act 2000 – this act strengthens the details of the Wildlife and Countryside Act in relation to Sites of Special Scientific Interest (SSSI) and threatened species;
- The Conservation of Habitats and Species Regulations 2017 (Habitats and Species Regulations) – these regulations provide protection for European Protected Species and their habitats, such as bats and great crested newts;
- Natural Environment and Rural Communities (NERC) Act 2006 – the NERC Act puts an obligation on public authorities to have regard for the conservation of species and habitats of principal importance for the purpose of conserving biodiversity;
- Wild Mammals (Protection) Act 1996 – makes it an offence to intentionally cause wild mammals' any unnecessary suffering by certain methods, including crushing and asphyxiation; and
- Protection of Badgers Act 1992 – makes it an offence to intentionally capture, injure or kill a badger, cause any unnecessary cruelty or disturb badger setts.

Bats

6.1.1 All bat species are fully protected under the WCA and the Habitats and Species Regulations, which together make it an offence to:

- Intentionally or recklessly capture, kill or injure bats;
- Deliberately disturb bats (including when they are outside their roosts) or intentionally or recklessly disturb roosting bats; or
- Damage or destroy their roosts or intentionally or recklessly obstruct access to their roosts (whether bats are present or not).

6.1.2 Under the Habitats and Species Regulations, disturbance includes in particular any disturbance which is likely to impair their ability to survive; breed or reproduce; rear or nurture their young; or hibernate or to affect significantly the local distribution or abundance of the species.

Great Crested Newt

- 6.1.3 Great crested newt is fully protected under the WCA and Habitats and Species Regulations, which together make it an offence to:
- Intentionally or recklessly capture, kill, injure or disturb great crested newts; and
 - Damage or destroy a breeding site or resting place for great crested newt or intentionally or recklessly obstruct access to any structure or place used for shelter or protection.
- 6.1.4 Under the Habitats and Species Regulations, disturbance includes in particular any disturbance which is likely to impair their ability to survive; breed or reproduce; rear or nurture their young; or hibernate or to affect significantly the local distribution or abundance of the species.
- 6.1.5 Great crested newt is also listed under the former UK BAP and the Local BAP and is on the Section 41 list of species of principal importance in conserving biodiversity.

Otter

- 6.1.6 Otter is fully protected under the WCA and Habitats and Species Regulations, which together make it an offence to:
- Capture, kill, disturb or injure otters (on purpose or by not taking enough care);
 - Damage or destroy a breeding or resting place (deliberately or by not taking enough care); and
 - Obstruct access to their resting or sheltering places (deliberately or by not taking enough care).

Water Vole

- 6.1.7 Water vole is fully protected under the WCA, which makes it an offence to:
- Intentionally capture, kill or injure water voles;
 - Damage, destroy or block access to their places of shelter or protection (on purpose or by not taking enough care); and
 - Disturb them in a place of shelter or protection (on purpose or by not taking enough care).

Birds

- 6.1.8 All birds, their active nests and eggs are protected under the WCA. This legislation makes it an offence to kill, injure or take any wild bird or to take, damage or destroy the nest of any wild bird while that nest is in use or being built.

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

Common Reptiles

- 6.1.10 Common lizard, slow worm and grass snake, are listed on Schedule 5 of the WCA, which makes it illegal to deliberately or recklessly injure or kill these species. These species are also listed under the former UK BAP and are on the Section 41 list of species of principal importance in conserving biodiversity.

Common Amphibians

- 6.1.11 Common amphibians, including common toad, common frog *Rana temporaria* and smooth newt *Lissotriton vulgaris*, are only protected from sale under the WCA. Common toad is also listed under the former UK BAP and is on the Section 41 list of species of principal importance in conserving biodiversity.

6.2 Policy

The National Planning Policy Framework

- 6.2.1 The National Planning Policy Framework (NPPF)¹⁵ aims to protect and enhance sites of biodiversity value (in a manner commensurate with their statutory status) and minimise impacts on and provide net gains for biodiversity. This should be achieved by establishing coherent ecological networks that are more resilient to current and future pressures, contributing to the Government's objective to halt the overall decline in biodiversity. There has also been a range of conservation and enhancement principles established to guide planning processes and decisions.
- 6.2.2 Local planning authorities have been given responsibility to set the strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries. To protect and enhance biodiversity, plans should identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including designated sites, wildlife corridors and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation. Plans should also 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. If significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for,

¹⁵ Department for Communities and Local Government, (2018); 'National Planning Policy Framework.'

then planning permission should be refused. The NPPF is implemented at the local level in this instance by the Hillingdon Local Plan¹⁶.

The England 2020 Biodiversity Strategy

6.2.3 The England Biodiversity Strategy 2020¹⁷ was published by Defra in response to the National Environment White Paper¹⁸. It sets the Government's objectives for halting the net loss of biodiversity by 2020 and promotes the recognition of the intrinsic value of the benefits of biodiversity to society.

6.2.4 It emphasises the landscape-scale and ecosystems approach for the demonstration of the benefits obtained from ecosystem services, their interactions and feedbacks rather than a species approach in order to establish more coherent and resilient ecological networks.

London Plan

6.2.5 The London Plan¹⁹ provides the overall strategic plan for London, setting out an integrated economic, environmental, transport and social framework for the development of London over the next 20–25 years. Key policies of relevance to the redevelopment comprises:

- Policy 2.18 Green infrastructure: the multi-functional network of green and open spaces - Development proposals should incorporate appropriate elements of green infrastructure that are integrated into the wider network and encourage the linkage of green infrastructure;
- Policy 5.10 Urban greening - Development proposals should integrate green infrastructure from the beginning of the design process to contribute to urban greening, including the public realm. Elements that can contribute to this include tree planting, green roofs and walls, and soft landscaping. Major development proposals within the Central Activities Zone (which falls within the site) should demonstrate how green infrastructure has been incorporated;
- Policy 5.11 Green roofs and development site environs - Major development proposals should be designed to include roof, wall and site planting, especially green roofs and walls where feasible, to enhance biodiversity where possible;
- Policy 7.19 Biodiversity and access to nature – Development should make a positive contribution to the protection, enhancement, creation and management of biodiversity and prioritise achieving targets in Biodiversity Action Plans (BAPs). Development proposals should give sites of borough and local importance for nature conservation the level of protection commensurate with their importance. When

¹⁶ Hillingdon Council, (2018); 'Hillingdon Local Plan 2018.'

¹⁷ Defra, (2011); 'Biodiversity 2020: A strategy for England's wildlife and ecosystem services.'

¹⁸ HM Government, (2011); 'The Natural Choice: securing the value of nature.'

¹⁹ Greater London Authority (GLA), (2017); 'The London Plan. The Spatial Development Strategy for London. Consolidated with Alterations since 2011.'

considering proposals that would affect directly, indirectly or cumulatively a site of recognised nature conservation interest, the development should firstly avoid adverse impact to the biodiversity interest, then minimize impact and seek mitigation and only in exceptional cases where the benefits of the proposal clearly outweigh the biodiversity impacts, seek appropriate compensation.

- Policy 7.21 Trees and woodlands - Trees and woodlands should be protected, maintained, and enhanced, following the guidance of the London Tree and Woodland Framework²⁰ (or any successor strategy). Any loss of trees as a result of development should be replaced following the principle of 'right place, right tree' and wherever appropriate additional trees should be planted, particularly large-canopied species; and
- Policy 7.5 Public realm - Opportunities for greening (such as through planting of trees and other soft landscaping wherever possible) should be maximised.

6.2.6 The Draft London Plan²¹ is due to be published in the winter of 2019/20 and therefore is a material consideration in planning decisions. The principles outlined above have been included in the draft document. In addition, the Mayor has developed a generic Urban Greening Factor model to assist boroughs and developers in determining the appropriate provision of urban greening for new developments.

6.3 The Mayor's Biodiversity Strategy

6.3.1 The Mayor's Biodiversity Strategy²² outlines criteria and procedures for identifying land of importance for London's biodiversity for protection in Local Development Frameworks and identifying areas deficient in access to nature. The strategy aims to ensure London's residents all have access to biodiversity by increasing and protecting London's green spaces and habitats. The strategy sets out to promote such protection due to biodiversity's intrinsic value, as well as for the functional and economic benefits which green space can provide. The strategy highlights biodiversity conservation's essential role in sustainable development, which is a major aim of The London Plan.

6.4 Hillingdon Local Plan: Part 1

6.4.1 The Hillingdon Local Plan: Part 1 sets out Strategic Policies which aim to create sustainable communities and was adopted in 2012. Section 8.17 states the importance of Hillingdon's open spaces, 4,970 hectares of Green Belt and Blue Ribbon Network in characterising the borough, helping to tackle climate change, and promoting both a healthy way of life and sustainable development. The Council recognises that Hillingdon contains a diversity of habitats, linked by natural and man-made corridors that enable flora and fauna to migrate

²⁰ Greater London Authority (GLA) (2005); 'Connecting Londoners with Trees and Woodlands. A Tree and Woodland Framework for London.'

²¹ GLA, (2017); 'The London Plan. The Spatial Development Strategy for Great London. Draft for Public Consultation.'

²² GLA (2002); 'The Mayor's Biodiversity Strategy - Connecting with Nature.'

through London and is committed to protecting the characters of these spaces. This is reflected in Policy BE1: Built Environment, which states that developments should aim to “enhance and protect biodiversity through the inclusion of living walls, roofs and areas for wildlife” and not result in “inappropriate development of gardens and green spaces that erode the character and biodiversity of suburban areas”.

- 6.4.2 The Council will also protect, and seek to secure additional, trees and vegetation. Trees and vegetation which are to be retained should be satisfactorily protected during the demolition and construction phase of development in line with BS5837:2012 ‘Trees in relation to Design, Demolition and Construction’²³ and positively integrated as part of the site layout. Replacement trees or vegetation should be provided and additional trees and vegetation should be incorporated wherever possible.

6.5 Guidance

UK Post-2010 Biodiversity Framework

- 6.5.1 The publication of the Convention of Biological Diversity’s Strategic Plan for Biodiversity 2011–2020²³ and its 20 ‘Aichi targets’ and the launch of the EU Biodiversity Strategy²⁴ in May 2011 have led to a change in strategic thinking with respect to the UK’s approach to biodiversity conservation and the preparation of the UK Post-2010 Biodiversity Framework²⁵.
- 6.5.2 This document sets out a structure for action across the UK between now and 2020, to help deliver the Aichi targets and the EU Biodiversity Strategy. A major commitment is to produce a National Biodiversity Strategy and/or Action Plan (NBSAP). Although the Biodiversity Framework superseded the UK BAP, the lists of priority species and habitats continue to provide valuable reference sources with respect to national priorities for conservation while a NBSAP is being produced.
- 6.5.3 Relevant priority species that could potentially be present on site includes otter *Lutra lutra*, water vole, slow worm, great crested newt and bats *Chiroptera* sp.. The UK BAP is relevant in the context of Section 40 of the NERC Act 2006, meaning that priority species are material considerations in planning.

London Biodiversity Action Plan

- 6.5.4 The London BAP²⁶ was produced by the London Biodiversity Partnership and identifies the conservation priorities at a regional level. Habitats that are of particular importance for biodiversity in London have their own Habitat Action Plan (HAP). Those of relevance to the site include present on site include parks and urban green spaces, rivers and streams, standing

²³ Convention on Biological Diversity, (2010); ‘Strategic Plan for Biodiversity 2011–2020.’

²⁴ European Commission, (2011); ‘The EU Biodiversity Strategy to 2020.’

²⁵ Joint Nature Conservation Committee and Defra, (2012); ‘UK Post-2010 Biodiversity Framework Published by JNCC and Defra on behalf of the Four Countries’ Biodiversity Group.’

²⁶ Greenspace Information for Greater London, (2018); ‘London’s Biodiversity Action Plan.’ Available at: <http://www.gigl.org.uk/london-biodiversity-action-plan/>

water and woodland. Other important habitats listed include built structures, fen, marsh and swamp and open landscapes with ancient/old trees.

- 6.5.5 Priority species with potential to occur on site and which have their own Species Action Plans (SAPs) include water vole, bats, reptiles and house sparrow. Other important species listed which could be present on site include grey heron *Ardea cinerea* and otter.

Section 41 List

- 6.5.6 The Secretary of State has published a list of living organisms and habitats of principal importance for the purpose of conserving biodiversity, as required under Section 41 of the NERC Act 2006. This is referred to as the Section 41 list and includes the priority species and habitats listed under the former UK BAP.
- 6.5.7 Section 41 also states that the Secretary of State must take such steps as appear to be reasonably practicable to further the conservation of the living organisms and types of habitat included in the list, or promote the taking by others of such steps.

Birds of Conservation Concern

- 6.5.8 A total of 246 bird species have been assessed against a set of objective criteria to place each on one of three lists indicating an increasing level of conservation concern¹⁷. In the UK, there are 52 species on the red list, 126 on the amber list and 68 on the green list.
- 6.5.9 Seven red list species have been recorded within 2km of the site; lesser redpoll *Acanthis cabaret*, lesser spotted woodpecker *Dendrocopos minor*, skylark *Alauda arvensis*, house sparrow *Passer domesticus*, grey wagtail, linnet *Linaria cannabina* and yellowhammer *Emberiza citrinella*.

Appendix B: Species List

Common name	Latin name	Broadleaved woodland – semi-natural	Broadleaved woodland - plantation	Broadleaved/ parkland scattered trees	Scrub - dense	Scrub - scattered	Semi-improved neutral grassland	Marshy grassland	Amenity grassland	Introduced shrub	Hedge species-poor	Bare ground
Alder	<i>Alnus glutinosa</i>			Y								
Annual meadow grass	<i>Poa annua</i>								Y			
Ash	<i>Fraxinus excelsior</i>	Y	Y	Y								
Blackthorn	<i>Prunus spinosa</i>	Y			Y	Y						
Bluebell	<i>Hyacinthoides non-scripta</i>	Y										
Bramble	<i>Rubus fruticosus</i>	Y	Y	Y	Y	Y		Y				
Broad-leaved dock	<i>Rumex obtusifolius</i>	Y						Y				
Buttercup	<i>Ranunculus sp.</i>	Y										
Canadian fleabane	<i>Erigeron canadensis</i>											Y
Celandine	<i>Chelidonium majus</i>	Y										
Cherry laurel	<i>Prunus laurocerasus</i>									Y	Y	
Cleavers	<i>Galium aparine</i>	Y			Y			Y				
Common nettle	<i>Urtica dioica</i>	Y			Y			Y				
Cow parsley	<i>Anthriscus sylvestris</i>	Y			Y			Y				

Common name	Latin name	Broadleaved woodland – semi-natural	Broadleaved woodland - plantation	Broadleaved/ parkland scattered trees	Scrub - dense	Scrub - scattered	Semi-improved neutral grassland	Marshy grassland	Amenity grassland	Introduced shrub	Hedge species-poor	Bare ground
Creeping buttercup	<i>Ranunculus repens</i>						Y					
Creeping thistle	<i>Cirsium arvense</i>							Y				
Cuckooflower	<i>Cardamine pratensis</i>						Y					
Daisy	<i>Bellis perennis</i>								Y			
Dandelion	<i>Taraxacum officinale</i>						Y		Y			
Dogwood	<i>Cornus sanguinea</i>	Y										
Elder	<i>Sambucus nigra</i>	Y										
English elm	<i>Ulmus procera</i>	Y										
Field maple	<i>Acer campestre</i>	Y	Y									
Forget me not	<i>Myosotis arvensis</i>	Y										
Garlic mustard	<i>Alliaria petiolata</i>	Y						Y				
Giant hogweed	<i>Heracleum mantegazzianum</i>							Y				
Goat willow	<i>Salix caprea</i>	Y										
Green alkanet	<i>Pentaglottis sempervirens</i>	Y										
Ground ivy	<i>Glechoma hederacea</i>	Y										

Common name	Latin name	Broadleaved woodland – semi-natural	Broadleaved woodland - plantation	Broadleaved/ parkland scattered trees	Scrub - dense	Scrub - scattered	Semi-improved neutral grassland	Marshy grassland	Amenity grassland	Introduced shrub	Hedge species-poor	Bare ground
Groundsel	<i>Senecio vulgaris</i>											Y
Hawthorn	<i>Crataegus monogyna</i>	Y			Y	Y						
Hazel	<i>Corylus avellana</i>				Y							
Hedge bindweed	<i>Calystegia sepium</i>											Y
Hedge mustard	<i>Sisymbrium officinale</i>											Y
Herb robert	<i>Geranium robertianum</i>	Y										
Himalayan balsam	<i>Impatiens glandulifera</i>	Y										
Hoary plantain	<i>Plantago media</i>								Y			
Hogweed	<i>Heracleum sphondylium</i>				Y			Y				
Holly	<i>Ilex aquifolium</i>	Y										
Hornbeam	<i>Carpinus betulus</i>	Y										
Hybrid black poplar	<i>Populus x canadensis</i>			Y								
Ivy	<i>Hedera helix</i>	Y										
Leyland cypress	<i>Cupressus x leylandii</i>										Y	

Common name	Latin name	Broadleaved woodland – semi-natural	Broadleaved woodland - plantation	Broadleaved/ parkland scattered trees	Scrub - dense	Scrub - scattered	Semi-improved neutral grassland	Marshy grassland	Amenity grassland	Introduced shrub	Hedge species-poor	Bare ground
Lime	<i>Tilia sp.</i>	Y										
Lords and ladies	<i>Arum maculatum</i>	Y										
Meadowsweet	<i>Filipendula ulmaria</i>							Y				
Pedunculate oak	<i>Quercus robur</i>	Y		Y			Y					
Scots pine	<i>Pinus sylvestris</i>	Y										
Silver birch	<i>Betula pendula</i>		Y	Y	Y							
Sow thistle	<i>Sonchus spp.</i>											Y
Teasel	<i>Dipsacus fullonum</i>											Y
Timothy	<i>Phleum pratense</i>							Y				
White clover	<i>Trifolium repens</i>								Y			
White dead nettle	<i>Lamium album</i>							Y				
White poplar	<i>Populus alba</i>			Y								
Wild garlic	<i>Allium ursinum</i>	Y										
Willow	<i>Salix sp.</i>	Y		Y								
Willowherb	<i>Epilobium sp.</i>							Y				
Yarrow	<i>Achillea millefolium</i>						Y					
orkshire fog	<i>Holcus lanatus</i>						Y					