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ECOLOGICAL ASSESSMENT
Hillingdon Gardens

September2019

BMD.19.020.RPE/P1.801.RevA-.Ecology

DOCUMENT HISTORY

Project Number: 19.020		Document Reference: BMD.19.020.RPE/P1.801.-.ecology			
Revision	Purpose of Issue	Originated	Technical Reviewed	Approved	Date
-	Planning	MH	HSM	JP	19/07/2019
A	Planning	MH	HSM	JP	16/09/2019

Declaration of compliance with professional code of ethics or conduct
The information which we have prepared and provided is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bonafide opinions.

Every reasonable attempt has been made to comply with the relevant best practice guidelines and BS42020:2013 (Biodiversity: Code of practice for planning and development).

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EXECUTIVE SUMMARY

Client.....	Inland Homes
Consultant.....	Bradley Murphy Design Ltd.

SITE

Location	Hillingdon Gateway, Freezeland Way, Uxbridge, Hillingdon, London. UB10 9QE.
National Grid Reference	Approx. centre TQ 07888 8486.
Over-view.....	The Site comprises hardstanding, broadleaved plantation woodland, scattered trees, tree lines, scattered scrub, tall ruderals and poor semi-improved grassland.
Landscape context	The Site is located within an urban landscape north of Hillingdon.

DEVELOPMENT & PLANNING BACKGROUND

Proposed works	Proposals entail vegetation clearance, access creation, building of a residential-led development with associated hard landscaping for parking in addition to communal gardens and a green space.
Planning stage.....	Detailed planning application.

ECOLOGICAL BACKGROUND

General	An Ecological Assessment and Initial Bat Survey was conducted in 2018 by Bradley Murphy Design: BMD.14.052.RPE/P1.801 EcoAss&Bat. This assessment was for a smaller area than that included within the current proposed redline boundary. A reptile survey is also being undertaken on Site and is reported separately in BMD.19.020.RPE-P2.802.
Most recent baseline	The key results from the 2018 assessment were: The Site comprises hardstanding areas with extensive colonising vegetation and unmanaged former amenity areas and scattered trees. Small portions of broadleaved plantation woodland are also present. The Site was considered to have the potential to support the following Protected and Notable Species: bats (roosting/foraging/commuting), nesting birds, badger (foraging/commuting), great crested newt (limited terrestrial opportunities only), reptiles, stag beetle and species included in the LISI plant species.

SURVEY

Objectives	1. To provide an ecological baseline, including nature conservation value, of the site with a focus on habitats and potential for protected and notable species. 2. To identify the need and level of more detailed species-specific surveys for a planning application. 3. To guide the initial stages of master planning and indicative mitigation required to ensure net biodiversity gain is achieved and favourable conservation status of species utilising the site as a result of the proposed development. 4. To provide specialist advice and make appropriate recommendations to ensure compliance with wildlife law and recognised best practice.
Approach.....	Desk based assessment using the online *MAGIC* database and data from the Local Biological Record Centre (Greenspace Information for Greater London) Habitat assessment – based on JNCC Phase 1 Habitat Survey Evaluation of habitats based on the FEPs
Date	July 2019.
Results.....	The Site was dominated by hardstanding comprising the foundations of former buildings alongside former hard and soft landscaped areas and a small field parcel to the east. Boundary features were present delineating the two distinct sections of the site. Habitat present included; hardstanding, bare ground, spoil piles, scattered scrub, tall ruderal, poor semi-improved grassland, plantation woodland, treelines and scattered trees. The nearest statutory site was Yeading Woods LNR located approximately 1 km SE of the Site. The Site incorporated a small field parcel within the north west corner of the non-statutory designated site Ickenham Marsh, Austin's Lane Pastures and Freezeland Covert SINC (Borough Importance Grade 1). No Priority Habitats occur on or adjacent to the Site.

	The Site is known to support a population of slow worms and has the potential to support the following Protected and Notable Species: bats (roosting/foraging/commuting), nesting birds, badger (foraging/commuting), great crested newt (limited terrestrial opportunities only), reptiles, stag beetle and invasive/ LISI plant species.
Conclusions	The development of the site is not considered to have a negative ecological impact on the local area if best practice and the recommendations outlined in this report are followed.

RECOMMENDATIONS

The following surveys will be required to fully inform a planning application and to refine the extent and implications of ecological constraints to the proposed development: Bat and Reptile surveys.

Opportunities for enhancement presented by the proposals include the use of appropriate native planting within the proposals and the provision species-specific enhancements: bat boxes, bird boxes and stag beetle loggeries.

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APPENDICES

TABLES

1. INTRODUCTION

1.1 Background Information

1.1.1 Bradley Murphy Design (BMD) was commissioned by Inland Homes in June 2019 to undertake an updated Ecological Assessment of a Site at Uxbridge, Hillingdon, London, UB10 9QE. The Site, hereafter referred to as 'the Site', is approximately centred on national grid reference: TQ 0788 8486 and covers approximately 3.4 ha (the application area is approximately 2.54 ha).

1.1.2 This report provides an update to the last ecological assessment of the Site conducted in November/December 2018 by BMD: Ecological Assessment and Initial Bat Scoping Assessment (BMD.14.052.RPE/P1.801 EcoAss&Bat). Since the 2018 assessment the Site boundary has been redrawn to incorporate additional land to the south and east of the Site. Some Site clearance works (removal of vegetation and spoil piles from the central portion of the Site) has also been undertaken. A plan depicting the Site's location is provided in the Appendix: Plans.

1.1.3 The following assessments were completed between June – July 2019:

- Desk based assessment.
- Phase 1 habitat survey.

1.1.4 The reptile survey recommended in the 2018 ecological assessment is underway at the time of writing and will be reported separately.

1.1.5 This report presents the approach, results and evaluation of the assessments and survey undertaken at the Site in order to determine the ecological baseline and nature conservation value of the Site. The data will:

- Enable the identification of the need and level of more detailed species-specific surveys where required for a successful determination of a planning application
- Enable potential ecological constraints to the proposed development to be identified
- Further guide the master planning to ensure that net biodiversity gain is met (an obligation of the NPPF, 2019) through design and mitigation hierarchy (avoid, mitigate, compensate).

1.2 Proposed Development

1.2.1 Construction of a residential-led, mixed-use development comprising buildings of between 2 and 11 storeys containing 513 units (Use Class C3); flexible commercial units (Use Class B1/A1/A3/D1); associated car (164 spaces) and cycle parking spaces; refuse and bicycle stores; hard and soft landscaping including a new central space, greenspaces, new pedestrian links; biodiversity enhancement; associated highways infrastructure; plant; and other associated ancillary development.

1.3 Site Context

Historic Context

1.3.1 In the late 19th century the area was a rural landscape of fields, small woodlands and scattered buildings. By the 1930's, Hillingdon had been established and the area was dominated by urbanisation to the south, south-west and north-west of the Site. By the 1960's a public house had been built on the Site. The Site was developed further by the late 1980's and the A40 motorway was present directly north of the Site, forming an at least semi-permeable wildlife barrier. By around 2010 the buildings on Site had been demolished and the Site began to become derelict.

Present Context

1.3.2 Arterial roads are present to the immediate north, south and west whilst the horse grazed parcel continues to the east. Residential development dominated land use to the north and south, agricultural field parcels dominate to the east and west with RAF Northolt beyond to the east and further residential developments to the west.

1.3.3 A single pond was located at the eastern end of Ickenham Marsh, Austin's Pasture and Freezeland Covert Site of Nature Conservation Interest (SINC), approximately 250 m east to the site boundary.

1.4 Ecological Context

1.4.1 An Ecological Assessment and Initial Bat Assessment was conducted by Bradley Murphy Design in 2018. At the time the Site comprised hardstanding areas with extensive colonising vegetation, unmanaged former amenity areas and scattered trees. Habitats present included; amenity grassland, poor semi-improved grassland, broadleaved plantation woodland, dense scrub, introduced shrubs, tall ruderal, spoil piles, bare ground and hardstanding.

1.4.2 Habitat with potential to support bats (roosting/foraging/commuting), nesting birds, badger (foraging/commuting), great crested newt (limited terrestrial opportunities only), reptiles and stag beetle were identified. A number of invasive species were also identified including species on the London Invasive Species Inventory (LISI) and Schedule 9 of Wildlife Countryside Act 1981 (as amended).

1.4.3 The report recommended a reptile survey to determine the status of the species group on Site and a fixed vantage point survey of a tree assessed as having 'Moderate' bat roosting potential. At the time of writing the reptile survey is ongoing and slow worm have been confirmed as present.

1.4.4 Since the 2018 study the central section of the Site has been subject to clearance works. Spoil piles, dense scrub, poor semi-improved grassland, scattered trees and shrubs have been cleared and a mature willow assessed as having 'Low' bat roosting potential has been lost as a result. The site boundary has also now been realigned to incorporate land to the south and a small rectangular field parcel with the adjacent Ickenham Marsh, Austin's Pasture and Freezeland Covert SINC to the east.

1.5 Compliance with Policy, Guidance and Legislation

1.5.1 A summary of national planning policy and wildlife legislation relating to development projects in England is provided in Appendix A. The protocols, evaluations and recommendations contained within this report were made in accordance with these policies and legislation.

1.5.2 The following local planning policy documents and policies are of relevance to the Site (a summary is provided in Appendix A):

- The Natural Environment and Rural Communities (NERC) Act (2006)
- The National Planning Policy Framework (2019)
- Hillingdon Local Plan (Part 1 – Strategies Policies) (2012)
    - **Policy EM7:** Biodiversity and geological conservation; and
- Strategic Objective 8
- The London Plan (2016)
    - **Policy 7.19:** Biodiversity and access to nature
- The Draft New London Plan (2019)
    - **Policy G1**: Green Infrastructure;
    - **Policy G4**: Open space;
    - **Policy G5**: Urban greening;
    - **Policy G6**: Biodiversity and access to nature; and
    - **Policy G7**: Trees and woodland.
- The London Biodiversity Action Plan

2. APPROACH

2.1 Introduction

2.1.1 This report has been produced with reference to current guidelines for ecological assessments (e.g. CIEEM, 2017 and 2017a) although adapted to be appropriate for the conditions on Site. Reference was also made to BS42020:2013: Biodiversity – Code of Practice for Planning and Development. The assessment comprised the following:

- Desk study
- Extended Phase 1 Habitat Survey.

2.1.2 Table 2.1 summarises the geographical extent of the study.

Table 2.1 Geographical extent of study

Element	Study area
Desk study	1 – 5 km. See Table 2.2 for specific details
Detailed Extended Phase 1 Habitat Survey	Site boundary
Local site context (broad habitat types)	Approx. 50 m from Site boundary (identified from within Site only)

2.1.3 Full survey methodologies are provided in Appendix B and summarised below. Details of dates, surveyors, weather conditions and a review of survey limitations are provided in Appendix C. Definitions of technical terms used in this report are provided in the Glossary in Section 8. Common names of species are used throughout the report with scientific names provided in Section 8.2.

2.2 Desk Study

2.2.1 The desk study involved gathering and analysing existing ecological focused data within the site boundary and extending to 5 km. The results of the desk study aid in the interpretation of the survey results. Table 2.2 provides a summary of the data and their sources reviewed in the desk study.

2.3 Extended Phase 1 Habitat Survey

2.3.1 An Extended Phase 1 Habitat Survey was undertaken at the Site in accordance with industry standards (JNCC, 2010) and best practice guidance although adapted to be appropriate to the Site.

Table 2.2 Desk study data sources

Data[1]	Search area	Source[2]	Justification of search area
Species			
Protected & Notable Species	2 km	A. B. F	The Site is anticipated to have some ecological value and the effect of works is thought to be minimal as the habitats on Site are common and widespread. Due to the Site's size and the habitats anticipated to be present, it is unlikely to support any significant populations of species, however small numbers may use the Site.
European Protected Species Licence Applications (excl. bats)	2 km	B	There is potential that the Site provides terrestrial habitat for great crested newts. Impacts on newt populations/ meta populations can be accumulative arising from other developments off Site. A review of licence applications within the local area can provide indicative implications if great crested newt habitat is confirmed on Site. It also helps in reviewing the conservation status of the species in the area.
European Protected Species Licence Applications (bats)	5 km	B	There is potential that the Site supports features that may be used by bat species and that would be lost through the works. Bats can travel a number of kilometres from their roosts in a single night to forage. A wider search area provides an indication of the potential value the Site may have for foraging bats based on known roosts that have been affected by other development in the area.
Non-native Invasive Species	2 km	A	Potential for invasive species to be present given the history of the site and legacy of fly tipping.
Habitats			
UK Priority Habitats	1 km	B. D	The Site is anticipated to have some ecological value, however the effect of works is thought to be minimal as the habitats on Site are common and widespread.
Ancient Woodland	1 km	B	
Other notable habitats	1 km	A, B, E	
Change over time/landscape context	1 km	C	To provide an indication of ecosystem connectivity into the wider landscape and subsequent movement of protected and notable species.
Sites			
Statutory Protected Sites – Impact RISK Zones	Site	B	To assess whether any SSSI/SACs are likely to be impacted upon by the works.
Non-statutory Protected Sites (e.g. LWS)	2 km	A	As stated for habitats above.
Statutory Protected Sites	5 km	B	These sites may have been designated for their populations of European Protected Species (EPS). As the Site has potential to support EPS a wider consideration for statutory protected sites is required.

Notes

[1] See glossary for definitions and species and habitats considered.

[2] A. Local Biological Records Centre: Greenspace Information for Greater London.
B. *MAGIC* (Multi-Agency Geographic Information for the Countryside) [accessed 02/07/2019].
C. Readily available aerial images and current/historic map sources
D. Draft Natural England Open Mosaic Habitats Inventory Database [downloaded 02/07/2019]
E. Woodland Trust Ancient Tree Inventory
F. Natural England Class Licence database [downloaded July 2019]

2.4 Limitations

2.4.1 A summary of all limitations considered is provided in Appendix C.

2.4.2 There were no limitations related to the ecological assessment.

2.5 Evaluation and Review

2.5.1 Upon completion of the desk study and field surveys the evaluation and review will consider each of the following:

- Habitats
  - reviewed in relation to S41 Priority Habitats descriptions
  - reviewed in relation to Local Biodiversity Plans
  - condition assessed using criteria used to inform FEPs (i.e. that used in Biodiversity Impact Assessment Matrices)
  - potential to support protected and notable species
- Species – focusing on protected and notable species
  - evidence on Site
  - potential to occur on Site based on habitats, connectivity and known records
- Potential constraints to development (legal and policy implications relating to wildlife)
- Potential for biodiversity enhancement.

2.5.2 The majority of impacts associated with development relate to species, including through habitat loss, fragmentation and deterioration, as well as direct harm and indirect effects. Therefore, until any necessary species-specific surveys, based on the outcome of this habitat focused ecological assessment, are completed it is not feasible to identify specific impacts in relation to developing the Site.

3. RESULTS

Desk Study

3.1.1 Full documentation of the data considered as part of this Ecological Assessment is provided in Appendix D. This section presents the key findings of significance to development at the Site. Species records are considered within the last 10 years (from date of desk study). The exception to this is species that are typically under recorded and/or have low dispersal rates, such as dormouse and white clawed-crayfish. Other exceptions would be species likely to have strong associations with the habitats on site, such as black redstarts and derelict buildings and structures on urban sites.

Statutory designated sites of nature conservation importance

3.1.2 The Site itself does not lie within any statutory designated sites of nature conservation importance. Details of the designated sites returned by the desk study are provided in Table 3.1.

Table 3.1 Statutory designated sites of nature conservation importance within 2 km of the site, extending to 5 km for sites designated for bats

Site	Designation[1] & area	Proximity (distance/direction) & connectivity to Site	Summary description
Yeading Woods	LNR 31.59 ha	Approx. 1 km SE Separated from the Site by urbanisation and arable land parcels.	Yeading Woods is a reserve containing a small meadow, river bank and coppiced woodland that contains species including broad-leaved helleborine orchard and bluebells during spring. Kingfisher and the continental wasp spider have also been recorded.
Fray's Farm Meadows	SSSI 26.3 ha	Approx. 2 km NW Separated from the Site by urbanisation with woodland parcels acting as a stepping stone connection	Fray's Farm Meadows SSSI hosts one of the last remaining examples of unimproved wet alluvial grassland within Greater London and Colne Valley. The meadows host a variety of grass species, dragonflies, butterflies and birds including snipe, lapwing, teal and shoveler.
Fray's Valley	LNR 71.87 ha	Approx. 2.1 km NW Separated from the Site by urbanisation and arable land with small woodland pockets acting as a stepping stone	Fray's Valley contains Frays river and is regarded as a wildlife rich LNR due to the presence of species including water vole, snipe, ragged robin, slow worm, harvest mouse, willow and banded demoiselle.
Yeading Brook Meadows	LNR 5.69 ha	Approx. 2.1 km SE Separated from the Site by extensive parcels of arable land	Yeading Brook Meadows hosts a variety of wild flowers and grasses which attract an array of invertebrates including shield bugs, skipper butterflies, moths and Roesel's bush-cricket. Other species of interest at the Site include skylark, snipe, common frogs, small heath, common spotted-orchid, five-spotted burnet moth and narrow-leaved water-dropwort.
Denham Lock Wood	SSSI 6.82 ha	Approx. 2.7 km NW Stepping stone connections of	Denham Lock Wood SSSI hosts a diverse open mire and wet woodland which are both rare habitats for Greater London. The Site occupies a poorly drained are of

Site	Designation[1] & area	Proximity (distance/direction) & connectivity to Site	Summary description
		woodland and grassland through urbanisation	Colne Valley which has resulted in periodic flooding and the establishment of open flood plain mire.
Yeading Meadows	LNR 29.96 ha	Approx. 3.1 km SE Stepping stone connections of woodland and grassland through urbanisation	Yeading Brook Meadows consists of neutral grassland fields either side of Yeading Brook. The meadows also consist of wet, marshy grassland and areas of dry meadowland. Due to habitats present, diverse assemblages of plants, tall herbaceous, scrub and hedgerow habitat occur.
Denham Quarry Park	LNR 29.61 ha	Approx. 3.2 km NW Stepping stone connections of woodland and grassland through urbanisation	Denham Quarry Park hosts an array of wildlife including kingfishers, herons, and damselflies and dragonflies over wet meadows during summer.
Denham Country Park	LNR 19.82 ha	Approx. 3.4 km NW Stepping stone connections of woodland and grassland through urbanisation	Denham Country Park is home to a mixture of wildlife including herons and kingfishers and damselflies and dragonflies over the wet meadows during summer.
Islip Manor	LNR 23.75 ha	Approx. 3.5 km E Separated from the Site by arable land, roads and airfield	Islip Manor is a wet meadow that contains rich mosaic habitat of varying grasses including over 20 grasses and ten leguminous species. The Site hosts a diverse range of flora species.
Ruislip Woods	SSSI 307.45 ha	Approx. 3.7 km N Separated from the Site by urbanisation	Ruislip Woods SSSI forms ancient semi-natural woodland hosting some of the larger parcels that remain within Greater London. The Woods include four main parcels; Bayhurst, Mad Bess, Copse and Park Woods which host a large abundance of invertebrates including nationally rare and nationally scarce species and birds including hawfinch, willow tit and three woodpecker species.
Ruislip	LNR 3.74 ha	Approx. 4 km NE Separated from the Site by urbanisation	Ruislip is a LNR that hosts a variety of habitats including woodland, areas of open heath, neutral grassland and acidic grassland. The Site also supports tall fen, willow carr and swamp communities.
Kingcup Meadows & Oldhouse Wood	SSSI 12.9 ha	Approx. 4 km E Stepping stone connection of woodland and grassland habitats	Kingcup Meadows & Oldhouse Wood SSSI host a mosaic of habitats including woodland, semi/unimproved meadowland and unimproved pastures with the Site adjacent to the River Alderbourne. The Site is home to a variety of flora with very little-known regarding faunal species at the Site.
Mid Colne Valley	SSSI 147.73 ha	Approx. 4.7 km NW Stepping stone connection of woodland and grassland habitats	Mid Colne Valley SSSI is of significant ornithological interest due to the diversity of breeding woodland, wetland birds and winter wildfowl. One of the last remaining chalk grassland habitats for Greater London are also located at the Valley. The Site hosts a variety of woodland birds including tawny owl, lesser whitethroat, nuthatch, kestrel and woodpecker sp.
Notes			

Site	Designation[1] & area	Proximity (distance/direction) & connectivity to Site	Summary description
1. Definitions of abbreviations provided in the Glossary.			

3.1.3 The Site lies within the Impact Risk Zones (IRZ) of Fray's Farm Meadows SSSI and Denham Lock Wood SSSI. The following have been identified as potential risks and causes of risk to this designated Site if such development takes place within the area under assessment:

- **Infrastructure:** Airports, helipads and other aviation proposals;
- **Air pollution:** Livestock and poultry units with floorspace >500 m^2, slurry lagoons >750 m^2 and manure stores >3500t;
- **Minerals, oil & gas:** Planning applications for quarries, including new proposals, Review of Minerals Permissions (ROMP), extensions, variations to conditions etc. oil and gas exploration/extraction.

Non Statutory designated sites of nature conservation importance

3.1.4 A small field parcel in the eastern portion of the Site covering approximately 0.5 ha is located within the Ickenham Marsh, Austin's Lane Pastures and Freezeland Covert SINC (HiBI13). The site comprised a mosaic of fields, old hedges, woodlands, ponds and wetland. This SINC is approximately 121 ha and graded as 'Borough Grade 1'.

3.1.5 Other non-statutory sites within 2 km of the site are detailed in Table 3.2.

Table 3.2 Non Statutory designated sites of nature conservation importance within 2 km of the site

Site	Designation[1] & area	Proximity (distance/direction) & connectivity to Site	Summary description[2]
Uxbridge Common Meadows HiBII01	SINC Borough Grade II 24.74 ha	Approx. 0.27 km W Separated from the Site by urbanisation	*"A large area of old meadows, with the River Pinn meandering through. Habitats include meadows, grassland, hedgerows and small woods. The section of the Pinn that runs under the railway is a good wildlife corridor with a wide strip of riparian vegetation."*
Common Plantation and Park Wood HiBII02	SINC Borough Grade II 18.97 ha	Approx. 0.35 km NW Separated from the Site by the A40 road. Woodland stepping stone connection.	*"Two areas of woodland separated by the Western Avenue. Park Wood is believed to be a remnant of ancient woodland. The River Pinn flows through the woodland and is thought to provide a wildlife corridor."*
Ickenham Moat HiL09	SINC Local 0.4 ha	Approx. 0.45 km NE No watercourse connection.	*"An ancient monument consisting of a wooded ditch."*
Uxbridge ponds HiBI06	SINC Borough Grade I 1.18 ha	Approx. 1.80 km W Separated by urbanisation with no direct connectivity for	*"Three ponds that support amphibians, including two which are breeding ponds for great crested newts."*

Site	Designation[1] & area	Proximity (distance/direction) & connectivity to Site	Summary description[2]
		designating features (GCN)	
Hillingdon Court Park HiL04	SINC Local 22.77 ha	Approx. 0.60 km SW Separated from the Site by urbanisation	*"A large park with mature trees and small areas of woodland and wetland. The Site consists mostly of amenity grassland with scattered trees. The park provides access to nature in an area lacking in accessible wildlife sites. The trees in the park range in age, the mature trees in the park provide roosting sites for starlings."*
Ickenham Pond HiBII05	SINC Borough Grade II 0.04 ha	Approx. 1.25 km N No direct connection in relation to designating features (ponds)	*"A pond adjacent to High Road, Ickenham. The pond has reasonable plant diversity."*
Mad Field Covert, Railway Mead and the River Pinn HiBII31	SINC Borough Grade II 12.43 ha	Approx. 1.40 km NW No direct connection of watercourse	*"The Site includes a covert, grassland and the shallow, slow-flowing River Pinn. River Mead is an area of herb-rich grassland bounded by mature hedgerows. Mad Field Covert is a stand of oak and ash woodland. The River Pinn is shallow and slow-flowing. There is also a pond beside the river."*
Home Covert, Lowdham Field and Pole Hill Open Space HiBII52	SINC Borough Grade II 26.4 ha	Approx. 1.50 km SE Separated from the Site by urbanisation	*"Areas of woodland, grassland and other open space. The woodland floor is generally bare due to pedestrian usage. There are areas of rough grassland, ponds, ditches and hedgerows."*
Yeading Brook Meadows M051	SINC Metropolitan 170.08 ha	0.50 km SE Connected by open space. No direct watercourse connection.	*"An extensive area of meadows and pastures, divided by old hedges located on the floodplain of the Yeading Brook, the wetter fields support a range of interesting flora. The Site comprises an extensive mosaic of unimproved meadows and pastures divided by hedgerows."*
Mid Colne Valley M045	SSSI Metropolitan 321.17 ha	1.9 km W Separated by urbanisation with stepping stone connections	*"Includes a diverse range of high-quality habitats. Several waterways include the Fray's River, from which 53 aquatic and wetland plants have been recorded. The unimproved wet pastures of Frays Farm Meadows support very rich flora"*

Notes
1. Definitions of abbreviations provided in the Glossary.
2. As provided by Greenspace Information for Greater London (05.07.2019)

Priority habitats

3.1.6 Priority habitats returned by the desk study are listed in Appendix D. In summary, the following UK Priority Habitats occur (as depicted on *MAGIC*) within 1 km of the Site:

- Deciduous woodland: 56 parcels – The nearest parcel to the Site was located approximately 0.1 km north-west of the Site surrounded by residential properties, road networks and arable land. Other parcels are scattered around the Site in varying directions;

- Wood-pasture and parkland BAP: Two parcels – The nearest parcel to the Site was located approximately 0.6 km north-west of the Site surrounded by deciduous woodland, residential settlements and broadleaved woodland.

3.1.7 One Open Mosaic Habitat (OMH) was identified within 1 km of the Site depicted on Natural England's Draft OMH Inventory Database (downloaded 17/01/2018) with reference: 7961, located approximately 35 m West of the Site. This area is cited to *"probably"* comprise the priority habitat although there is *"some uncertainty of interpretation"*.

Notable habitats

3.1.8 The following non-priority but notable habitats occur within 1 km of the Site:

- Good quality semi-improved woodland: Five parcels – The nearest parcel to the Site was located approximately 0.8 km north-east of the Site surrounded by deciduous woodland, hedgerows and arable land;
- Broadleaved woodland: Eight parcels – The nearest parcel to the Site was located approximately 150 m east of the Site associated with the boundary of a residential development.

3.1.9 A review of the Woodland Trust Ancient Tree Inventory highlighted 16 known ancient, veteran or notable trees within 1 km of the Site. The nearest tree was located approximately 0.4 km South of the Site with reference: 97846

Protected Species

3.1.10 A search on *MAGIC* returned three licence applications for great crested newts within 2 km and five licence applications extending to 5 km from, the Site for bats; these are detailed in Table 3.3.

Table 3.3 Development license applications within 5 km of the Site identified during the data search

Species	Date	Proximity (distance/direction) & connectivity to Site	Licenced activity
Great crested newt	19/09/2014	Approx. 1.3 km SW Separated from the Site by residential properties and large roads including the A437 with no visible water bodies between sites	Damage of a resting place Destruction of a resting place
Great crested newt	23/06/2015	Approx. 1.3 km SW Separated from the Site by residential properties and large roads including the A437 with no visible water bodies between sites	Damage of a resting place
Great crested newt	20/04/2010	Approx. 1.3 km SW	Destruction of a resting place

Species	Date	Proximity (distance/direction) & connectivity to Site	Licenced activity
		Separated from the Site by residential properties by large roads and the A437 with no visible water bodies between sites	
Brown long-eared, Common/ Soprano pipistrelle	11/09/2014	Approx. 4.7 km NE Separated from the Site by the A40 and urbanisation. The railway corridor provides some connectivity. Major roads are considered as a barrier to these species	Damage of a resting place
Common/ Soprano pipistrelle	24/10/2014	Approx. 3.3 km SW Separated from the Site by urbanisation with small woodlands and tree-lines providing some connectivity.	Destruction of a resting place
Brown long-eared, Common/ Soprano pipistrelle	16/06/2016	Approx. 5 km N Separated from the Site by urbanisation and arable land with small woodland parcels and tree-lines providing connectivity.	Destruction of a resting place
Common pipistrelle	28/06/2010	Approx. 2.9 km NE Separated from the Site by urbanisation with tree-lines providing connectivity.	Destruction of a resting place
Common/ Soprano pipistrelle	08/10/2012	Approx. 2.7 km NE Separated from the Site by urbanisation and arable land with tree-lines and small woodlands providing connectivity.	Destruction of a resting place

3.1.11 Table 3.4 summarises the protected species records, provided by GiGL (returned 05/07/2019) that occur within 2 km of the Site. As a result of the format of the data received it includes records over 10 years old for some species. Where all records for a given species are over 10 years old they have not been included in this Table.

Table 3.4 Protected species recorded within 2 km of the Site (as provided by GiGL; 05/07/2019)

Species	Level of protection[1]	Summary of records		
		N-º of occurrences	Distance, direction & date	
			Nearest	Most recent
Amphibians & Reptiles				
Grass snake	UK (En.)	3	0.9 km SE (1999)	1.7 km SE (11/04/2012)
Great crested newt	UK, EU	8	1.3 km NE (03/05/2006)	1.8 km W (12/05/2010)
Slow worm	UK	66	0.7 km NE (08/2011)	1 km SE (03/05/2012)
Common Lizard	UK	2	1.4 km N (22/06/2006)	1.6 km N (12/09/2006)
Birds				
Brambling	UK	6	0.7 km N (20/03/1999)	1.8 km N (09/11/2012)
Fieldfare	UK	3	0.7 km NE (11/01/2014)	0.7 km NE (11/01/2014)
Hobby	UK	16	Confidential records	
Kingfisher	UK	20	0.5 km SE (06/10/2004)	0.9 km N (08/02/2017)
Merlin	UK	1	1.2 km SW	
Red kite	UK	8	Confidential records	
Redwing	UK	13	0.7 km NW (09/10/2004)	0.9 km SE (22/11/2019)
Bats				
Serotine	UK, EU	1	1 km NW (23/05/2017)	1 km NW (23/05/2017)
Brown long-eared	UK, EU	3	1.5 km SW (24/03/2008)	1.9 km SW (13/08/2010)
Common pipistrelle	UK, EU	11	0.1 km N (05/01/2005)	0.2 km W (12/10/2011)
Daubenton's	UK, EU	1	1.9 km SW (18/09/2009)	1.9 km SW (18/09/2009)
Noctule	UK, EU	8	0.3 km W (12/10/2011)	1 km NW (06/06/2017)
Pipistrelle sp.	UK, EU	5	0.6 km SW (2010)	1.1 km S (31/08/2014)
Soprano pipistrelle	UK, EU	13	1 km NW (23/05/2017)	1 km NW (06/06/2017)
Vesper sp.	UK, EU	9	0.6 km SW (2004)	0.6 km SW (2008)
Mammals (Excl. Bats)				
Eurasian badger	UK	1	Confidential records	
European water vole	UK (En.)	3	0.6 km E (06/08/2002)	0.6 km E (06/08/2002)

Notes
1. EU – European; UK – UK; (En) – also a notable species in England, e.g. UK Priority/S41 species.
Refer to Glossary for details and definitions.

Notable species

3.1.12 No farmland bird assemblages were identified to be residing on the Site as depicted by *MAGIC.* Within 1 km of the Site, Snipe has been confirmed. Therefore, there is potential for Snipe to occur on or use the Site if suitable habitat is present.

3.1.13 Table 3.5 summarises the notable species records, provided by GiGL (received 05/07/2019) that occur within 2 km of the Site. This Table excludes any species that are specifically protected (see Table 3.4). As a result of the format of the data received it includes records over 10 years old for some species. Where all records for a given species are over 10 years old they have not been included in this Table.

Table 3.5 Notable species recorded within 2 km of the Site (as provided by GiGL; 05/07/2019)

Species	Status				Summary of records		
					Nº of occurrences	Distance, direction & date	
	BAP	S41	BoCC[1]	Other[2]		Nearest	Most recent
Amphibians & Reptiles							
Common frog				✓	32	0.4 km W (2000)	2 km S (06/2007)
Common toad	✓	✓		✓	5	0.8 km N (08/2011)	0.8 km N (08/2011)
Birds							
Bullfinch				✓	8	0.8 km NE (24/11/2013)	0.9 km SE (22/11/2017)
Cuckoo	✓	✓	R	✓	3	0.8 km NW (01/06/2013)	1.4 km E (11/05/2013)
Dunnock	✓			✓	5	0.4 km S (2005)	1.6 km E (05/12/2016)
Goldcrest				✓	4	0.4 km S (2005)	1.4 km SE(10/03/2016)
Grasshopper warbler	✓	✓	R	✓	6	0.7 km N (22/04/2007)	0.7 km N (22/04/2007)
Grey heron				✓	11	0.8 km NE (11/01/2014)	0.9 km NE (09/03/2017)
Grey wagtail			R	✓	9	0.8 km NE (23/12/2014)	1.7 km NE (05/12/2019)
House martin				✓	1	2 km SE (28/09/2012)	2 km (SE) (28/09/2012)
House sparrow	✓	✓	R	✓	94	0.2 km S (2002)	2 km S (12/06/2017)
Kestrel				✓	8	0.7 km N (16/07/1997)	1.8 km N (09/11/2012)
Lapwing	✓	✓	R	✓	4	0.8 km NW (27/03/2019)	0.8 km NE (29/09/2014)
Lesser spotted woodpecker	✓		R	✓	7	0.7 km N (28/02/1995)	1.1 km SW (30/12/2011)
Linnet	✓		R	✓	2	0.7 km NE (29/09/2014)	0.7 km NE (29/09/2014)
Meadow pipit				✓	1	1.8 km N (09/11/2012)	1.8 km N (09/11/2012)
Mistle thrush			R	✓	3	0.8 km NW (01/05/2001)	1 km NE (17/11/2017)
Reed bunting	✓	✓		✓	2	0.8 km NE (23/12/2014)	0.8 km NE (23/12/2014)

Species	Status				Summary of records		
					Nº of occurrences	Distance, direction & date	
	BAP	S41	BoCC[1]	Other[2]		Nearest	Most recent
Rook				✓	5	0.8 km NE (27/12/2014)	0.8 km NE (27/12/2014)
Ring ouzel	✓	✓	R		1	0.6 km N (29/04/2007)	0.6 km N (29/04/2007)
Skylark	✓	✓	R	✓	2	0.7 km NE(29/09/2019)	1.9 km SE (21/02/2017)
Song thrush	✓		R	✓	2	1.9 km SE (01/01/2017)	1.9 km SE (01/01/2017)
Spotted flycatcher	✓	✓	R	✓	7	0.8 km NE (31/08/2014)	0.8 km NE (31/08/2014)
Stock dove				✓	1	1.6 km N (08/04/2007)	1.6 km N (08/04/2007)
Stonechat				✓	1	1.9 km SE (21/02/2017)	1.9 km SE (21/02/2017)
Swallow					4	0.8 km NE (31/08/2014)	0.8 km NE (31/08/2014)
Swift				✓	19	0.4 km N (28/07/2012)	2 km N (12/07/2014)
Tawny owl				✓	6	1.2 km SW (1982)	1.4km E (15/03/2014)
Teal				✓	3	0.8 km NE (23/12/2014)	0.8 km NE (27/12/2014)
Woodcock			R	✓	6	0.8 km NW (23/01/1985)	1 km SE (05/01/2017)
Invertebrates							
Brown argus				✓	6	1.3 km SE (02/08/2015)	1.3 km SE (02/08/2015)
Emerald damselfly				✓	3	1.1 km N (2002)	1.8 km N (17/07/2016)
Marbled white				✓	11	1.1 km N (30/07/2011)	1.9 km N (12/07/2014)
Marbled white subsp.				✓	22	1 km S(30/07/2011)	1.6 km N (01/07/2008)
Silver-washed fritillary				✓	1	1.8 km N (28/07/2013)	1.8 km N (28/07/2013)
Small heath	✓	✓		✓	5	1.6 km NE (08/09/2016)	1.6 km NE (08/09/2016)
Stag beetle	✓	✓		✓	154	0.2 km W (13/06/2015)	1.8 km SW (25/06/2018)
Wasp spider				✓	2	0.9 km SE (17/08/2017)	0.9 km SE (17/08/2017)
White-letter hairstreak	✓	✓		✓	7	1.2 km W (27/07/2014)	1.4 km W (31/07/2016)
Mammals (Excl. Bats)							
West European hedgehog	✓	✓		✓	22	0.4 km SW (2001-2002)	1.8 km N (12/07/2017)
Plants							
Bladderwort				✓	4	1.6 km W (1999)	1.6 km W (2008)
Bluebell				✓	13	1.2 km NW (21/06/2004)	1.4 km NW (03/05/2010)
Grape hyacinth	✓	✓		✓	1	1.8 km N (01/03/2009)	1.8 km N (01/03/2009)

Species	Status				Summary of records		
					Nº of occurrences	Distance, direction & date	
	BAP	S41	BoCC[1]	Other[2]		Nearest	Most recent
Large leaved lime				✓	1	2 km N (24/10/2009)	2 km N (24/10/2009)
Mistletoe	✓			✓	2	1.8 km W (1999)	1.9 km NW (12/12/2009)
Pale toadflax				✓	9	1.7 km NE (21/06/2004)	2 km N(04/08/2010)
Stinking hellebore				✓	3	2 km N (02/01/2011)	2 km N (02/01/2011)

Notes
1. Birds of Conservation Concern: R - Red listed; A – Amber listed
2. Local species of conservation concern

3.1.14 A notable species (Section 41), alder flea weevil, with 10 km^2 accuracy was returned by the desk study from GiGL (received 05/07/2019). A single record was noted on 05/07/2013.

Non-native invasive species

3.1.15 Table 3.6 summarises non-native invasive species provided by GiGL (received 05/07/2019) that occur within 2 km of the Site. As a result of the format of the data received it includes records over 10 years old for some species. Where all records for a given species are over 10 years old they have not been included in this Table. Qualifying species are those included on the London Invasive Species Initiative (LISI; hereafter referred to as LISI species) or with legislative classification, listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)

Table 3.6 Non-native invasive species recorded within 2 km of the Site (as provided by GiGL; 05/07/2019)

Species	LISI Category[2]	Summary of records		
		N-º of occurrences	Distance, direction & date	
			Nearest	Most recent
Plants				
Bluebell hybrid	LISI Category 4	5	0.9 km N (12/04/2011)	0.9 km N (12/04/2011)
Butterfly bush	LISI Category 3	27	1 km N (14/01/2010)	On site SE (15/08/2011)
Cherry laurel	LISI Category 3	17	0.9 km NW (28/09/2004)	1.6 km NE (07/04/2010)
Evergreen oak	LISI Category 5	4	1 km N (12/04/2011)	1 km N (12/04/2011
False acacia	LISI Category 4	8	0.9 km NE (08/06/2010)	1 km NE (01/08/2010)
Giant hogweed[1]	LISI Category 3	15	1.2 km SE (25/10/2011)	1.2 km SE (25/10/2011
Goat rue	LISI Category 4	3	1 km N (12/08/2010)	Onsite 19/08/2010
Green alkanet	LISI Category 6	9	1 km W (21/06/2004)	1.4 km N (03/02/2011)
Highclere holly	LISI Category 5	2	0.6 km NW (18/04/2010)	0.6 km NW (18/04/2010)
Indian balsam[1]	LISI Category 3	67	0.9 km SE (15/08/2011)	1.3 km SE (25/10/2011)
Japanese knotweed[1]	LISI Category 3	10	1 km NE (21/04/2010)	1 km NE (21/04/2010
Least duckweed	LISI Category 4	1	1.6 km SE (03/03/2011)	1.6 km SE (03/03/2011)
New Zealand pygmyweed[1]	LISI Category 3	3	1.2 km N (30/01/2004)	1.8 km W (19/08/2012)
Rhododendron[1]	LISI Category 2	2	1 km S (22/09/2004)	1.1 km S (18/01/2009)
Shaggy soldier	LISI Category 3	3	50 m SE (28/08/2010)	1.1 km N (16/11/2010)
Snowberry	LISI Category 2	10	1 km N (01/08/2010)	0.3 km SE (19/08/2010)
Turkey oak	LISI Category 5	15	0.9 km NW (30/10/2009)	1.5 km W (13/03/2010)
Yellow archangel	LISI Category 3	2	1.8 km N (19/09/2009)	1.8km N (12/01/2010)

Notes
1. Species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) – invasive species
2. LISI Categories:
    1. Species not currently present in London, but present nearby or of concern because of the high risk of negative impacts should they arrive.
    2. Species of high impact or concern at present specific sites that require attention (control, management, eradication etc).
    3. Species of high impact or concern which are widespread in London and require concerted, coordinated and extensive action to control/ eradicate.
    4. Species which are widespread for which eradication is not feasible, but where avoiding spread to other sites may be required. Appropriate biosecurity for Site will be required.
    5. Species for which insufficient data or evidence was available from those present to be able to prioritise.
    6. Species that were not currently considered to pose a threat or have the potential to cause problems in London.

3.2 Extended Phase 1 Habitat Survey: Habitats

Local context

3.2.1 The following habitats were recorded immediately adjacent to the site:

- North: dual carriageway (A40), beyond which lies agricultural land and residential development;
- East: An internal boundary feature comprising a post and rail fence encircled the eastern parcel separating it from the larger mosaic of horse-grazed grasslands, scrub, woodland and hedgerows;
- South: minor road (Freezeland Way) beyond which lies mixed residential and commercial development; and
- West: Long Lane with mixed residential and commercial development beyond.

Site

3.2.2 A map depicting the distribution of the habitats, photographs and species recorded are provided in the Appendix.

3.2.3 A description of habitats within the Site is presented below, all descriptions are provided as at time of survey. Habitats are described in detail below; a plan depicting the locations of these habitat types and features (Drawing BMD.19.020.DRE.901) and representative photographs are provided in the Appendix.

Site

3.2.4 The Site was separated into two discreet sections, the former Master Brewer Site which covered approximately 2.9 ha, was largely flat, encircled by a fence and constituted the western section. This section contained additional land to south as a result of the boundary realignment covering approximately 0.5 ha. The new area to the east comprised a flat, rectangular, poor semi- improved grassland field parcel which formed part of the larger Ickenham Marsh, Austin's Lane Pastures and Freezeland Covert SINC.

Boundaries

3.2.5 The majority of the Site was bounded by metal palisade fencing and concrete post and chain-link fencing:

- North: concrete post and chain-link fence.
- East: post and rail fence delineates the Site from the broader grazing parcel associated with the SINC.
- South: a mixture of palisade and post and rail fencing.
- West: Fence line.

Hardstanding

3.2.6 The Site was dominated by hardstanding comprising the foundations of former buildings, roads/car parks and gravel and brick-paved hard landscaping (see Photograph 1). Ruderal vegetation was beginning to establish within the hardstanding, species present included plantains, thistles, bramble and common nettle.

3.2.7 Since the previous study (November 2018) the central section of the Site had been subject to clearance works exposing bare concrete and tarmac. This area was previously poor semi-improved grassland, spoil piles, scattered scrub, scattered broadleaved trees and shrubs.

Broadleaved Plantation Woodland

3.2.8 Two parcels of broadleaved plantation woodland were present within the Site. One stretched along a portion of the northern boundary (see Photograph 2) and another along the majority of the western boundary (see Photograph 3). These remains unchanged from the previous survey.

3.2.9 The northern block appeared to have developed from former planted trees over grassland. The trees were relatively widely and unevenly spaced, of uniform height and drawn in nature; albeit occasional trees were present with wide-spreading canopies. The canopy was dominated by a mixture of native and non-native species, including poplar, pedunculate oak and field maple with a very sparse developing shrub layer of immature elder. The northern portion contained a former side-managed hawthorn and field maple hedgerow growing against a boundary fence that now formed part of the plantation. Ground-flora comprised adjacent/remnant grassland species such as fescue and yarrow towards the edges but was otherwise bare, with occasional fallen deadwood.

3.2.10 The western woodland extended slightly into the Site and lay on a steep slope fenced-off from the adjacent public footpath. The canopy was dominated by drawn, closely spread and uniformly tall trees; mostly semi-mature with the exception of a remnant line of ash and field maple along the eastern boundary that appears to be slightly more mature. Generally, the canopy comprised an even mixture of ash, birch and field maple. There was limited/no understorey and ground-flora.

Species-poor semi-improved grassland

3.2.11 The main areas of poor semi-improved grassland were located within new areas incorporated into the Site as a result of the Site boundary realignment: the eastern field parcel, within the adjacent SINC and the southern part of the Site. Both areas were rank and unmanaged with a tall sward dominated by common widespread grass species. Species present included Yorkshire fog, perennial rye, common couch and meadow foxtail alongside birds-foot trefoil, plantains, black medick, yarrow and selfheal (Photograph 4). Patches of tall ruderal were beginning to encroach within these areas in close association with scrub and boundary features. The invasive plants species, goat rue (Target note 1, Photograph 19) was present throughout the species poor semi-improved grassland.

3.2.12 Further small patches of poor semi-improved grassland were scattered around the Site.

3.2.13 Semi-improved grassland which had developed on hardstanding in the centre of the Site and detailed in the previous study was no longer present as a result of the clearance works.

Broadleaved Treeline

3.2.14 A series of broadleaved tree lines were present across the Site delineating internal and external boundaries.

3.2.15 A broadleaved treeline followed the eastern boundary of the former Site separating the eastern extension within the SINC (Photograph 5). This tree line was formerly a hedgerow, historically side-managed, that has remained unmanaged for some time and matured into a single line of trees dominated by field maple alongside occasional ash and hawthorn with no discernible understorey or ground-flora.

3.2.16 A series of treelines bound a rectangular patch of poor semi-improved grassland in the southern section of the Site. This area comprised part of the additional land incorporated into the Site as a result of the boundary re-alignment.

3.2.17 A treeline along the northern boundary (Photograph 6) of the grassland comprised densely planted predominantly semi-mature trees interspersed with mature shrubs. Species present included pedunculated oak, goat willow, cherry and ash.

3.2.18 A treeline along the western boundary comprised exclusively of semi mature hornbeam (Photograph 7).

3.2.19 A treeline along the southern Site boundary supported taller mature specimens dominated by field maple with frequent patches of blackthorn and bramble scrub in the understorey (Photograph 8).

3.2.20 A further tree line dominated by semi-mature elm stretched into the eastern field parcel from the broader site to the east. Densely planted and linear in nature, this treeline was considered to be a former boundary hedge which has fallen out of management.

Dense and Scattered Scrub

3.2.21 Scattered scrub dominated by bramble, dog rose and blackthorn was present in the south and east of the Site, developing on areas of poor semi-improved grassland.

3.2.22 A linear stretch of scattered scrub dominated by bramble was located adjacent to the treeline delineating the main Site from the eastern field parcel (Photograph 9).

3.2.23 Dense scrub was present within the eastern field parcel in close association with tall ruderals (Photograph 10). This was blackthorn dominated with regular patches of bramble and occasional dog rose.

3.2.24 Scattered scrub comprising bramble and dog rose was interspersed throughout the poor semi-improved grassland in the southern portion of the site (Photograph 11).

3.2.25 Scrub previously identified in the central section of the Site was no longer present as a result of site clearance works.

Bare Ground

3.2.26 Several patches and linear stretches of bare ground were now present as a result of site clearance works.

3.2.27 A narrow linear area stretched adjacent to the northern block of broadleaved plantation along the northern boundary (Photograph 12). A further area stretched north south adjacent to the scrub and treeline delineating the eastern and western sections of the Site (Photograph 13). Invasive goat rue

(Target note 1) was beginning to establish on the central patch of bare ground alongside thistles and other pioneer species.

3.2.28 Cover of bare ground had increased since the last study a result of site clearance work.

Introduced Shrub

3.2.29 A dense patch of butterfly bush (Target note 2) had colonised a raised bank comprising rubble and hardstanding from previous site clearance works in the south east corner of the site (photograph 14).

Tall Ruderal

3.2.30 Several patches of tall ruderal vegetation, dominated by common nettle, docks, thistles, greater willowherb and hogweed were present on poor semi-improved grassland across the Site.

3.2.31 Tall ruderal vegetation was present within grassland in the eastern field parcel in close association with scrub (Photograph 15). Cover was concentrated in the south west corner of the field parcel with further smaller scattered patches throughout the grassland.

3.2.32 A further area of tall ruderal was located within poor semi-improved grassland along the southern Site boundary, again in close association with scrub and with similar composition to the other area on site.

Scattered Trees

3.2.33 A number of scattered trees were present throughout the Site ranging from self-seeding colonising species, such as birch, to mature standard trees such as weeping willow (Photograph 16). The Site supports a number of both native and non-native species, including pedunculate oak and Norway maple. The majority of trees within the Site were broadleaved with a small number of coniferous species such as Lawson cypress.

3.2.34 All the scattered trees in the central section of the Site detailed in the previous study have been lost to site clearance works.

Dry Ditch

3.2.35 A shallow dry ditch approximately 1.5 m wide stretched the length of the western boundary of the eastern field parcel (see Photograph 17). The ditch had shallow banks, no vegetation within or on banks and likely contains water at some point during the year.

Spoil Pile

3.2.36 A steep L-shaped spoil pile approximately 2.5 m high and 60 m long (Target note 3, photograph 18) was located in the south west corner of the Site. Butterfly bush had colonised a large portion of the feature (Target note 2, photograph 20).

3.3 Extended Phase 1 Habitat Survey: Protected and Notable Species

3.3.1 With the exception of common species of nesting birds, no direct evidence of protected or notable species was recorded within the Site. A bird's nest was recorded within a treeline in the southern section of the Site towards the western end of the treeline.

3.3.2 Other species recorded during the survey are listed in Appendix D. The potential for the habitats on Site to support other protected and notable species is discussed in Section 4: Evaluation.

4. EVALUATION

4.1 Introduction

4.1.1 This Section reviews the results of the desk study and field surveys in relation to the proposed development proposals; it:

- Determines the ecological importance of habitats at an appropriate geographic level
- Determines the likelihood of protected and notable species occurring on Site
- Identifies any legal and policy implications for developing the Site in relation to nature conservation sites, habitats and species potentially associated with the Site
- Identifies high-level biodiversity gain opportunities.

4.2 Habitats

4.2.1 Although largely comprising deciduous trees, the woodlands on Site are not considered to meet the description of UK Priority Habitat: Lowland Mixed Deciduous Woodland on account of their plantation nature and lack of semi-natural three-dimensional structure and woodland ground flora. The northern woodland also includes a high proportion of non-native species.

4.2.2 None of the other habitats on Site meet the appropriate criteria to be considered as UK Priority Habitats or Local BAP Habitats. The Site as a whole is not considered to qualify as the UK Priority Habitat: Open Mosaic Habitats (OMH) as it lacks early successional vegetation communities (or mosaics thereof) and loose bare substrate, instead comprising largely cleared ground, a mixture of well-demarcated and continuous habitat blocks such as grassland, woodland and scrub interspersed with largely continuous hardstanding in a reasonable state of repair. Where present, substrate is either already colonised by established vegetation, or compacted. Although comprising a number of colonising species, the habitats within the Site are generally well-established and do not comprise significant or extensive coverage of any of the following (paraphrased from the Priority Habitat Description for OMH):

- Annual communities such as stress-tolerant ruderals;
- Moss/liverwort communities;
- Lichen communities;
- Inundation communities;
- Open grassland;
- Flower-rich grassland comprising a mature community of robust forbs (see Section 4.2.3); or
- Heathland.

4.2.3 The poor semi-improved grassland is not considered to qualify as flower-rich grassland due to the relatively low species diversity and encroachment of scrub and tall ruderals. It did not comprise a high proportion of robust mesotrophic species, with the grassland still predominantly comprising common grass species with encroaching ruderals.

4.2.4 As individual habitats, none of the habitats on Site are considered to be of nature conservation value based on the evaluation approach used in this assessment.

4.2.5 The Site itself as a whole was considered to generally conform to the Local BAP habitat description: Wasteland. However, and as mentioned within the Brownfield Habitat Action Plan (HAP), it is of limited value and at further risk of natural habitat succession, largely comprising dense scrub/introduced shrub and closed tree/scrub habitats.

4.2.6 Table 4.1 provides a summary of the nature conservation importance of habitats within Site.

Table 4.1 Ecological importance of habitats occurring within the Site and geographical context

Habitat	Meets UK Priority/Local BAP habitat criteria	Condition[1]	Geographical context[2]
Treeline	No	Poor	Site
Hardstanding	No	Poor	Site
Broadleaved plantation woodland	No	Poor	Local
Species-poor semi-improved grassland	No	Poor	Site
Introduced Shrub	No	Poor	Local
Scrub	No	Poor	Site
Bare Ground	No	Poor	Site
Tall Ruderal	No	Poor	Site
Scattered Trees	No	Poor	Local

Notes
1. As determined using FEPs guidance. Where it is considered that the FEP condition outcome is inappropriate justification is given in the text
3. Geographic level at which the habitat is considered important

4.3 Species

4.3.1 This section considers the actual or potential occurrence of protected and notable species (including non-native invasive species and species protected by specific legislation with no intrinsic conservation value) on Site. It takes account of known data records, habitats on Site and connectivity, appropriate to given species, across the landscape. Species not specifically listed in this section are either:

- unlikely to occur on Site on account of at least one of the following factors:
  - no habitat on Site to support the species (e.g. aquatic species such as water vole, otter and white-clawed crayfish);
  - no connectivity to suitable habitat beyond the Site boundary; and/or
  - Site is outside of the species typical geographic range.
- Of negligible ecological consequence on Site and therefore considered no further, e.g. well-established and/or naturalised/highly mobile invasive species such as grey squirrel and ring-necked parakeet.

4.3.2 Based on the results of the desk study, habitats recorded on Site and/or direct evidence, the following protected and notable (including non-native invasive species) species occur, or have potential to occur, within the Site:

- Amphibians and reptiles – a reptile survey is currently under way with slow worm confirmed as present onsite, this species is considered further below.
- Badgers – no evidence within the Site although suitable habitats for foraging and commuting are present throughout and nearby.
- Bats - two onsite trees (Target Note 4 & 5) had features with suitability for roosting bats and it is considered bats in the area may utilise the Site for commuting and foraging. This species group is considered further below.
- Hedgehogs – plantation, scrub and grasslands may be used by foraging and commuting hedgehogs.
- Nesting birds – evidence of bird nesting on Site was observed within woodlands, trees and scrub.
- Stag beetle – occasional standing and fallen deadwood within the northern plantation woodland could be utilised by stag beetle.
- Invasive plant species - butterfly-bush and goat rue (LISI species) were confirmed as present on Site (Target note 1 and 2) alongside a small stand of Japanese knotweed (Target note 6, Photograph 25) (LISI species & Schedule 9) located offsite within the eastern rough grassland field, adjacent to the Site.

Amphibians

4.3.3 It is acknowledged that the Site offers some terrestrial habitat (rough grass & scrub) that may be used during newt terrestrial phase; however, there are limited opportunities in the area to support the species' aquatic phase. The nearest great crested newt records were 1.4 km north and 1.3 km south-west. Both were separated from the Site by major roads and as such are not considered connected to the Site. There are only two known ponds within 500 m of the Site: one to the north separated by the A40 and a second approximately 250 m east. The latter was on the edge of a woodland block within the adjacent rough grassland field parcel. If this pond supported GCN it is considered a low probability that GCN would utilise the terrestrial habitats on Site on account of:

- The Site being on the outer extremities of the core zone (250 m) from a pond; and
- Higher quality habitat in closer proximity to the pond.

4.3.4 Therefore, it is considered unlikely that great crested newt occur on Site.

Reptiles

4.3.5 There are a number of reptile records (grass snake and slow-worm) within the local area and an ongoing reptile survey recommended in the previous study has confirmed the presence of slow worm onsite.

Bats

4.3.6 Based on the habitats present, the Site itself is considered to be of low importance for foraging bats within the local context.

4.3.7 Within a wider context, the Site lies within a narrow strip of open greenspace providing east-west connectivity between potentially valuable resources for bats to the east and west that would otherwise be isolated from each other by the closing urban expanses of Ickenham to the north and Hillingdon to the south. This includes linkages between potentially important bat resources such as woodland LNRs in the east and SSSIs and significant riparian commuting corridors in the west.

4.3.8 Two trees were identified with bat roosting potential as described below.

4.3.9 A mature pedunculated oak (T1, Target Note 4) in the eastern field parcel was assessed as having 'low' suitability to support roosting bats (Photographs 21 and 22). The tree had a large broken limb which had created a significant central cavity with potential to support small numbers of bats. However, given the exposed nature of the cavity it is not considered to provide roosting potential for bats year-round.

4.3.10 Another tree (T2, Target Note 5) was identified with 'moderate' suitability to support roosting bats (Photographs 23 and 24). The tree was a mature weeping willow with a north-facing woodpecker hole within the main stem that appeared to lead to a cavity. Other features included a number of knot holes and branch occlusions which had limited potential to lead to internal cavities. Internal cavities formed by these features (if present) would potentially be suitable for supporting multiple bats within a constant internal environment and therefore may provide suitable roosting features year-round.

Summary

4.3.11 Based on the habitats recorded on Site, the Site is considered unlikely to support significant populations of other protected or notable species. The habitats are low in species diversity and are generally common and widespread within the immediate local and national contexts.

4.3.12 Table 4.2 provides a summary of protected and notable species (including non-native invasive species) that have potential to occur on Site and associated habitats/location on Site.

Table 4.2 Protected and notable species (including non-native invasive species) that have potential to occur on Site

Species	Status[1]	Confirmed on Site[2]	Potential to occur	Associated habitats/location on Site
Bats (roosting)	EU, UK, N	No	Yes	Tree T1 & T2
Bats (foraging/commuting)	EU[3], N	No	Yes	Woodlands, trees and scrub
Badger (foraging/commuting)	UK	No	Yes	Site-wide
Hedgehog	UK, N	No	Yes	Site-wide
Birds (common nesting species)	UK, N[5]	Field	Yes	Woodlands, scrub, introduced shrub and trees
Reptiles (common species)	UK, N	Field[6]	NA	Woodlands, scrub, introduced shrub, and grasslands

Species	Status[1]	Confirmed on Site[2]	Potential to occur	Associated habitats/location on Site
Stag beetle	N	No	Yes	Standing/fallen deadwood within northern plantation
Japanese knotweed	UK	Field	Yes (if off Site plants spread)	Offsite within eastern horse grazed field parcel, adjacent to the Site
Goat rue	N[7]	Field	NA	Site-wide
Butterfly-bush	N[7]	Field	NA	Site-wide

Notes
1. EU – European protected. UK – UK protected (not including species protected against sale-related activities only). N – Notable species. Inv. – invasive or potentially invasive species listed in Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).
2. Field – field evidence; desk – desk study evidence.
3. UK Protection does not extend to protection against disturbance while foraging/commuting beyond direct harm to individual bats.
4. Wild Mammals Protection Act (1996), protected in terms of animal welfare and cruelty prevention only; as a result of no and with no incurred or implied elevated conservation status or importance.
5. Species-dependent.
6. Slow worm confirmed during on-going reptile surveys
7. Non-native species included within the London Invasive Species Initiative (LISI).

4.4 Legal and Policy Implications

Nature conservation sites (Statutory Sites)

4.4.1 The Site falls within the 2,000 – 3,000 m Impact Risk Zone (IRZ) for Fray's Farm Meadows SSSI and Denham Lock Wood SSSI. However, the proposed development is not included on the list of developments that are considered likely to cause a risk to the corresponding SSSI. The Site does not provide potential sinks or sources for designated features of the SSSIs. Given these considerations, the distance from the SSSIs and scale of the development, no direct or indirect impacts are anticipated. Therefore, no legal or policy implications are anticipated.

Nature conservation sites (Non-statutory Sites)

4.4.2 Ickenham Marsh, Austin's Lane Pastures and Freezeland Covert (SINC) is situated immediately to the east of the current Application Site. The SINC comprises 121 ha of hedges, woodlands and wetlands. The majority of the site lies north of the A40 and is therefore separated from the Site and unlikely to be directly impacted by the proposed development. The Freezeland Covert section of this designation is landlocked by roads and contains the eastern rough grassland parcel which forms part of the site. Safeguarding measures in respect of pollution prevention, ecologically-sensitive lighting schemes and suitable working methods in relation to potential protected species present will be required to safeguard this designation from direct impacts as a result of the development. These are outlined in Section 5.

4.4.3 Habitat management and enhancement measures within the adjacent SINC may be required to mitigate the loss of habitats to development as outlined in Section 5.

4.4.4 Indirect impacts may arise from increased public use. However, current access is restricted to public rights of way and permissive paths, the nearest of which is approximately 0.5 km east of the Site.

Therefore, impacts will be spatially restricted to an area already experiencing public use. As such, negative implications to the site's conservation value are considered to be minimal.

4.4.5 A number of non-statutory sites in the area have public access and therefore may experience increased use from residents of the proposed development. However, given the scale of the development in relation to the current residential baseline and amount of available open green space, such increases are not considered to be significant.

4.4.6 All other nature conservation sites identified during the desk study are considered sufficiently separated and/or removed from the Site to not be affected by development of the Site. Therefore, no legal or policy implications are anticipated.

Habitats

4.4.7 The presence of the following habitats on Site means that they are a material consideration in the planning system through the NPPF and Local Planning Policy (Hillingdon Local Plan: Objective S08; The London Plan: Policy 7.21):

- Broadleaved plantation woodland;
- Scattered Trees (broadleaved, native); and
- Treeline.

4.4.8 In their current state, the proposals are likely to result in a net loss of biodiversity at the Site. As such, national and local policy implications in respect of net biodiversity loss/gain are likely. Consequently, it is considered that off-Site compensation will be necessary to ensure no net loss of biodiversity and maintain compliance with the requirements of the NPPF and Local Planning Policy (Hillingdon Local Plan: Objective S08 & Policy EM7; The London Plan: Policy 7.19). It is considered that precise implementation and extent of off-Site compensation measures can be secured through suitably worded Section 106 agreements or planning conditions.

Species

4.4.9 The potential presence of protected and notable species on Site means that they are a material consideration in the planning system through the NPPF and the Local Planning Policy (Hillingdon Local Plan: Objective S08 & Policy EM7; The London Plan: Policy 7.19). The relevant protected and notable species are:

- Nesting birds (confirmed);
- Bats: roosting, foraging and commuting (potential)
- Badger (potential; albeit low);
- Reptiles (slow worm confirmed);
- Stag beetle (potential; albeit low);
- Goat rue (confirmed);
- Japanese knotweed (confirmed adjacent); and

- Butterfly-bush (confirmed).

4.4.10 In the absence of mitigation, development of the Site could have impacts with respect to any of the listed species above. Species-specific mitigation avoidance/mitigation/compensation measures will be necessary to prevent such impacts (see Section 5).

Summary

4.4.11 Based on the current known ecological baseline of the Site, Table 4.3 summarises the legal and policy implications in relation to wildlife for developing the Site. No legal or policy implications are associated with fences, walls, hardstanding or bare ground.

Table 4.3 Ecological legal and policy implications of the proposed development

Habitat	Features of importance associated with the habitat	Legal implications	Policy implication
Broadleaved Treeline	Intrinsic habitat value	-	Loss of this habitat could limit the resources available to the associated species and have a negative impact on biodiversity; development proposals should avoid significant net loss of biodiversity: - NPPF: biodiversity loss/gain - Local policy[3] - Draft New London Plan (2017) Policy G7 relates to trees and woodland
	Provides nesting opportunities for birds	Birds, their eggs and active nests are protected under UK legislation	
	Bats (foraging/commuting)	Significant disturbance of bats outside of a roost (such as when foraging or commuting) or fragmentation of an important commuting route could constitute an offence under EU legislation	
Broadleaved Plantation Woodland	Intrinsic habitat value	-	Loss of this habitat could limit the resources available to the associated species and have a negative impact on biodiversity; development proposals should avoid significant net loss of biodiversity: - NPPF: biodiversity loss/gain - Local policy[3]
	Provides nesting opportunities for birds	Birds, their eggs and active nests are protected under UK legislation	
	Bats (foraging/commuting)	Significant disturbance of bats outside of a roost (such as when foraging or commuting) or fragmentation of an important commuting route could constitute an offence under EU legislation	
	Hedgehog (provides foraging/commuting opportunities)	Steps must be taken to prevent harm during proposed develop to avoid breaching legislation	

Habitat	Features of importance associated with the habitat	Legal implications	Policy implication
	Provides suitable resting and foraging places for reptiles[1]	Protected from harm under UK legislation	Loss of this habitat could limit the resources available to the associated species and have a negative impact on biodiversity; development proposals should avoid significant net loss of biodiversity: - NPPF: biodiversity loss/gain - Local policy[3]
	Butterfly-bush (Target note 2)	-	Complete eradication from Site would contribute towards national and local policy regarding net gains in biodiversity. Cause of spread as a result of development proposals would have the opposite impact
Species-poor Semi-improved Grassland	Provides suitable resting and foraging places for reptiles[1]	Protected from harm under UK legislation	Loss of this habitat could limit the resources available to the associated species and have a negative impact on biodiversity; development proposals should avoid significant net loss of biodiversity: - NPPF: biodiversity loss/gain - Local policy[3]
	Intrinsic habitat value	-	
	Hedgehog (provides foraging/commuting opportunities)	Protected from harm under UK legislation	
Introduced Shrub	Detrimental intrinsic habitat value	-	Complete eradication from Site would contribute towards national and local policy regarding net gains in biodiversity. Cause of spread as a result of development proposals would have the opposite impact
	Invasive species (Target Note 1)	Spread of this species as a result of development actions would constitute an offence	
	Provides nesting opportunities for birds	Birds, their eggs and active nests are protected under UK legislation	Loss of this habitat could limit the resources available to the associated species

Habitat	Features of importance associated with the habitat	Legal implications	Policy implication
	Bats (foraging)	Significant disturbance of bats outside of a roost (such as when foraging or commuting) or fragmentation of an important commuting route could constitute an offence under EU legislation	and have a negative impact on biodiversity; development proposals should avoid significant net loss of biodiversity: - NPPF: biodiversity loss/gain - Local policy[3]
	Hedgehog (provides potential resting places and foraging/commuting opportunities)	Protected from harm under UK legislation	
	Provides suitable resting and foraging places for reptiles[1]	Protected from harm under UK legislation	
	Butterfly-bush (Target Note 2)	-	Complete eradication from Site would contribute towards national and local policy regarding net gains in biodiversity. Cause of spread as a result of development proposals would have the opposite impact
Scrub	Bats (foraging)	Significant disturbance of bats outside of a roost (such as when foraging or commuting) or fragmentation of an important commuting route could constitute an offence under EU legislation	Loss of this habitat could limit the resources available to the associated species and have a negative impact on biodiversity; development proposals should avoid significant net loss of biodiversity: - NPPF: biodiversity loss/gain - Local policy[3]
	Hedgehog (provides potential resting places and foraging/commuting opportunities)	Protected from harm under UK legislation	
	Provides nesting opportunities for birds	Birds, their eggs and active nests are protected under UK legislation	
	Provides suitable resting and foraging places for reptiles[1]	Protected from harm under UK legislation	
	Butterfly-bush and goats rue (Target Note 1 and 2)	-	Complete eradication from Site would contribute towards national and local policy regarding net gains in biodiversity. Cause of spread as a result of development proposals would have the opposite impact

Habitat	Features of importance associated with the habitat	Legal implications	Policy implication
Tall Ruderal	Provides suitable resting and foraging places for reptiles[1]	Protected from harm under UK legislation	Loss of this habitat could limit the resources available to the associated species and have a negative impact on biodiversity; development proposals should avoid significant net loss of biodiversity: - NPPF: biodiversity loss/gain - Local policy[3]
Scattered Trees	Intrinsic habitat value	-	Loss of this habitat could limit the resources available to the associated species and have a negative impact on biodiversity; development proposals should avoid significant net loss of biodiversity: - NPPF: biodiversity loss/gain - Local policy[3] - Draft New London Plan (2017) Policy G7 relates to trees and woodland
Scattered Trees Site-wide	Provides nesting opportunities for birds	Birds, their eggs and active nests are protected under UK legislation	Loss of this habitat could limit the resources available to the associated species and have a negative impact on biodiversity; development proposals should avoid significant net loss of biodiversity: - NPPF: biodiversity loss/gain - Local policy[3] - Draft New London Plan (2017) Policy G7 relates to trees and woodland
	Bats (foraging/commuting)	Significant disturbance of bats outside of a roost (such as when foraging or commuting) or fragmentation of an important commuting route could constitute an offence under EU legislation	
	Roosting Bats	If roosting bats are confirmed, an EPS licence would be required to facilitate loss or disturbance of roosting features.	
	Stag beetle[2]	-	
	Opportunities for badger foraging and commuting, would persist throughout proposed development works	Protected from harm under UK legislation	
Site-wide	Opportunities for badger foraging and commuting, would persist throughout proposed development works	Protected from harm under UK legislation	None

Habitat	Features of importance associated with the habitat	Legal implications	Policy implication
Notes 1. Common species only i.e. not including the two native European Protected Species of reptile: sand lizard and smooth snake. 2. Trees with standing deadwood – various within the Site. 3. Hillingdon Local Plan: Objective S08 & Policy EM7; The London Plan: Policy 7.19 and 7.21; Local BAP and specific Species Action Plans where relevant; Draft New London Plan (2017) Policy G6 (Biodiversity and Access to Nature).			

4.5 Opportunities for Achieving Biodiversity Gain

4.5.1 This section outlines the opportunities for achieving biodiversity gain presented by the proposals. These gains may be either already included within the detailed design or readily implementable as secured via suitably-worded planning conditions and/or Section 106 agreements.

Habitat enhancement and creation

4.5.2 The proposals will result in a minor net loss of biodiversity at the Site in terms of habitat/floral biodiversity. There will be on site opportunities to mitigate for some of the loss (as set out below) with further enhancements likely to be required offsite.

Habitat creation

4.5.3 The proposals present the opportunity to create a number of important habitats at the Site that are not currently represented:

- Native species-rich hedgerow;
    - Fruit/nut-bearing species such as hazel and dog-rose which are food sources for a number of birds, including the UK Priority species, such as house sparrow; and
    - Early-flowering species such as blackthorn and hawthorn and mid-summer flowering species such as dogwood which are valuable pollinator resources during seasonal periods of flower shortage.
- Shrubs and trees of local provenance and known wildlife value
    - Fruit/nut-bearing species such as wild cherry and hornbeam which are autumn and winter food sources for a number of birds, including the UK Priority species house sparrow; and
    - a high proportion of alder: a valuable foodplant to the UK Priority Species: alder flea weevil, for which low-resolution records were returned by the data search.
- Nectar and pollen-rich invertebrate foodplants
- Living roofs: green/brown roofs
    - The creation of brown roofs at the Site would provide opportunities for mobile brownfield species. This represents a significant enhancement because the Site currently has limited opportunities as natural habitat succession continues. Implementation of brown roofs would therefore secure a contribution to one of the aims of the Habitat Action Plan (HAP) for brownfields under the LBAP by promoting the retention and incorporation of wasteland habitats within new developments.

4.5.4 The inclusion of the above habitats, where possible, within the proposals makes an active contribution to Policy D1 of the Draft New London Plan (2017) by facilitating an inclusive environment and Policy G1 by designing and managing green features in the proposed built environment and integrated features.

4.5.5 Given the possible requirement for off-Site habitat compensation measures, the proposals also provide the opportunity to secure a number of net gains in terms of biodiversity within the SINC adjacent to the Site's eastern boundary. The Site would benefit from eradication of the LISI species (goat rue and butterfly-bush) and Schedule 9 species (Japanese knotweed), habitat enhancement/creation and ecologically-sensitive management.

Species enhancement

4.5.6 In addition to the habitat and floral enhancements detailed above, based on the habitats on Site and desk study data, the following species-specific enhancements would be appropriate and contribute to specific Species Action Plans (SAPs):

- Bats:
  - Bat boxes/integrated roosting features for species known to exist within the surrounding area, e.g. *Pipistrellus* sp. and brown long-eared bat.
- Birds:
  - Boxes/integrated nesting features for locally-prevalent birds including UK Priority species and local BAP species such as house sparrow.
- Invertebrates:
  - Increased provision of deadwood, including permanent features such as stag beetle loggeries for the UK Priority and local BAP species: stag beetle;
  - Insect hotels or similar within proposed greenspace; and
- Hedgehogs:
  - Provision of fruit-bearing trees; and
  - Hedgehog domes/features suitable for hibernation/day rests within areas of secluded open space.
- Amphibians and reptiles:
  - Purpose built habitat and hibernacula opportunities; and
  - Small ponds.

Eradication of Non-native Species

4.5.7 The proposals present the opportunity to secure eradication of Japanese knotweed (Schedule 9 species; off Site), butterfly-bush (LISI species) and goat rue (LISI species) from the Site. This would represent a significant net gain to biodiversity at the Site and reduce the risk of these species spreading to surrounding sites.

5. RECOMMENDATIONS

5.1 Introduction

5.1.1 This section outlines a series of recommendations appropriate to the proposed development at the Site.

5.1.2 The features of greatest ecological value are as follows:

- Mature native broadleaved trees (some retained);
- Broadleaved plantation woodland (off-site portions protected); and
- Broadleaved treeline (lost to development) under current proposals.

5.1.3 As outlined above a number of the above features, such as the broadleaved treeline and on-Site broadleaved plantation woodlands will be lost to the proposals and not replaced as a similar habitat. As such, off-Site compensation may be appropriate to comply with national and local policy (including the Habitat Action Plan for woodland under the Local BAP).

5.1.4 Where not already implemented as part of the detailed design, further, detailed implementation of recommendations or mitigation strategies can be secured via suitably-worded planning conditions. Failure to implement any of the recommendations outlined in this report may result in a net loss of biodiversity or contravention of relevant wildlife legislation as a result of the proposed development.

5.2 Surveys

5.2.1 Based on the evaluation further surveys are deemed appropriate and/or necessary to provide a fuller evaluation of the proposed development. A reptile survey is currently under way and scheduled to run until the middle of July as per recommendations in the previous study. Table 5.1 provides a summary of recommended surveys.

Table 5.1 Recommended further surveys and survey constraints

Species	Extent of survey	Extent of survey	Number of surveys & survey period required
Bats	T2: Direct inspection of feature. If not possible, then nocturnal survey.	T2: No restriction if all features can be accessed. If nocturnal survey is necessary, no less that 2 weeks apart between May-September, 1 dusk and 1 dawn survey	T2:1 survey if a direct inspection. 2 surveys between May – September if nocturnal surveys required

5.3 Retention and Enhancement

5.3.1 It is recommended that the opportunities for biodiversity enhancement are reviewed and considered when altering or finalising plans for development of the Site.

5.3.2 The species-specific enhancements described in Section 45 will positively contribute to local planning policy and the London BAP by providing a net gain to local biodiversity and specifically benefitting a number of UK Priority and local BAP species.

5.3.3 As identified during the desk-based landscape review (Section 3.4), the Site forms a large proportion of greenspace within an east-west local-level ecological corridor. Consequently, east-west connectivity across the Site is likely to be of high local importance, if not district importance, in terms of ecological connectivity. This potential importance is of particular prudence with regards to commuting bats.

5.3.4 As such, it is vital that development at the Site maintains at least one green corridor suitable for commuting bats across the Site in a general east-west orientation.

5.3.5 This east-west corridor along the northern Site boundary must be unlit in order to maintain its value to foraging and commuting bats as a dark corridor. In general, wildlife-sensitive lighting should be implemented throughout the Site. A sensitive lighting design scheme can be secured via a suitably worded planning condition.

5.3.6 Should the recommendations in respect of ecological connectivity and lighting not be incorporated within the development proposals, secured through suitably worded planning conditions or implemented effectively, further targeted survey work and evaluation in respect of foraging and commuting bats will be required to facilitate the proposed development at the Site.

5.4 Mitigation and Compensation

5.4.1 This Section is based solely on the current baseline data and will need to be reviewed and updated following the further survey works detailed in Section 5.2. It outlines recommended ecological control and protection measures to be undertaken to ensure:

- No harm comes to protected species;
- No significant net negative impact as a result of the proposed development is realised on the local conservation status of protected/notable species;
- No harm comes to the adjacent habitats;
- Pollution risk is minimised;
- Ecological best practice is followed;
- Conformity is made with current planning requirements pertaining to wildlife; and,
- Relevant wildlife legislation is not breached.

5.4.2 The following mechanisms will ensure implementation of the protection measures:

- **Licence applications** – any necessary licences will ensure compliance with European legislation (European Protected Species) and domestic legislation (badgers). The licence applications will provide detailed and specific protection measures and time frames for the given species. Based on current baseline data it is considered that badger, bat and great crested newt mitigation licences are required to facilitate construction in specific areas of the Site.

- **Ecological Management Team** – an Ecological Management Team will be appointed and will include:
  - Ecological Manager responsible for over-seeing all ecological works. Their role will include but not be restricted to: liaison with Natural England and other interested parties with an ecological interest, writing/approving Ecological permits, Certificates and Rectification notices, preparing licence applications, writing and approving tool box talks and providing ecological guidance to the Site team.
  - Ecological Clerk of Works (ECoW) whose role will include but not be restricted to: supervision of works in medium to high risk zones, delivering tool box talks, ensuring licence requirements and ecological protocol are adhered to and raising quality alerts and stop works (if appropriate) for any non-compliance with ecological protocol/permits.
- **Biodiversity Champion** (or similar) – a Biodiversity Champion will be appointed within the construction team (this can be the Site/Project Manager or representative from the Main Contractor).
  - This person will be responsible for ensuring that this Ecological Implementation and Mitigation Plan and the information given during the Tool Box talks are adhered to.
  - This person will contact the Ecological Manager if they are in any doubt about ecological/wildlife aspects of the works.
- **Ecological Audits** – Works will be controlled and audited through a series of documents:
  - Ecological Permits to Work – issued prior to works commencing by the Ecological Manager. These will set out details of protection measures and responsibilities for specific Site operations. They will be time and area limited.
  - Ecological Certificates – issued following completion of location or works covered by an Ecological Permit to Work to an acceptable standard. Issued by the Ecological Manager.
  - Rectification Notices – issued by the Ecological Manager/ECoW where deemed appropriate.
  - Daily Record Sheets – Completed by the ECoW to record actions and observations each day during ecological supervision and Site visits. Used to inform Ecological Permits, Certificates and Rectification Notices.
  - Weekly Report - Completed by the ECoW based on the Daily Record Sheets.
  - Monthly Report – Completed by the Ecological Manager highlighting any issues encountered during the month and identifying any necessary amendments to management/protection measures etc to ensure continued safe guarding of ecological features. To include revised Ecological Risk Zone plan as appropriate.
- **Tool box talk** – To be given to all Site staff, including those joining later in the project. Site staff to be made aware of the safeguard measures put in place and why they are necessary.
- **Ecological Risk Zones** – A plan will be produced indicating different areas of ecological risk associated with the works. This will be a 'live' plan and will be continually updated throughout the construction period to reflect changing situations as mitigation is implemented, e.g. habitat reduction and any species re-locations. Where necessary these zones will be clearly marked on the ground using fencing appropriate to the situation and level of risk. Fencing may range from 'spike-and-rope' to Heras fencing. A summary table will accompany the plan detailing specific control measures for each zone.

5.4.3 The measures detailed focus on legally protected and notable species but will also ensure harm and disturbance is minimised to other fauna, such as rabbits, deer and foxes that utilise the Site.

Generic safeguarding measures

5.4.4 Ecological tool box talk:

- To be given to all contractors on Site during their Site induction making them aware of potential for protected/notable habitats and species, the need for protective fencing and pollution awareness. This should cover birds, bats, badgers, reptiles, invertebrates, hedgehogs, other fauna, non-native invasive species and retained habitats within the works areas and adjacent areas.
- Following the tool box talk, Site contractors should have sufficient knowledge and confidence to provide a watching brief in low risk areas and during low risk operations and know when to contact the Ecological Management Team for guidance and assistance.

5.4.5 Permits to Work:

- Prior to any work taking place in ecological risk zones an appropriate Permit to Work will be issued by the Ecological Manager and counter-signed by the contractor agreeing to any necessary mitigation requirements.

5.4.6 Ecological Risk Zones:

- A plan will be produced showing areas of high, medium and low ecological risk. Each risk zone will have different levels of ecological mitigation and control:
  - High Risk (red zones) – areas of greatest ecological sensitivity and/or most vulnerable to damage. These zones will be subject to the most stringent level of control and supervision (typically full-time). Examples of such zones include, but are not restricted to: nesting bird habitats (during nesting season), situations requiring a protected species licence, notable and protected species directly affected by works, and species that may be sensitive to disturbance (e.g. Schedule 1 nesting bird species). Works to stop immediately if any ecological concerns arise.
  - Medium Risk (amber zones) – areas of moderate to high ecological value and/or vulnerability which may be directly or indirectly affected by the works. Works in these zones will be regularly monitored by the ECoW. Examples of such zones include, but not restricted to: nesting bird habitats (outside of nesting season); protected/notable species between 100 – 500 m of the works. Works to stop immediately if any ecological concerns arise.
  - Low Risk (green zones) – areas of low ecological value and/or vulnerability. In these zones works will adhere to best practice at all times within only periodic monitoring by the ECoW (regularity to be determined by the ECoW in conjunction with the Biodiversity Champion). Works to stop immediately if any ecological concerns arise.

5.4.7 Pollution:

- The former Pollution Prevention Guidelines (PPG) have been withdrawn while they are being reviewed and updated. Until such time as new guidance becomes available, standard industry best practice in relation to construction sites and dust production/water pollution must be adhered.

Further guidance is to be documented in a Construction Environmental Management Plan (CEMP). Measures to include:

- Throughout the construction period appropriate spill kits to be readily available at all times;
- Fuel to be appropriately and safely stored to current construction Site standard; and
- Dust damping measures.

5.4.8 Works between sunset and sunrise:

- To be avoided.
- If works cannot be avoided then there is to be no significant increase in external light and noise over and above what is anticipated in the area post construction.

Habitats – Retained and Adjacent to Site

5.4.9 Trees:

- Tree and hedgerow root protection zones to be clearly marked with fencing throughout the development works, e.g. Heras fencing. Fencing to follow British Standard BS5837:2012 Trees in Relation to design, demolition and construction.
- No spoil to be deposited, ground-breaking or heavy machinery works to take place within the root protection zones of retained trees without prior consultation and agreement from a suitably qualified arboriculturalist.

5.4.10 Air and waterborne pollution:

- Standard industry best practice in relation to construction sites and dust production/water pollution will minimise impacts to retained/adjacent habitats.

Badgers

5.4.11 Prior to works commencing the full Site area will be checked by the Ecological Clerk of Works for the presence of badgers to ensure no other badger activity areas are present. Search area to extend 30 - 50 m beyond the works footprint.

- General protection measures during construction shall include:
  - Any trenches and excavations are to be covered at night and when construction staff are not on Site and/or a means of escape provided for any animals that may fall in. Escape ramps should be no greater than an angle of 45°. Covering trenches and excavations is preferable as harm may come to some animals if they fall in; risk of harm is greater with trenches/excavations over 1 m deep and if water collects. Trenches to be checked for trapped animals at the start of each day.
  - Pipes to be capped or covered at night and when construction staff are not on Site to prevent badgers (and other fauna) entering and becoming trapped.
  - Conditions not be created that may be utilised by badger, e.g. piles of soft earth. If such features are unavoidable, they should be appropriately fenced to prevent badgers gaining access.

Bats

5.4.12 Lighting:

- No additional flood lighting to be used between sunset and sunrise without agreement with the Ecological Clerk of Works.
- Retained off-Site habitats, such as the A40 landscape planting and off-Site portion of broadleaved plantation woodland are to remain unlit during construction works.

5.4.13 Potential Bat Roosts (Trees)

- **Tree T1** supports features of 'low' suitability for roosting bats. Under current guidance and best practice this if this tree requires removal, it should be done using soft-felling techniques with branches cut and gently lowered to the ground utilising a sling. Prior to felling a direct inspection of the feature will be required with a torch, inspection lens and or an endoscope to determine if any bats are present. If any individuals are present, they should be relocated to an appropriate roosting feature within a nearby tree.
- **Tree T2** supports features of 'moderate' suitability for roosting bats. Under current guidance and best practice, further survey work is required on this tree if this tree is to be lost. If results return negative for bat use/roosts no further mitigation will be necessary. If the tree is confirmed as a roost, a Reasonable Avoidance Statement and/or license application will be necessary. This may include temporary exclusion of bats to features or timing of works to avoid sensitive periods.

Reptiles

5.4.14 A reptile survey is currently ongoing and slow worms have been confirmed as present; this survey includes the wider extended Site to the south and east. An indicative mitigation approach will be provided within the reptile report following completion of the surveys.

Nesting Birds (General)

5.4.15 Works in close proximity to or involving felling/removal of trees/shrub during the core nesting season (March to August inclusive):

- Immediately prior to works commencing (within 48 hours) an inspection by the ECoW is necessary to check for any evidence of nesting or nest-building birds. If evidence is found, works may be delayed.

5.4.16 If nesting birds or nest-building birds are found at any stage during construction works:

- All works that are likely to cause disturbance and/or within the zone of influence of the birds, MUST stop and not re-commence until advice has been received from the ECoW/Ecological Manager.
- Depending on the species, situation, stage of nesting and works in immediate vicinity, it is likely that an exclusion zone will be put up around the nest and works will be stopped or restricted within the exclusion zone.

Other fauna (including hedgehog and wild mammals)

5.4.17 Sensitive working protocol will be required to limit the risk of harm to any small mammals present during ground clearance works.

5.4.18 Dependant of timing of works but likely to involve the following (this method is consistent with other vegetation clearance approaches for other fauna groups, e.g. reptiles and will run in tandem where necessary):

5.4.19 Phase 1:

- Check for presence of common/ widespread/ highly mobile fauna. Any animals present to be removed or encouraged to move to a place of safety following best practice at the time.
- Vegetation to be cut to a height of 150 mm, in a continuous direction allowing any fauna to disperse. All cut material to be removed immediately off-site/to an area that will not be affected by the proposed works.
- Check for potential refugia/burrows and dismantle with care and in a controlled manner. This may require to be completed using handheld tools.
- Hedgehog specific considerations:
    - If active hedgehogs are encountered works that are likely to cause disturbance and/or within the zone of influence of the hedgehog MUST stop and not re-commence until advice has been received from the Ecological Clerk of Works/Ecological Manager.
    - If required, the Ecological Clerk of Works will carefully move the hedgehog by hand from the construction area to nearby retained habitat features away from construction works.
    - If a hibernating hedgehog is encountered (i.e. during the months of November to February) works MUST stop and the Ecological Clerk of Works will assess the situation. If the hedgehog can be left *in-situ* then the nesting material will be carefully replaced and suitable food/water will be left in the area as a precaution should the hedgehog come out of hibernation. The nest area will be monitored by the Ecological Clerk of Works until it is evident that that hedgehog has moved on. If the hedgehog is left *in-situ* then habitat connectivity must be maintained, i.e. it must not become isolated by being surrounded by areas of high-risk and/or low suitability. If there is an imperative reason for the clearance works to continue then the Ecological Clerk of Works would be required to carefully relocate the hedgehog within its nesting material to an appropriately sheltered location away from the works area. Food and water would be left in the vicinity of the relocation site as a precaution should the hedgehog come out of hibernation.

5.4.20 Phase 2:

- Second check for presence of common/widespread/highly mobile fauna. Any animals present to be removed to a place of safety following best practice at the time (see above for hedgehog requirements).
- Vegetation to be cut to ground level.

5.4.21 Phase 3:

- Vegetation to be maintained short at ground level until works commence within the area to ensure that it remains unfavourable for common/widespread/highly mobile fauna that may re-disperse into the area. Use of appropriate/approved herbicide may be acceptable; to be determined by the Ecological Manager/Landscape Architect at the time. If vegetation starts to grow the area will need to be re-checked for the presence of fauna before works commence.

5.4.22 Throughout construction period:

- Creation of habitat that fauna (including small animals, reptiles/amphibians) may use for refuge, e.g. piles of construction material or loose-packed spoil, to be avoided.
- If evidence of specifically protected species comes to light during the development then works that are likely to cause disturbance and/or within the zone of influence of the animals should stop until advice has been sought from the Ecological Clerk of Works.

5.4.23 See also paragraph 5.4.11; measures put in place to protect badgers will also protect other fauna.

Invasive and LISI Plant Species

5.4.24 All goats rue and butterfly-bush removed during works to be appropriately disposed of in a manner to minimise risk of spread to neighbouring areas or elsewhere within the Site. Appropriate disposal to preferably involve fine-chipping and/or landfill. As individual plants, these species are considered to be recognisable and well-known enough that, should recommended contractors be utilised, a contractor watching brief will suffice to supervise removal. Otherwise, individual plants can be marked with high-visibility tape by the ECoW for sensitive disposal no more than three days prior to vegetation clearance works.

5.4.25 If any works are scheduled within close proximity of the Japanese knotweed identified onsite a detailed method statement may be required to inform works.

Summary of protection measures

5.4.26 Table 5.2 provides an over-view summary of protection measures required to safeguard wildlife and habitats within and in the immediate environs of the proposed works based on the baseline documented in this current report. This Table must not be read/used in isolation; it is a brief summary of the specific details and protection measures described in the preceding sections.

Table 5.2 Summary of protection measures and the stages of works that they are implemented

Measure	Before any work on Site	Before any works to grassland	Before any works to or in proximity to trees/ shrub	Before any works on or in close proximity to T1 or T2	Throughout works period
Tool box talks					5.4.4*
Appointment of biodiversity champion	5.4.2				

Measure	Before any work on Site	Before any works to grassland	Before any works to or in proximity to trees/ shrub	Before any works on or in close proximity to T1 or T2	Throughout works period
If required licence applications, e.g. bats if roost confirmed	5.4.2				
If applicable work to conditions/ method statement of licences	5.4.11 5.4.13				5.4.11 5.4.13
Pre-works at height check of PRFs by suitably qualified and licensed ECoW				5.4.13	5.4.13
Production of mitigation strategy for reptiles if required	5.4.14		5.4.14		5.4.14
Issuing of Ecological Permits etc					5.4.5
Pollution prevention					5.4.7 5.4.10
Works to be avoided between sunset and sunrise					5.4.8
Erect protection fencing around retained trees	5.4.9				
No access/plant storage/material storage in fenced off areas					5.4.9
Check for badgers	5.4.11				
Controlled habitat reduction	5.4.17 5.4.24 to 5.426	5.4.17 5.4.24 to 5.426	5.4.17 5.4.24 to 5.426		
No creation of temporary features that may be used by fauna for refuge^					5.4.22
Check for nesting birds			5.4.15	5.4.15	
Use of flood lights to be avoided					5.4.12
Escape ramps/covering trenches/excavations/capping/pipes etc					5.4.11
Daily check for fauna, notable trenches, pipes etc	5.4.11				5.4.11

Notes
Numbers refer to sections in paragraph numbers of the current document
* To be provided to all staff working on site (incorporated into general induction process where possible)
^ Other than those specifically designed for them as part of the biodiversity enhancement measures

6. CONCLUSIONS

6.1.1 Based on the current study:

- Completion of the reptile survey are considered necessary in order for the LPA to validate/grant planning permission except under exceptional circumstances and conditioned method statement and stringent mitigation considered appropriate by the LPA.
- No Statutory Nature Conservation Sites will be negatively impacted by the proposed works.
- Non-native invasive species are present on site. The proposed development of the Site presents opportunity to eradicate such species and reduce their spread to the adjacent SINC. A method statement may be required for works within close proximity of the Japanese knotweed depending on the extent of the works footprint in this area.
- The proposed works present the potential to provide biodiversity enhancement for a number of faunal species at the Site and for biodiversity in general within the local area.

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8. GLOSSARY

Scientific Terms and Acronyms

Badger sett An underground complex of tunnels utilised by badger as a den and accessed by one or more entrances at ground surface level.

BoCC Birds of Conservation Concern The UK Red-list for birds, produced by the British Trust for Ornithology and last updated in December 2015.

GIGL Greenspace Information for Greater London

CIEEM Chartered Institute of Ecology and Environmental Management; the professional organisation and provider of professional codes of conduct for ecological consultancy.

Defunct hedgerow A hedgerow which is not stock proof without the need for fencing.

EPS European Protected Species For the purposes of this report EPS are species that require particular licences to allow certain works to go ahead. Species falling within the following situations are not considered as EPS within this report:

- Birds listed on Appendix 2 of the Bern Convention (European legislation). The protection requirements of this Appendix are fully integrated in UK law, notably through the Wildlife and Countryside Act 1981 (as amended).
- Birds listed on Annex 1 of the Birds Directive (European legislation). The protection of such species survival and reproduction within their geographic distribution is ensured through special conservation measures in relation to their habitats. Such measures are implemented through the establishment of Special Protection Areas. Therefore, any implications are considered at regional habitat and country level rather than individual bird/species level.

FEP Farm Environment Plan.

Important hedgerow Any hedgerow which has existed for 30 years of more and satisfies a number of criteria listed within Part II of Schedule 1 to the Hedgerow Regulations 1997. For the purposes of this report, only wildlife and landscape criteria are considered; archaeological and historical criteria are not assessed.

Intact hedgerow A hedgerow which is stock proof with the need for fencing.

LBAP Local Biodiversity Action Plan.

Level of protection – 'EU' Protected under the Conservation of Habitats and Species Regulations (2017).

Level of protection – 'UK' Protected under the Wildlife and Countryside Act 1981 (as amended).

LNR Local Nature Reserve. Statutory designation designated for value to both people and wildlife.

Non-native invasive species For the purposes of this report: species listed on Schedule 9 of the wildlife and Countryside Act 1981 (as amended). Unless otherwise stated widely naturalised species, such as grey squirrel, are not included.

Notable species A species which is listed as a UK Priority Species, carries an unfavourable conservation status (e.g. scarce, rare, threatened, Red-listed), is invasive or is otherwise worthy of note from an ecological perspective.

OMH Open Mosaic Habitat A UK Priority Habitat characterised generally by a mosaic of colonising vegetation on previously developed land with loose and/or sandy soil. Generally of significantly elevated value to invertebrates.

Protected species A species protected under specific UK or European legislation, including Habitats Directive, Wildlife and Countryside Act.

SAC Special Area of Conservation. Designated under European Union Habitat Directive (92/43/EEC) to protect species and habitat of European interest.

SPA Special Protection Area. A site designated under the European Union Directive on the Conservation of Wild Birds.

SSSI Site of Special Scientific Interest. Statutory designation of biological or geological importance.

UK Priority Habitat/Species A habitat or species identified as a priority for conservation in accordance with Section 41 of the Natural Environment and Rural Communities Act (2006). Section 40 of the Act places a duty on public authorities to have regard for the conservation objectives of these habitats and species. (Also known as Section 41 (S41) habitats/species).

8.1 Scientific Names

8.1.1 Scientific names of species mentioned in this report are outlined in Table 8.1.

Table 8.1 Scientific names of species mentioned within this report

English Name	Scientific Name
Mammals	
Hedgehog	*Erinaceus eurpaeus*
Eurasian Badger	*Meles meles*
Common pipistrelle	*Pipistrellus pipistrellus*
Brown long eared	*Plecotus auritus*
Amphibians	
Great crested newt	*Triturus cristatus*
Plants	
Fescue sp.	*Festuca* sp.
Yarrow	*Achillea millefolium*
Common ash	*Fraxinus excelsior*
Silver birch	*Betula pendula*
Field maple	*Acer campestre*
Yorkshire fog	*Holcus lanatus*
Perennial rye	*Lolium perenne*
Common couch	*Elymus repens*
Meadow fox-tail	*Alopecurus pratensis*
Birds foot trefoil	*Lotus corniculatus*
Plantains sp.	*Plantago* sp.
Black medic	*Medicago lupulina*
Selfheal	*Prunella vulgaris*
Pedunculate oak	*Quercus robur*
Wild Cherry	*Prunus avium*
Goat willow	*Salix caprea*
Horse chestnut	*Aesculus hippocastanum*
Blackthorn	*Prunus spinosa*
Bramble	*Rubus fruticosus*
Dog rose	*Rosa cannina*
Butterfly bush	*Buddleja*
Common nettle	*Urtica dioica*
Dock sp.	*Rumex* sp.
Thistle sp.	*Cirsium sp.*
Greater willowherb	*Epilobium hirsutum*
Common hogweed	*Heracleum sphondylium*

Norway maple	*Acer platanoides*
Lawson cypress	*Chamaecyparis lawsoniana*
Japanese knotweed	*Fallopia japonica*
Goat rue	*Galega officinalis*
Invertebrates	
Stag beetle	*Lucanus cervus*

APPENDICES

PLANS AND SITE PHOTOGRAPHS

Drawing BMD.19.020.DRE.900: Survey Extent Plan

BMD.19.020.DRE.901: Phase 1 Habitat Survey Plan

NOTES
1. THIS DRAWING IS BASED ON LASER SURVEYS 8063 AND PHASE 1 HABITAT DRAWINGS: BMD.18.052.DRE.901 AND BMD.19.020.DRE.901
2. DO NOT SCALE FROM THIS DRAWING
3. ANY DISCREPANCIES WITHIN THIS DRAWING OR BETWEEN THIS DRAWING AND ANY OTHER INFORMATION IS TO BE REPORTED TO BMD FOR CLARIFICATION

LEGEND

- APPLICATION BOUNDARY (AS PER COLLADO COLLINS DRAWINGS)
- OWNERSHIP BOUNDARY (AS PER COLLADO COLLINS DRAWINGS)
- 2018 survey area
- 2019 extended area
- Site clearance between 2018 and 2019 surveys

N

0 250 500 1000
METERS

Rev	Description	Date

Purpose of Issue
PLANNING

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Client
INLAND HOMES

Project
HILLINGDON GARDENS

Drawing Title
SURVEY EXTENTS

Drawn	Checked	Approved	Date: Survey
HSM	MH	JP	2018/2019
Job No.	**Scale**	**Sheet Size**	**Revision**
19.020	1:1000	A3	A
Drawing Number		**Date: Drawing**	
BMD.19.020.DRE.900		11/09/2019	

NOTES
1. THIS DRAWING IS BASED ON DRAWING LASER SURVEYS 8063
2. DO NOT SCALE FROM THIS DRAWING
3. ANY DISCREPANCIES WITHIN THIS DRAWING OR BETWEEN THIS DRAWING AND ANY OTHER INFORMATION IS TO BE REPORTED TO BMD FOR CLARIFICATION

[A40 Dual carriageway]

[Broadleaf plantation & main road]

[Poor semi-improved grassland]

[Amenity grassland & road]

LEGEND

- Survey area
- Dry ditch & tree line
- Fence
- Broadleaf plantation woodland
- Scattered scrub
- Introduced shrub
- SI Poor semi-improved grassland
- A Amenity grassland
- Tall ruderal
- Bare ground
- Hard standing
- Broadleaf tree
- Target note
- [Adjacent habitat]

Target notes

1 Goats rue
2 Butterfly bush
3 Spoil pile
4 Tree with bat potential: low (T1)
5 Tree with bat potential: moderate (T2)
6 Japanese knotweed

N

0 0.03 0.06 0.09 0.12 km

Rev	Description	Date

Purpose of Issue
PLANNING

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Client:
Inland Homes

Project
HILLINGDON GARDENS

Drawing Title
PHASE 1 HABITAT SURVEY

Drawn	Checked	Approved	Date: Survey
HSM	MH	JP	01/07/2019
Job No.	**Scale**	**Sheet Size**	**Revision**
19.020	1:1000	A3	-
Drawing Number		**Date:**	
BMD.19.020.DRE.901		17/07/2019	

PHOTO SHEETS

Photograph 1: Hardstanding dominated the Site, view looking north east.

Photograph 2: Broadleaved plantation along northern boundary, view looking north west.

Photograph 3: Broadleaved plantation along western boundary, view looking south.

Photograph 4: Poor semi-improved grassland within eastern parcel, view looking north.

Photograph 5: Tree line forming boundary between eastern and western sections of Site, view looking east.

Photograph 6: Tree line along northern boundary of semi-improved grassland in southern section of Site.

Photograph 7: Line of semi mature hornbeam along western boundary of poor semi-improved grassland in southern section of Site, view looking south.

Photograph 8: Tree line along southern Site boundary, view looking east.

Photograph 9: Scattered scrub along boundary dissecting the Site.

Photograph 10: Dense scrub within eastern field parcel, view looking east.

Photograph 11: Scattered scrub within poor semi-improved grassland in southern section of Site. View looking south.

Photograph 12: Bare ground adjacent to plantation along northern boundary.

Photograph 13: Bare ground adjacent to tree line dissecting Site, view looking south.

Photograph 14: Butterfly bush colonizing spoil pile in south west corner of Site, view looking north west.

Photograph 15: Tall ruderal vegetation within the eastern field parcel.

Photograph 16: Scattered trees on Site.

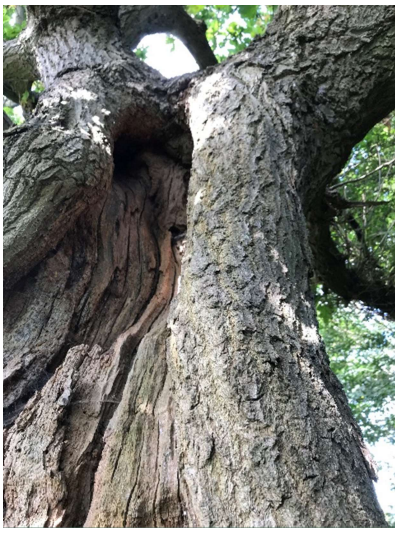
Photograph 17: Dry ditch along western boundary of eastern field parcel.

Photograph 18: Spoil pile along southern boundary.

Photgraph 19: Target note 1, invasive goat rue present within poor semi-imporved grassland and colonising patches of bare ground onsite

Photgraph 20: Target Note 2 and 3, Invasive butterfly bush on spoil pile near Site entrance.

Photograpgh 21: T1, Target Note 3, Pedunculate oak with 'low' bat roosting potential, set within eastern field parcel.



Photograph 22: Central cavity within T1 from broken limb.

Photograpgh 23: T2, Target Note 2, weeping willow with 'moderte' bat roosting potential, set within southern section of Site.

Photograpgh 24: Woodpecker hole and unoccluded bark on T2

Photograpgh 25: Target Note 6, Japanese knotweed adjacent to Site

A. POLICY, GUIDANCE AND LEGISLATION

A.1.1 Tables A.1 and A.2 provide a summary of wildlife legislation and policy of relevance to development at the Site.

Table A.1 Overview of species/species groups relevant to the current proposals and associated legislation and policy

Species/Species group	European	UK[1]	Priority species[2]
Badger		✓	
Bats (all species)	✓	Full	Species dependent
Birds		Full	Species dependent, incl. House sparrow
Invasive species	✓	✓	Various
Invertebrates	Various	Various	Various, incl stag beetle
Mammals (general)		Species-dependent	Incl. hedgehog
Plants	Various	Species-dependent	Various
Reptiles (excluding sand lizard and smooth snake)		Partial – incl. killing and injury	✓

Notes
[1] Principally the Wildlife and Countryside Act: Full = full protection, either from the Wildlife and Countryside Act 1981 (as amended) alone or in combination between this act and European legislation; partial = partially protected. ✓ = covered by other specific legislation.
[2] Includes over 900 species listed in accordance with section 41 of the NERC Act (2006). Species known or most likely to utilise the Site are indicated where appropriate.

Table A.2 Relevant species legislation for development at the Site

Species / group	Legislation[see notes]												
	1	2	3	4	5	6	7	8	9	10	11	12	13
Amphibians									✓				
Badger	✓					✓							✓
Bats (all species)				✓		✓		✓	✓				✓
Birds (nesting)		✓	✓						✓				
Invasive species							✓			✓	✓	✓	
Invertebrates									✓				
Hedgehog						✓			✓				✓
Plants									✓				
Reptiles					✓				✓				

Notes
[1] Protection of Badgers Act 1992
[2] Wildlife and Countryside Act, 1981 (as amended) – Part 1
[3] Wildlife and Countryside Act, 1981 (as amended) – Schedule 1 (some species, none recorded within the Site)
[4] Wildlife and Countryside Act, 1981 (as amended) – Schedule 5, Section 9 (4b, 4c) and (5)
[5] Wildlife and Countryside Act, 1981 (as amended) – Schedule 5, Section 9 (1, in respect of killing and injuring) and (5)
[6] Wildlife and Countryside Act, 1981 (as amended) – Schedule 6, Section 11
[7] Wildlife and Countryside Act, 1981 (as amended) – Schedule 9, Section 14
[8] Conservation of Habitats and Species Regulations 2017 – Schedule 2 (European protected species)
[9] Natural England and Rural Communities Act (2006) – Various species listed in accordance with Section 41
[10] Invasive Species regulations: EU Regulation (1143/2014) on invasive alien (non-native) species
[11] Anti-social Behaviour, Crime and Policing Act 2014
[12] Environmental Protection Act 1990
[13] Wild Mammals (Protection) Act 1996

A.1.2 The key national planning policies and documents are:

- The National Planning Policy Framework (2019); and
- The Natural Environment and Rural Communities (NERC) Act (2006).

A.2 Local Planning Policy

Hillingdon Local Plan (Part 1 – Strategic Policies) (2012)

A.2.3 The Hillingdon Local Plan (Adopted November 2012) outlines the core policies in regards to planning and development conducted throughout the borough of Hillingdon. The policies and objectives aim to ensure that biodiversity gets integrated into developments to provide a balance between continued growth within Hillingdon and conservation across the borough.

A.2.4 The following policies and objectives are of relevance to this project:

- **Objective S08:** Protect and enhance biodiversity to support the necessary changes to adapt to climate change. Where possible, encourage the development of wildlife corridors.
- **Policy EM7**: *"Hillingdon's biodiversity and geological conservation will be preserved and enhanced with particular attention given to:"*
  - The protection and enhancement of protected species and including UK priority species and habitats and those included within London and Hillingdon Biodiversity Action Plans;
  - The provision of biodiversity improvements from all development, where feasible;
  - The provision of green roofs and living walls which contribute to biodiversity and help to tackle climate change.

The London Plan (2016)

A.2.5 The London Plan, adopted during 2016, was introduced as a strategic plan to set out the objectives and methods of development over the next 20-25 years. The following policies regarding biodiversity are of relevance to developments and this report:

- **Policy 7.19**: (Biodiversity and Access to Nature) – Development proposals should:
  - Make contributions to protecting, enhancing and conserving biodiversity where possible;
  - Assist in achieving targets set out within Biodiversity Action Plans;
  - Not have a negative impact on the conservation status of protected and priority species identified within London.
- **Policy 7.21:** (Trees and Woodlands) – Development proposals should:
  - Protect, maintain and enhance trees and woodlands; and
  - Retain existing trees of value wherever appropriate and plant additional trees as replacements to any lost that are appropriate species to the area.

Draft New London Plan – Consolidated Suggested Changes Version July 2019

A.2.6 The Mayor has published a draft of his new London Plan for consultation between 1st December 2017 and 2nd March 2018. When adopted it will form a statutory part of the London Borough Development Plan and thus will be used in the determining of planning applications.

A.2.7 Section 70(2) of the Town and Country Planning Act 1990 sets out that when determining planning applications, the authority shall have regard to the provisions of the development plan, so far as material to the application, and to any other material considerations.

A.2.8 The current 2016 consolidation plan is still a statutory part of the adopted development plan and is the starting point for making decisions on planning applications.

A.2.9 However, as section 70(2) of the act identifies, the draft London Plan would be a material consideration in making planning decisions. The question therefore is how much weight should be afforded to it in its current state.

A.2.10 Consultation on the new London Plan is currently underway as it moves through the process to adoption with the latest iteration being the July 2019 Draft (which includes consolidated suggested changes). One of the three principle purposes of the new London Plan is *"promoting the improvement of the environment in Greater London"*. Since the new London Plan will legally comprise part of London's Local Planning Authorities' Development Plans, this should be a key purpose of developments within London, including the development at the site.

A.2.11 A number of specific Policies within the new London Plan are of relevance to the proposed development at the site. These include:

- **Policy G1** (Green Infrastructure). This policy states that green features in the built environment (such as green roofs and street trees) should be protected, planned, designed and managed as integrated features of green infrastructure.
- **Policy G4** (Open space) confirms that the creation of new areas of publicly accessible green and open space should be supported. Nature conservation areas, even those smaller than 2 ha, are included in the categorisation of green infrastructure.
- **Policy G5** (Urban greening). This policy states that major developments should contribute to urban greening through provision of natural features within the design such as living roofs and walls and planting of trees.
- **Policy G6** (Biodiversity and access to nature). This policy explicates that "*Development proposals should manage impacts on biodiversity and aim to secure net biodiversity gain. This should be informed by the best available ecological information and addressed from the start of the development process"*.
- **Policy G7** (Trees and woodland). This policy states that "*London's urban forest and woodlands should be protected and maintained, and new trees and woodlands should be planted in appropriate locations in order to increase the extent of London's urban forest*". The policy explicates that development proposals should retain quality trees where practicable and provide replacements to

those removed. The policy also states that planting of additional trees should generally be included within new developments.

London Biodiversity Action Plan

A.2.12 Created by the London Biodiversity Partnership prior to disbanding in 2013, the London Biodiversity Action Plan (BAP) was introduced to target specifically protected species and habitats within Greater London. The London Biodiversity Partnership identified 214 priority species (the list of which was last reviewed in 2007) under threat within the London Borough which all require consideration when planning decisions are being discussed. Eight species identified by the London Biodiversity Partnership require targeted action with their own action plans.

A.2.13 The following habitat action plans and species action plans are of relevance to the proposals with the specific aims set out as part of the London Biodiversity Action Plan:

- **Woodland**:
  - To conserve, enhance and increase the extend of London's woodland;
  - To significantly increase the area of woodland; and
  - To increase the sustainable economic use of woodland.
- **Wasteland**:
  - To promote retention incorporation and management of wasteland habitats within new developments;
  - To maintain a diverse network of wasteland sites; and
  - The highlight the value of wasteland sites.
- **Bats**:
  - To reverse the current declines in bat populations within London;
  - To address the misconceptions held by London residents regarding bats to regard them as a culturally valued species.
- **Stag beetle**:
  - To conserve, enhance and protect populations of stag beetle within London;
  - To unearth reasons for uneven stag beetle distributions across London;
  - To increase public awareness of stag beetles regarding their importance.
- **Reptiles**:
  - To protect and conserve native reptile species within Greater London;
  - To promote awareness regarding reptile conservation across Greater London.
- **House sparrow**:
  - To focus attention on the decline of house sparrows across London to raise awareness of their conservation and importance for London;
  - To understand the reasons for declines in London and identify measures of mitigation to reverse such declines.

B. ASSESSMENT METHODOLOGIES

B.1 Desk Study

B.1.1 The desk study involved:

- Gathering and analysing existing ecological data within the site boundary and extending to a radius of 5 km; and
- Reviewing readily available habitat data within 1 km radius of the site boundary.

B.1.2 The results of the desk study were used to aid in the interpretation of the survey results and were obtained from the following sources:

- Previous ecology surveys;
- GiGL (Greenspace Information for Greater London Record Centre);
- The Multi-Agency Geographical Information for the Countryside (MAGIC) – web-based database;
- The Draft Natural England Open Mosaic Habitat Database;
- The Woodland Trust Ancient Tree Inventory;
- Natural England Great crested newt class licence database;
- Readily available maps (modern and historic);
- Readily available aerial photographs.

B.1.3 In terms of species, particular attention was given to the following species/species groups:

- Amphibians;
- Badgers;
- Bats;
- Birds;
- Invertebrates (as appropriate based on geographic location and habitats present on Site);
- Invasive species (as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended));
- Plants (as appropriate based on geographic location and habitats present on Site);
- Reptiles
- Water vole and otter.

B.1.4 Some species, such as the blue tit, may be listed on red data books but described as neither threatened nor near threatened; such species are not included in the protected and notable species tables within the desk study sections.

B.1.5 For the purposes of this report species falling within the following situations are not indicated as having European level of protection in the desk study tables:

- Birds listed on Appendix 2 of the Bern Convention (European legislation). The protection requirements of this Appendix are fully integrated in UK law, notably through the Wildlife and Countryside Act 1981 (as amended).

- Birds listed on Annex 1 of the Birds Directive. The protection of such species survival and reproduction within their geographic distribution is ensured through special conservation measures in relation to their habitats. Such measures are implemented through the establishment of Special Protection Areas. Therefore, any implications are considered at regional habitat and country level rather than individual bird/species level.

B.2 Extended Phase 1 Habitat Survey

B.2.1 The Extended Phase 1 Habitat Survey involved a walk-over of the site recording and mapping the various habitats present (as defined by and in line with the standard methodology in JNCC, 2010) in each definable land parcel. Where applicable, land parcels were separated into their component habitats. The main floristic species present in each habitat were recorded and, where appropriate, their relative abundance noted using the DAFOR scale:

- Dominant (D);
- Abundant (A);
- Frequent (F);
- Occasional (O);
- Rare (R); and
- Locally (L) [may prefix other scores].

B.2.2 In addition to the floristic component of each habitat or habitat parcel (where it had a different character), each was described in terms of its likely origin (e.g. self-established, planted), character, condition and management. The condition of the habitat was determined using professional judgement and criteria used to inform FEPs.

B.2.3 Attention was also paid to the presence or potential for protected and notable species occurring on Site. This focused on the species/species groups as listed in paragraph B1.3.

B.2.4 Target notes were used to aid the interpretation of mapped habitats to indicate notable features within the Site.

B.3 Evaluation

Habitats

B.3.5 The habitats were assessed against the criteria and descriptions of Priority Habitats to determine if there could be considered as Priority Habitat and, therefore, likely to have greater implication on developing the Site.

B.3.6 Habitats were also considered in relation to their wider landscape integration, notably connectivity and acting as a buffer to other habitats or protected sites.

B.3.7 The habitat condition assessments and valuation used to inform FEP are also used in Biodiversity Impact Assessment Matrices. Therefore, have been used in this Ecological Assessment to help determine the

importance of the habitats within the Site. In the majority of cases habitats were assessed at Site or local level. Exceptions may be where the habitats are good examples of a Priority habitat or a localised/rare habitat in the area whereby they may be considered at District or National level. Descriptions of national and local Priority Habitats will be used to value habitats on Site.

Species

B.3.8 The Site was assessed in terms of its potential to support protected and notable species with particular attention being paid to those listed in paragraph B1.3. It takes account of habitats present on Site, the desk study species data, connectivity to known records and other suitable habitat and geographic range of species. For example, a Site may have suitable habitat for sand lizard but is outside the species geographic distribution and as such would not be considered in the evaluation of the Site. Another example would be if water vole were returned in the desk study data but there was no watercourse within the site or within a zone of influence which may be indirectly affected by pollution run-off.

C. METADATA, SURVEY CONDITIONS AND LIMITATIONS

C.1 Metadata

Factor	Detail
Data	Habitats described and mapped in accordance to JNCC (2010) Target notes of specific features
Reason for collection	To provide baseline ecological data to inform master planning, planning applications and appropriate mitigation in relation to proposed development.
Location	Hillingdon Gateway, Freezeland Way, Uxbridge, Hillingdon, London Approximate grid reference: TQ 07888 8486
Date	01/07/2019
Method of collection	Phase 1 Habitat Survey: JNCC (2010)
Who collected	Matt Harper BSc (Hons)

C.2 Survey Conditions

Date	Start Time	Preceding days	Cloud (%)	Sun	Temp. (°C)	Precipitation
01/07/2019	10:45	Clear, sunny	25	Strong	18	Dry

C.3 Limitations Review

Consideration	Comment
Survey & data	
Personal competence, i.e. qualifications, training, skills, understanding, experience	All survey works were undertaken by or directly supervised by personnel experienced in ecological surveying surveys (see meta data; Section B1). Matt Harper has four years of experience in the consultancy sector and extensive experience undertaking ecological fieldwork over four survey seasons. This includes a suitable level of experience with all surveys undertaken at the Site.
Resources (equipment and/or personnel)	Appropriate resources and suitably qualified personnel were used.
Time spent surveying	Sufficient time was spent on site to undertake all surveys. No surveys were 'cut short'.
Data (e.g. arising from incomplete or inappropriate surveys)	The data collected were sufficient for the purpose of the works.
Lack of statistical robustness and higher uncertainties	Statistical analysis of data was not deemed necessary for the purpose of the current works.
Old and out of date data	The survey data in this report does not rely on any old or out-of-date data. All data are considered valid for a 12-month period from issue of this report. This may be extended to 24 months for specific data.
Timing or seasonal constraints and suboptimal survey periods	The survey was conducted in July 2019, this is within the optimal period for identifying flowering plants and conducting Phase 1 Habitat Surveys.
Partial use of and/or departures from good practice guidelines	All surveys accorded with the relevant best practice guidelines.
Site conditions & other factors	
Adverse weather conditions	No significantly adverse weather conditions were encountered during the survey work undertaken at the Site that would be considered to have significantly adversely impacted the reliability and accuracy of data collected.
Restricted access to site or part of site	Access was not restricted.
Unrealistic deadlines	No restrictions on survey data collected or analysed to date are as a result or unrealistic deadlines.
Unproven or untested measures for mitigation and compensation	N/A
Evaluation of conservation value and impacts	The evaluation of the conservation value of habitats and species associated (or potentially associated) with the site and impacts of the development, are based on the current information available. This evaluation will need to be reviewed and updated as necessary should a considerable period of time (24 months) elapse and/or more data from other survey work (on and within 500 m of the site) becomes available.

D. DESK STUDY SCOPING EXERCISE

D.1.1 A data search on *MAGIC* was completed on 3rd July 2019. A summary of features checked is provided in Tables D.1. to D.4.

D.1.2 One Open Mosaic Habitat (OMH) was identified within 1 km of the Site depicted on Natural England's Draft OMH Inventory Database (downloaded 04/07/2019) with reference: 7961, located approximately 94 m West of the Site.

Table D.1 Woodland Trust Ancient Inventory trees within 1 km of the Site

Tree sp.	WT ref.	Location	Distance	Direction
Pedunculate Oak	97846	TQ0762684413	0.4 km	S
Pedunculate Oak	41318	TQ07458541	0.5 km	NW
Pedunculate Oak	41316	TQ07588550	0.6 km	NW
Pedunculate Oak	104551	TQ0749085514	0.6 km	NW
Pedunculate Oak	41317	TQ07338547	0.6 km	NW
Pedunculate Oak	97858	TQ0740585645	0.7 km	NW
Pedunculate Oak	97860	TQ0756185670	0.7 km	NW
Pedunculate Oak	97859	TQ0752985701	0.7 km	NW
Common hornbeam	97857	TQ0739485751	0.8 km	NW
Pedunculate Oak	41312	TQ07278419	0.8 km	SE
Pedunculate Oak	41313	TQ07278417	0.8 km	SE
Common beech	97856	TQ0737785783	0.9 km	NW
Pedunculate Oak	41314	TQ07348407	0.9 km	SE
Pedunculate Oak	41315	TQ07358405	0.9 km	SE
Pedunculate Oak	41311	TQ07238409	0.9 km	SE
Pedunculate Oak	41310	TQ07148414	0.9 km	SE

Table D.2 Statutory nature conservation sites within 5 km of the Site

Site designation	Number of sites				
	Total	On Site	0-1 km	1-2 km	2–5 km
AONB	0				
LNR	9		1	1	7
NNR	0				
National Park	0				
Ramsar	0				
SSSI	5				5
SAC	0				
SPA	0				
Impact Risk Zone	Yes - Fray's Farm Meadows SSSI and Denham Lock Wood SSSI.				

Table D.3 Priority (and notable) habitats within 1 km of the Site

Broad category	Priority Habitat Inventory	Other habitats	On Site	0-1 km
Coastal	Saltmarsh			
	Sand Dunes			
	Vegetated Shingle			
	Maritime Cliffs and Slopes			
	Mudflats			
	Saline Lagoons			

Broad category	Priority Habitat Inventory	Other habitats	On Site	0-1 km
Grassland	Calaminarian Grassland			
	Coastal and Floodplain Grazing Marsh			
		Good quality semi-improved grassland (non-priority)		5
	Lowland Calcareous Grassland			
	Lowland Dry Acid Grassland			
	Lowland Meadows			
	Purple Moor Grass and Rush Pasture			
	Upland Calcareous Grassland			
	Upland Hay Meadows			
Heath	Lowland Heathland			
	Mountain Heaths and Willow Scrub			
	Upland Heathland			
Limestone pavements	Limestone Pavements			
Marine	Intertidal Substrate Foreshore			
Wetland	Blanket Bog			
	Lowland Fens			
	Lowland Raised Bog			
	Reedbeds			
	Upland Flushes, Fens and Swamps			
Woodland		Ancient: Semi-natural		
		Ancient: Replanted		
	Deciduous Woodland			56
		National Inventory of Woodland & Trees		8
	Traditional Orchards			
	Wood pasture and Parkland BAP Priority Habitat			2
Other		Fragmented heath (Non Priority)		
		Grass Moorland (Non Priority)		
		No main habitat but additional habitat exists		2

Table D.4 European Protected Species license applications within 2 km (great crested newt) and 5 km (bats) of the Site

Protected species licence applications	Number of applications				
	Total	On Site	0-1 km	1-2 km	2-5 km
Great crested newt	3			3	N/A
Bat	5				5
Species covered by the bat licences					
Alcathoe bat					
Barbastelle					
Bechstein's bat					

Brandt's bat					
Brown long-eared bat					✓
Common pipistrelle					✓
Daubenton's bat					
Greater horseshoe bat					
Grey long-eared bat					
Leisler's bat					
Lesser horseshoe bat					
Nathusius pipistrelle					
Natterer's bat					
Noctule					
Pipistrelle sp.					
Serotine					
Soprano pipistrelle					✓
Whiskered bat					

Table D.5 Farmland bird assemblages in relation to the Site

Farmland bird assemblages	**On Site**	**0-1 km**
Arable (max number of species)	**0**	**0**
Grassland (max number of species)	**0**	**0**
Black grouse		
Cirl bunting		
Corn bunting		
Curlew		
Grey partridge		
Lapwing		
Redshank		
Snipe		✓
Stone curlew		
Tree sparrow		
Turtle dove		
Twite		
Yellow wagtail		