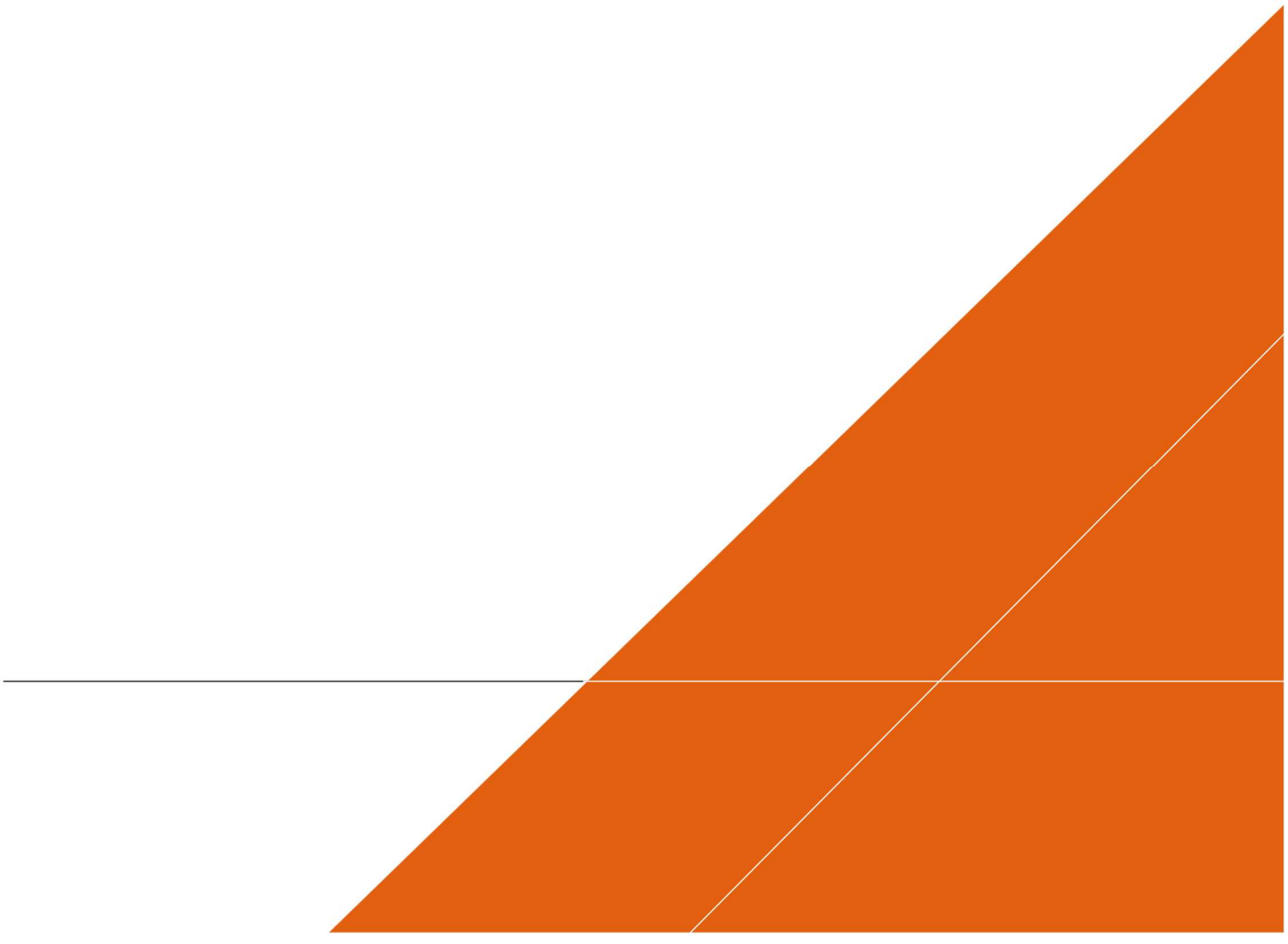
ARCADIS Design & Consultancy for natural and built assets

BE FIRST REGENERATION LIMITED

LAND OFF WHEEL FARM DRIVE, DAGENHAM, RM10 7AJ

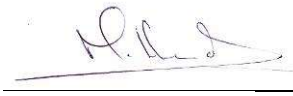
Ecological Assessment

APRIL 2021



LAND OFF WHEEL FARM DRIVE, DAGENHAM, RM10 7AJ

Ecological Assessment

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Report No	10046791-AUK-XX-XX-RP-EC-0119-01-Wheel Farm Drive Ecological Assessment	
Date	APRIL 2021	

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Version	Date	Author	Changes
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1 INTRODUCTION

1.1 Background

Arcadis (UK) Limited (Arcadis) has been commissioned by Be First Regeneration Limited on behalf of London Borough of Barking and Dagenham, 'the Client', to undertake an ecological assessment to support the feasibility for the development of the land at garage blocks located off Wheel Farm Drive, Dagenham, RM10 7AJ hereafter referred to as "the Site".

The Client is aiming to develop a number of small sites within Barking and Dagenham Borough. Arcadis understands that the proposed end use for the Site is for residential development.

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

1.2 Site Location & Setting

The Site is located south of Wheel Farm Drive in Dagenham, in the London Borough of Barking and Dagenham. The Site is centred at grid reference of TQ 50244 86146 and around the postcode of RM10 7AJ.

The Site measures approximately 0.07ha in area comprising hardstanding and brick-built garage block buildings. No vegetation was present on site.

The area surrounding the Site is residential in nature and is characterised by apartment block buildings and terraced and semi-detached housing. East Brookend Country Park Local Nature Reserve is located to the east of the Site and other areas of public open space are located within the wider landscape, but residential development is dominant.

The Site boundary for assessment is presented in Figure 1.

2 METHODOLOGY

2.1 Desk Study

Desk-based ecological information was collated from multiple sources.

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

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

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

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

In addition, the Local Plan was reviewed for citations of any non-statutory designated sites located within a 1km radius of the Site, including Local Wildlife Sites (LWS) and the locations of Sites of Importance for Nature Conservation (SINCs) were also obtained from Greenspace Information for Greater London (GiGL)[5] free source data. No citations for these sites were obtained other than where information was publicly accessible.

SINCs fall into three sub designations:

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

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

2.2 Field Survey

This survey was conducted by Mike Head (Principal Ecologist) on 30th March 2021. Habitats were classified according to their JNCC Phase 1 habitat categories (JNCC 2010)[6] and plants named after Stace (1997)[7]. Buildings were assessed externally for their potential to support bats.

The survey included an assessment of the potential for the site to support legally protected or notable species, based on field observations carried out during the walkover surveys. Based on the habitats present within the site and within the wider surroundings, the potential for the presence of the following protected species were assessed as follows:

[1] MAGIC (2002). MAGIC Map Search. [online] Available at http://magic.defra.gov.uk [Accessed April 2021]
[2] NERC Act (2006) Section 41 Species http://www.nhm.ac.uk/our-science/data/uk-species/checklists/NHMSYS0020515439/index.html
[3] National Biodiversity Network https://nbn.org.uk/ [Accessed April 2021]
[4] London BAP (Reviewed 2007) http://www.gigl.org.uk/london-bap-priority-species/ [Accessed April 2021]
[5] Greenspace Information for Greater London http://discover-london.gigl.org.uk/?theme=SITES_TO_VISIT [Accessed April 2021]
[6] Joint Nature Conservation Committee (2010), *Handbook for Phase 1 habitat survey - a technique for environmental audit*
[7] Stace, C. (1997). *New Flora of the British Isles Second Edition*. Cambridge University Press

- The presence of nesting habitat for breeding birds (such as mature trees, dense scrub, hedges and buildings, and/or field margins suitable for ground nesting birds) and evidence of bird nesting including bird song, old nests, faecal marks etc.;
- The presence of features in and on trees indicating potential for roosting bats, such as fissures, holes, loose bark and Ivy (*Hedera helix*) and those associated with buildings such as cavities, roof voids, hanging tiles, unenclosed soffits etc. Such features were categorised according to their potential for roosting bats using the Bat Conservation Trust's (BCT) good practice guidelines (Collins, 2016). Direct evidence, such as the presence of bats, staining, droppings and feeding remains, was also looked for. Buildings were assessed externally only and trees were assessed from ground level;
- Evidence of badger (*Meles meles*), including setts, runs, snuffle holes and hairs within the site.

2.3 Limitations

This report has been prepared for London Borough of Barking and Dagenham in accordance with the terms and conditions of appointment. Arcadis cannot accept any responsibility for any use of or reliance on the contents of this report by any third party.

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

No internal access to the garage buildings was possible during the survey.

3 SURVEY RESULTS

3.1 Reporting Outline

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

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

- Figure 1: Site Location (TN));
- Table 1: Ecological Constraints and Mitigation Summary Table; and
- Table 2: Site photographs (at the end of the report).

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

- Appendix A: Overview of Protected, Notable and Invasive Species in London
- Appendix B: Bat Habitat Suitability Assessment and London Bat Population Status; and
- Appendix C: Selected Legislation, Nature Conservation Status and Policy.

3.2 Desk Study Results

Only desk study results that are potentially relevant to the Site are presented within the report. The relevant Site information is summarised below.

- No Statutory designated sites identified within the vicinity of the Site have the potential to be significantly impacted by development on the Site.
- The closest statutory designation to the Site is East Brookend Country Park Local Nature Reserve (LNR), located approximately 220m to the east of the Site. This LNR supports a mosaic of grazed wetland and terrestrial habitats. This site is known to support a variety of bird species and water vole (*Arvicola amphibius*);
- The closest non-statutory designation to the Site is The Chase and Eastbrookend SMINC located 220m to the east of the Site. This SMINC includes the East Brookend Country Park LNR detailed above.;
- There were records of Tree-of-heaven (*Ailanthus altissima*) were found within 1km of the Site and is listed on the London Invasive Species Initiative (LISI)[8:] managed by the London Biodiversity Partnership;
- There were records of the several bird species within 1km of the Site including house sparrow (*Passer domesticus*), which is a London BAP and NERC Priority Species S41, along with a number of common species, including wood pigeon (*Columba palumbus*) and blackbird (*Turdus merula*);
- There were records of hedgehog (*Erinaceus europaeus*) within 500m of the Site which is a London BAP and NERC Priority Species S41;
- There were records of grey squirrel (*Sciurus carolinensis)* within 1km of the Site which although not protected for conservation value is protected from inhumane killing or injury by the Wild Mammal Act (1996)[9]; and
- There were no relevant records of reptiles, badger or bats.

3.3 Habitats

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

[8] London Invasive Species Initiative, available at: http://www.londonisi.org.uk/what-and-where/species-of-concern/ [Accessed February 2020]

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

- **Buildings and hardstanding**: The Site comprised brick-built garage block buildings, and areas of hardstanding. The hardstanding within the Site was in a relatively good condition.

No vegetation was present within the site.

3.4 Protected and Notable Species

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

- **Roosting bats**: Features potentially suitable for roosting bats were recorded within the fabric of the garage buildings, in the form of crevices between the roof and the wooden cladding above the garage door of each portion of this building. These accesses may permit bats to access areas of greater roosting potential within the garages. The potential of these features to support roosting bats was categorised as 'low' based on BCT guidance[10]. All bat species native to the UK are listed on Schedule 5 of the WCA, NERC Priority Species S41, and London BAP species.
- **Nesting Birds:** There is potential for birds to be nesting within the fabric of the garage buildings and off-Site trees and shrubs overhanging the Site, including species listed on the London BAP and NERC Priority Species S41 species such as house sparrow.

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

[10] Collins, J. (ed.) (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

4 POTENTIAL ECOLOGICAL CONSTRAINTS

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

4.1 Designated Sites

The closest statutory designation to the Site is East Brookend Country Park LNR, located approximately 220m to the east of the Site. Due to the location of this LNR in close proximity to the Site, increased recreational pressures as a result of the development of the Site were considered as a potential impact. However, due to the size of the Site and the limited number of units that the developable area could accommodate, additional recreational pressures are considered to have a negligible effect on habitats and species associated with the LNR.

Non-statutory designated sites are present within the area surrounding the Site, the closest of which is The Chase and Eastbrookend SMINC, which includes East Brookend Country Park LNR and is located approximately 220m to the east of the Site at its closest point. Given the proximity of the Site to this designation, recreational pressures on the SMINC were considered as potential impact. However, as identified above with respect to East Brookend Country Park LNR, due to the size of the Site and the limited number of units that the developable area could accommodate, additional recreational pressures are considered to have a negligible effect on the habitats and species associated with the SMINC.

With standard construction measures in place (lighting and noise controls etc.), it is considered that it is not likely that there will be a significant impact upon designated sites resulting from a development on the site.

4.2 Habitats / Invasive Species

Whilst the habitats within the Site offer only limited opportunities to protected or notable faunal species, the trees present in close proximity of the Site boundaries have value in terms of green infrastructure, likely performing important ecosystem services (such as noise attenuation, visual screening, water quality and volume attenuation and air quality attenuation etc.). Accordingly, any loss of green infrastructure as a result of the development of the Site will need to be compensated for within the final design of the Site.

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

4.3 Protected and Notable Species

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

- **Roosting bats**: Features potentially suitable for roosting bats were recorded within the fabric of the garage buildings,
- **Nesting birds**: There is some limited potential that nesting birds may utilise the garage buildings and off-Site trees and, as such, clearance of vegetation and demolition of buildings should be avoided during the nesting bird season (March to August inclusive) or be undertaken following a pre-clearance nest check by an ecological watching brief. Replacement nesting opportunities should be provided within any development.

5 LEGISLATION AND KEY POLICY REQUIREMENTS

Potentially relevant Legislation and Policy are presented in Appendix C.

5.1 Relevant Legislation

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

- for Bats – surveys or assessments to confirm the absence of roosting bats from within the structures should they require demolition will be required.
- for nesting birds: works will need to be timed to avoid the nesting bird season (March to August inclusive) or supervised to prevent impacts to nesting birds.

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

5.2 Relevant Policy

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

- Safeguarding and replacement of trees to be lost to the development;
- Creation and enhancement of biodiversity where possible;
- Removal of LISI species would be advantageous; and
- Material consideration of NERC Priority Species S41 in design and planning such as, house sparrow.

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

5.3 Biodiversity Net Gain

In line with the 25 Year Plan for the Environment[11] and the National Planning Policy Framework[12], new development should identify and pursue opportunities for securing measurable net gains for biodiversity and for the wider environment. The Environment Bill 2020 [13] which was first introduced on 15 October 2019, it was re-introduced to parliament following a general election on 30 January 2020. The Environment Bill will help deliver the government's manifesto commitment to delivering the most ambitious environmental programme of any country. The Environment Bill introduces a mandatory requirement for biodiversity net gain for new development to ensure that new developments enhance biodiversity and create new green spaces for local communities to enjoy. Integrating biodiversity net gain into the planning system will provide a step change in how planning and development is delivered. This is likely to be set at 10%. There is also a strong focus on delivering environmental net gain. This would preferably be achieved onsite, however there are options to deliver these gains offsite and this would be demonstrated via the Biodiversity Metric 2.0 which was issued on 29 July 2019.[14].

As part of the London Plan – Intend to Publish 2019[15]. Policy G5 Urban Greening, sets new developments should incorporate measures to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (including trees), green roofs, green walls and nature-based sustainable drainage. The Mayor has developed a generic Urban Greening Factor model to assist boroughs and developers in determining the appropriate provision of urban greening for new developments. Urban greening covers a wide range of options including, but not limited to, street trees, green roofs, green walls, and rain gardens. It can provide a range of benefits including amenity space, enhanced biodiversity, addressing

[11] HM Government (2018) 'A Green Future: Our 25 Year Plan to Improve the Environment', HM Government, London.
[12] MHCLG (2019) National Planning Policy Framework
[13] https://www.gov.uk/government/publications/environment-bill-2020
[14] Defra Biodiversity Metric 2.0 — (2019) http://publications.naturalengland.org.uk/publication/5850908674228224
[15] Greater London Authority (2019) London Plan – Intend to Publish. Available at: https://www.london.gov.uk/sites/default/files/intend_to_publish_-_clean.pdf

the urban heat island effect, sustainable drainage and amenity – the latter being especially important in the most densely developed parts of the city where traditional green space is limited.

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

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

6 SUMMARY OF ECOLOGICAL CONSTRAINTS AND MITIGATION REQUIRED

Table 1 Ecological Constraints and Mitigation Summary Table

Key Issues	Legislation/Policy	Assumption	Further Survey / input?	Seasonal Timing	Mitigation Required	Seasonal Timing	Programme Delay Risk	Potential further deliverables for Survey/ Mitigation
Biodiversity General								
Ecology Report in Support of Planning	WCA, 1981, as amended London BAP and NERC Priority Species S41 NPPF 2019	To inform and mitigate any potential design	See below	See below	See below	See below	Early commissioning of Ecologist recommended to input into design	Report for planning
Green Infrastructure								
Green Infrastructure and Biodiversity Net Gain	National and local policy around no net loss and net gain. NPPF 2019 London Plan Intend to Publish 2019 Environmental Bill 2020	NPPF required environmental and biodiversity net gain and the draft Environment Bill with require new developments to demonstrate 10% BNG for new developments	Design input and Biodiversity Metric 2.0 desktop calculations	N/A	N/A	N/A	None	Design input and net gain calculation
Bats								
Buildings on the site have the potential to support roosting bats	The Conservation of Habitats and Species (Amendment) (EU exit) Regulations	The buildings on site will need to be removed to facilitate the development	Full internal inspection of all garages and / or a single emergence / re-entry survey for bats on the structures to be removed.	May – September inclusive	If bats are present, suitable alternative provision of roosts will be required and all demolition works will need to take place under the prescriptions of a Natural England licence.	TBC dependent upon roost type (if present)	Delays until active season to conduct surveys and	TBC dependent upon results of the survey
Nesting Birds								
The garage buildings on Site and green infrastructure present immediately adjacent to the Site, such	WCA, 1981, as amended	May require removal / management for development / Site investigation.	No (but see mitigation recommendations)	N/A	Demolition and removal of vegetation outside the core nesting bird season (March to August inclusive) or vegetation	September to February	If demolition or vegetation removal is required during the nesting bird season and nest are found by the ecological watching brief, a delay of 6 weeks is likely to be required until chicks have fledged.	Ecological supervision / nesting bird check.

Key Issues	Legislation/Policy	Assumption	Further Survey / input?	Seasonal Timing	Mitigation Required	Seasonal Timing	Programme Delay Risk	Potential further deliverables for Survey/ Mitigation
as the trees, are suitable for nesting birds. These are likely to be removed for development.					removal will need to be supervised by an ecological watching brief			
Trees								
Trees were present at the boundaries of the Site and may be impacted by development.	N/A	The trees will need to be protected from damage resulting from any development.	Yes: BS 3857 2012 Tree survey (this has been conducted, document reference 10046791-AUK-XX-XX-RP-AB-0105-01-Wheel Farm Drive Arboricultural Report.	Removal of trees affected by bird nesting season (see above)	An Arboricultural Impact Assessment will be required for any design to ensure that there is protection of trees to be retained and adjacent trees and replacement of trees and green infrastructure implemented via an Arboricultural Method Statement and Landscape Strategy.	N/A	None	Arboricultural Impact Assessment Bespoke Arboricultural Method Statement Site supervision

7 CONCLUSIONS

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

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

The closest statutory designation to the Site is East Brookend Country Park LNR, located approximately 220m to the east of the Site. Non-statutory designated sites are present within the area surrounding the Site, the closest of which is the Chase and Eastbrookend SMINC, which includes East Brookend Country Park LNR and is located approximately 220m to the east of the Site. Given the proximity of the Site to these designations, recreational pressures on the LNR and SMINC were considered as a potential impact. However, due to the size of the Site and the limited number of units that the developable area could accommodate, additional recreational pressures are considered to have a negligible effect on habitats and species associated with these designated sites.

Potential constraints are listed below:

- Buildings within the Site supported features potentially suitable for roosting bats. The garage structures were assessed as having a low potential to support roosting bats.
- There is potential for nesting birds to be utilising the garages and trees adjacent to and overhanging the site. Removal of suitable vegetation and buildings on the Site will need to be conducted outside of the bird nesting season (March – August inclusive) or under an ecological watching brief.
- Trees and other vegetation should be included within any proposed soft landscaping and these designs should be evolved in liaison with an ecologist and arboriculturist. In addition, rain gardens, biodiversity roofs and other green infrastructure should be considered within any development.
- There are opportunities for the incorporation of integral bird and bat boxes, micro SuDS, the implementation of permeable fencing to benefit small mammals such as hedgehog which is a priority species currently in decline, sensitive lighting strategy, tree replacement and new tree planting where feasible.

SITE PHOTOGRAPHS

Table 2: Site Photographs

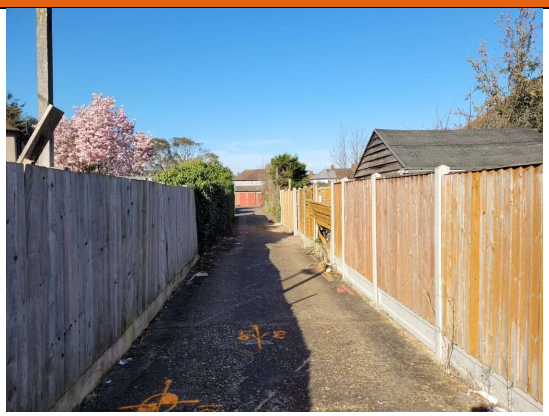
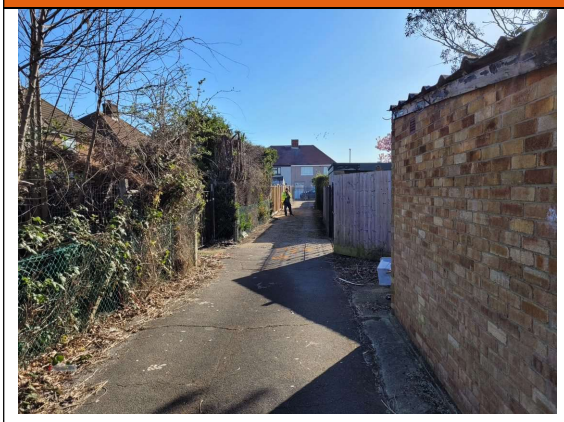
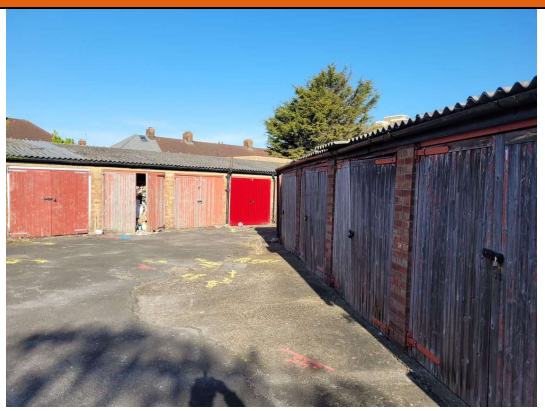
Site Photographs	
	
Photograph 1: Overview of the Site.	Photograph 2: Accessway to garages looking west.
	
Photograph 3: Accessway to garages looking east.	Photograph 4: Additional view of the on-site garages.

FIGURE 1: SITE LOCATION



Appendix A: Overview of Protected, Notable and Invasive Species in London

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

Non-native invasive species in Greater London

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

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

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

Bats in Greater London

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

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

Birds in Greater London

There are a number of bird species that although relatively common are in decline and have been highlighted S41 or London Priority BAP species and/or birds of conservation concern that have the potential to be present (Table A4).

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

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

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

Reptiles in Greater London

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

Badger in Greater London

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

Amphibians including Great Crested Newts (GCN) in Greater London

GCN are S41 and London BAP species, that while uncommon are found breeding in ponds associated with private gardens, from data available from Froglife (2012), 71 Sites across Greater London were surveyed where historical GCN records were identified, of none of these sites were located within the London Borough of Barnet [16]. Of the other amphibians that are London BAP species Common frog (*Rana temporaria*), palmate newt (*Triturus helveticus*) and Common toad (*Bufo bufo*), common toad is also a S41 species

Other Potentially Relevant S41 and London BAP species

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

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

Table A:5: Designated sites descriptions

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

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

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

Appendix B: Bat Habitat Suitability and London Population Status

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

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

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

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

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

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

Appendix C: Selected Legislation, Nature Conservation Status and Policy

Selected Legislation

Table C: 1 Legislation Summary

Receptor	Legislation
Nesting Birds	The legislation relevant to the potential ecological constraints on site associated with nesting birds. All wild birds, their nests and eggs are protected under the Wildlife and Countryside Act 1981 (as amended). Section 1 of the Act makes it an offence to: • intentionally kill, injure or take any wild bird; • intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; or • intentionally take or destroy an egg of any wild bird. It is also an offence to: • intentionally disturb any wild bird included in Schedule 1 of the Act while it is building a nest or is in, on or near a nest containing eggs or young; or • disturb dependent young of such a bird. • Species listed on Schedule 1 include the black redstart, barn owl (*Tyto alba*), Cetti's warbler (*Cettia cetti*) and kingfisher (*Alcedo atthis*). There is no potential for Schedule 1 birds to be nesting on Site, the legislation regarding common nesting birds will be complied with due to the precautionary mitigation previously stated.
Badgers	Badgers are protected from inhumane killing or injury under Badgers Act (1992)[17], this also protects their setts from damage and prohibits blocking access to their setts.
Bats	The legislation relevant to the constraint identified associated with bats. Bats are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species (Amendment) (EU exit) Regulations 2019. Bats are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are subject to the provisions of Section 9 of the Act, which make it an offence to: • intentionally or recklessly disturb a wild animal listed on Schedule 5 whilst it is occupying a structure or place which it uses for shelter or protection; • intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a wild animal listed on Schedule 5; • sell, offer or expose for sale, or to possess or transport for sale alive or dead wild animal listed on Schedule 5 or any part of or anything derived from a wild animal listed on Schedule 5. Bats are also listed on Schedule 2 (European protected species of animals) of the Conservation of Habitats and Species (Amendment) (EU exit) Regulations 2019 and are subject to the provisions of Regulation 41 which makes it an offence to: • deliberately capture, injure or kill any wild animal of a European protected species; • deliberately disturb wild animals of any such species (where disturbance is likely to impair their ability to survive, breed or reproduce, rear or nurture their young; or to

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

Receptor	Legislation
	hibernate or migrate; or to affect significantly the local distribution or abundance of the species); • damage or destroy a breeding Site or resting place of such an animal; or • be in possession of, control, transport, sell or exchange, or offer for sale or exchange any live or dead animal of such a species or any part of a wild animal or anything derived from an animal or any part of an animal of such a species.
Great Crested Newts	Great crested newts are a European Protected Species (EPS), listed on Annex II and IV of the EEC Directive on the Conservation of Natural Habitats and Wild Fauna and Flora, receiving protection under The Conservation of Habitats and Species (Amendment) (EU exit) Regulations 2019. This species is also afforded full protection under the Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) (WCA 1981). Under such legislation it is an offence to: • Intentionally or recklessly kill, injure or take a great crested newt; • Possess or control any live or dead specimen or anything derived from a great crested newt; • Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection by a great crested newt; and • Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place which it uses for that purpose.
Reptiles	The relevant legislation relevant to the constraint identified associated with reptiles All native British reptile species are protected under the Wildlife and Countryside Act 1981 (as amended). Reptiles are listed under Schedule 5 of the Act. The four more widespread species including common lizard, slow worm, adder and grass snake are subject to some of the provisions of Section 9 of the Act, which make it an offence to: * • intentionally kill or injure a reptile; or * sell, offer or expose for sale, or • to possess or transport for sale alive or dead reptile or any part of, or anything derived from, a reptile.
Other Mammals	Other mammals not protected by their own legislation are protected by the Mammal Act (1996). The Act makes provision for the protection of wild mammals from certain cruel acts. An offence is committed if any person mutilates, kicks, beats, nails, or otherwise impales, stabs, burns, stones, crushes, drowns, drags, or asphyxiates any wild mammal with intent to inflict unnecessary suffering.
Non Native Invasive Species	Numerous species are listed on Schedule 9 (of the Wildlife and Countryside Act 1981, as amended) whereby it is an offence to grow or to cause this species to grow in the wild. A species on Schedule 9 that commonly occurs in London is Japanese Knotweed (*Fallopia japonica*) which is also covered by the Environmental Protection Act (EPA) 1990 which designates this as a controlled waste.

Nature Conservation Status

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

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

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

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

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

Relevant Policy

National

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

- **The National Planning Policy Framework** (NPPF 2019)[18]: The NPPF, sets out how the planning system should protect and enhance nature conservation interests. Section 15 is concerned with conserving and enhancing the natural environment (paragraphs 170 to 177).
  - Planning policies and decisions should contribute to and enhance the natural and local environment by:
  - protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
  - recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
  - minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

  To protect and enhance biodiversity and geodiversity, plans should
  - Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity56; wildlife corridors and steppingstones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
  - promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity and take opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.
  - When determining planning applications, local planning authorities should apply the following principles:
  - development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.
- **The Natural Environment and Rural Communities** (NERC) Act 2006[19] places a duty upon public bodies to consider S41 lists flora, fauna and habitats (previously UK BAP habitats and species) as a material consideration in planning and to consider enhancement of biodiversity.
- **Biodiversity 2020**: A strategy for England's Wildlife and Ecosystem Services[20] includes a list of Habitats of Principal Importance in England (HPIEs) and Species of Principal Importance in England (SPIEs). These were previously included as Priority Habitats and Priority Species in the UK BAP.
- **25 Year Plan for the Environment (2018):** The underlying case for the valuation of ecosystem services is that it will contribute towards better decision-making, fully taking into account the costs and benefits of development to the natural environment. In its White Paper "The Natural Choice: securing the value of nature (HMG, 2011)[21]", and repeated in successive manifestos, the UK Government has stated it wishes to be "the first generation to leave the natural environment of England in a better state than it inherited…". The Natural Capital Committee (NCC, 2016) was set up to advise on how to deliver this objective, and the natural capital approach (which is based on the concept of valuing services delivered by the environment) is the key mechanism proposed to achieve this. The advice of the NCC has been central to the Government's 25-Year Plan to Improve

[18] MHCLG (2019) National Planning Policy Framework .
[19] Anon (2006) The Natural Environment and Rural Communities Act HMSO, London
[20] Department for Environment, Food and Rural Affairs (2011) *Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services*
[21] HM Government. (2011). The Natural Choice: securing the value of nature. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/228842/8082.pdf

the Environment, published in January 2018 [22], whereby it has been acknowledged that protecting and growing natural capital is a vital component for economic success. It is also important to note that the application of this approach is not related to the total value of ecosystems but, rather, to valuing changes in ecosystem services.

London

- **London Invasive Species Initiative (LISI)[23]**: Managed by the London Biodiversity Partnership, LISI lists non-native invasive species that should be controlled in London. Species relevant to the Scheme include Japanese Knotweed and Butterfly-bush.
- **London Biodiversity Action Plan (BAP)[24]:** Managed by the London Biodiversity Partnership (2006), the London BAP sets out priority habitats and species for the city. London BAP habitats relevant to the Scheme include reed beds, standing water and wasteland.
- **The London Plan – Intend to publish (2019)** [25]. The London Plan – Intend to Publish advocates a green infrastructure approach to conservation of the natural environment recognising its social and economic value. It also moves to recognise the practical actual financial value. There is also now the drive for development to incorporate quality green space (i.e. enhancements). The intend to publish version now includes an Urban Greening Factor for demonstration of these enhancements (Policy G5). The most relevant chapter in the Plan is Chapter 8 Green Infrastructure and Natural Environment (previously Chapter 7 in the adopted London Plan), with other relevant sections in the rest of the Plan, including Chapter 9 Sustainable Infrastructure. Relevant policies include G2 Greenbelt, G3 Metropolitan Open Land, G4 Open space, G5 Urban greening, G6 Biodiversity and access to nature, G7 Trees and woodlands, G8 Food growing and G9 Geodiversity.
- **The London Plan (2016), Housing Supplementary Planning Guidance (March 2016)[26]:** With regards to housing, recently a dedicated supplementary planning guidance has been produced, the relevant elements of which are presented below
    - Standard 40 and Policy 7.19 “Biodiversity and access to nature promotes a proactive approach to the protection, promotion and management of biodiversity across the capital” and that “Proposals for development should give full consideration to their direct and indirect effects on ecology. Ecological improvements can be achieved as part of Sustainable Urban Drainage Systems and incorporated into green or brown roofs, green walls and soft landscaping.”
    - Policies 7.19 and 7.21 “supporting biodiversity, protecting London’s trees, ‘green corridors and networks”.
    - Development proposals should also enhance provision of green infrastructure in the public realm, helping to mitigate and adapt to climate change (Policy 5.10 Urban Greening), extend tree cover (Policy 7.21), improve biodiversity (Policy 7.19).
    - Public, communal and private open spaces should be protected and enhanced, and where possible new open spaces should be created. This is supported by Policy 2.18 Green Infrastructure, Policy 7.18 Protecting open space, Policy 7.19 Biodiversity and Policy 7.21 Trees and Woodlands.
- **The Mayor’s Biodiversity Strategy (2002)[27]:** Connecting with London’s Nature: The Mayor’s Biodiversity Strategy provides a statutory framework for the delivery of biodiversity policies in London. It seeks to ensure that there is no overall loss of wildlife habitats in London.
- **The London Plan (2011), Sustainable Design and Construction Supplementary Planning Guidance (April 2014)[28]:**

[22] HM Government (2018) A Green Future: Our 25 Year Plan to Improve the Environment. January 2018 Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/673203/25-year-environment-plan.pdf
[23] London Invasive Species Plan (2012). Legislative and Information Exchange Framework. [online] Available at http://www.londonisi.org.uk/tackling-inns/lisp/. [Available June 2016]
[24] City of London (2009). *London Biodiversity Action Plan 2010 – 2015*
[25] Greater London Authority (2019) London Plan - Intend to Publish. Available at: https://www.london.gov.uk/sites/default/files/intend_to_publish_-_clean.pdf
[26] Greater London Authority (2016) London Plan 2016 Implementation Housing Supplementary Planning Guidance adopted in March 2016
[27] Greater London Authority (2002), *Connecting with Nature: The Mayor’s Biodiversity Strategy adopted in 2002*
[28] Greater London Authority (2011), The London Plan *Sustainable Design and Construction Supplementary Planning Guidance adopted in April 2014*

- Mayor's Priority - Developments should contribute to the Mayor's target to increase tree cover across London by 5% by 2025.
- Mayor's Priority - There is no net loss in the quality and quantity of biodiversity.
- Mayor's Priority - Developers make a contribution to biodiversity on their development site.
- Mayor's Priority - Any loss of a tree/s resulting from development should be replaced with an appropriate tree or group of trees for the location, with the aim of providing the same canopy cover as that provided by the original tree/s.

- **London Environment Strategy – Draft for public consultation (2017) (Ref. 19)** the environment strategy highlights the importance of green infrastructure and Natural Capital designed and managed to:
  - Promote healthier living;
  - Lessen the impacts of climate change;
  - Improve air quality and water quality;
  - Encourage walking and cycling;
  - Store carbon; and
  - Improve biodiversity and ecological resilience.

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