The Ecology Consultancy

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159-161 Iverson Road, West Hampstead, London

Preliminary Ecological Appraisal and Preliminary Bat Roost Assessment

Report for McGregor Homes

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Executive Summary

The Ecology Consultancy was commissioned by McGregor Homes to carry out a Preliminary Ecological Appraisal and a Preliminary Bat Roost Assessment at 159-161 Iverson Road, West Hampstead, in the London Borough of Camden on 17th October 2013. This appraisal was carried out in order to assess the ecological value of the site and to provide recommendations for protecting, managing and enhancing it for wildlife value. The main findings of the appraisal are as follows:

- The site is not situated within any statutory or non-statutory designated nature conservation sites. One statutory designated site (Westbere Copse statutory Local Nature Reserve (LNR)) for nature conservation is located 990 metres north-west of the site. Ten non-statutory sites for nature conservation lie within 1km of the site, the nearest being West Hampstead Railsides, Medley Orchard and Westbere Copse Site of Borough Grade I Importance for Nature Conservation, which is located immediately north of the site.
- Based on the results of the Preliminary Ecological Appraisal, the habitats present were dominated by hard-standing and three buildings (Iverson Tyres garage building (B3) and two portable cabins (B1 and B2)). There were three scattered broad-leaved trees, a small parcel of tall ruderal vegetation and ephemeral short perennial vegetation growing up through the cracks in the concrete. The habitats on site were of low ecological value and were assessed as being of value within the immediate vicinity of the site only.
- All of the buildings are proposed for demolition and the site will be cleared as part of the redevelopment of the site.
- The trees and tall ruderal vegetation on site had **low potential** to support nesting birds. As such, where the scope of works requires the removal of vegetation, clearance must either be carried out outside of the main bird nesting season (March to August, inclusive) or under ecological watching brief (see Section 5) in order to avoid any potential offence relating to nesting birds.
- The three buildings and trees were assessed as having **negligible potential** to support roosting bats due to the lack of or limited features present suitable to support roosting bats. However, in the unlikely event that bats are found to be present during works, works must cease immediately and ecological advice sought immediately.
- Due to limited extent of suitable habitat present and lack of connectivity to larger areas of suitable habitat, the site was considered to have **negligible potential** to support other protected or notable species.

- Two small Japanese knotweed *Fallopia japonica* plants were growing in the south of the site adjacent to the entrance. Whilst it is not an offence to have Japanese knotweed growing on land it is listed on Schedule 9, Part II of the Wildlife and Countryside Act 1981 (as amended) making it an offence under Section 14 (2) (a) of the Act to "plant or otherwise cause Japanese knotweed to grow in the wild". Details on Japanese knotweed and its eradication as well as information of trained specialists can be found at the Property Care Association website http://www.property-care.org/Homeowners.Invasive_Weed_Control.asp.
- The redevelopment of the site will be contained within the site only and should not have an impact upon the adjacent Site of Importance for Nature Conservation (SINC). Furthermore, there are a number of opportunities to enhance the biodiversity value of the site following development. Living roofs and walls are proposed on the new build, communal amenity area between the proposed blocks and the planting of trees is proposed in the north-east corner of the site and along the eastern boundary. Therefore, providing these proposals are incorporated into the development, there will be an increase in habitats and potentially biodiversity on the site post development.
- Additional recommendations for biodiversity enhancement are provided in Section 5 of this report and include: vegetation planting schemes of value to wildlife, provision of bird nesting and bat roosting opportunities, provision of insect/bee walls on the living roof and external lighting design to encourage wildlife and prevent light spill into the adjacent SINC.

1 Introduction

BACKGROUND

1.1 The Ecology Consultancy was commissioned by McGregor Homes in October 2013 to carry out a Preliminary Ecological Appraisal and Prelimminary Bat Roost Assessment of 159 – 161 Iverson Road, West Hampstead in the London Borough of Camden. The appraisal was undertaken to provide baseline ecological information, to fully assess the potential of the three buildings and trees to support roosting bats and to highlight any ecological constraints associated with the proposed development.

SCOPE OF THE REPORT

1.2 The Preliminary Ecological Appraisal is based on a desk top study, and an extended field survey using standard Phase 1 habitat survey methodology (JNCC, 2010). This approach is designed to identify broad habitat types at a site, to identify the potential of habitats to support protected species, and to assist in providing an overview of the ecological interest at a site. It is the most widely used and professionally recognised method for initial ecological site appraisal.

1.3 In addition, this report details the methodology, results and conclusions of the Preliminary Bat Roost Assessment. The Preliminary Bat Roost Assessment comprised an external inspection of all buildings (that included the Iverson Tyres Garage and two portable cabins) and an internal inspection of the Iverson Tyres Garage. A Ground-Level Tree Inspection of three trees was also undertaken.

1.4 The surveys and subsequent reporting were undertaken to support and inform a planning application.

1.5 A Habitat Map that included the Preliminary Bat Roost Assessment of the site are included in Appendix 1, together with photographs in Appendix 2. A full list of plant species identifiable at the site during this survey, along with an assessment of their abundance is provided in Appendix 3. The legal protection afforded to bats and other protected species is outlined in Appendix 4.

1.6 Any potentially significant ecological constraints that may affect the proposals are discussed. Recommended precautionary measures that should be followed prior to, and during, demolition and construction works are described. Recommendations for

mitigation and enhancements that could be incorporated in the development are also discussed.

SITE CONTEXT AND STATUS

1.7 The site is located at 159 – 161 Iverson Road, West Hampstead in The London Borough of Camden. Immediately north of the site was a railway line. Residential housing and industrial units surround the site to the south and west. To the east was a development site (163 Iverson Road), where a residential scheme is proposed. A railway line was located approximately 100 metres (m) to the south of the site.

1.8 The site is situated in an urban area of London and is predominantly surrounded by housing. Little habitat surrounds the site, except scattered broad-leaved trees, gardens and small parks. The site was approximately 0.091 hectares (ha) in size, and the National Grid Reference for the centre of the site is TQ 2940 8358. The survey area included the existing Iverson Tyres Garage, two portable cabins, hard standing and a small area of tall ruderal.

1.9 There are 10 sites designated as Sites of Importance for Nature Conservation (SINC) within 1km of the site, the nearest being West Hampstead Railsides, Medley Orchard and Westbere Copse Site of Borough Grade I Importance for Nature Conservation, located immediately north of the site. These SINCs comprise habitats that would potentially be suitable for protected species such as foraging habitats for bats. Typically, linear habitats, such as tree lines, hedgerows and watercourses are used by bats to navigate across large areas (called commuting routes) and can also be used as foraging habitats.

DEVELOPMENT PROPOSALS

1.10 Proposals include the demolition of the existing Iverson Tyres Garage building and the removal of the portable cabins. The site will be cleared and two new five to six-storey block of flats with a light industrial workshop at ground level is proposed. New planting that includes trees is proposed in the north-east and along the eastern boundary of the site and a communal amenity area is proposed between the blocks. Living roofs (proposed to cover 435m^2) and living walls (proposed to cover 165m^2) are also proposed.

2 Methodology

DESK TOP STUDY

2.1 Desk study information was taken from The Ecology Consultancy's Report (2011) for 163 Iverson Road (the site immediately adjacent to 159-161 Iverson Road). Information regarding the present and historical ecological interest at the site and within a 1km radius was requested from Greenspace Information for Greater London (GIGL) in 2011. In addition a search was completed of an on-line mapping service for information on statutory designated sites within 1 kilometre (km) of the site. This included a search of the Multi Agency Geographic Information for the Countryside (http://magic.defra.gov.uk/) for statutory designated sites.

2.2 In addition, consideration was given to the potential presence of Habitats and Species of Principal Importance for the Conservation of Biodiversity[1] under the Natural Environment and Rural Communities (NERC) Act 2006 and the local London Biodiversity Action Plans were reviewed for those species and habitats that may, or are potentially, present on the site.

2.3 All ecological records within 1km radius from the central grid reference for the site was sourced from GiGL, which included:

- Statutory sites of nature conservation importance;
- Non-statutory sites of nature conservation importance;
- Protected, rare and other notable species; and
- Habitats and Species of Principal Importance for the Conservation of Biodiversity under the NERC Act 2006 which may be relevant to the site (hereby referred to as 'Species of Principal Importance' and 'Habitats of Principal Importance').

[1] 56 Habitats of Principal Importance and 943 Species of Principal Importance are included in the NERC Act. These are all the habitats and species in England that were identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and continue to be regarded as conservation priorities in the subsequent UK Post-2010 Biodiversity Framework.

2.4 These sources provide recent (past 20 years) records of designated sites, protected species and Habitats and Species of Principal Importance within 1km of the site and ponds within 500m.

HABITAT SURVEY

2.5 A Preliminary Ecological Appraisal of the site was carried out on the 17th October 2013. Habitats were described and mapped following standard Phase 1 survey methodology (JNCC, 2010). The survey was conducted by an experienced ecologist. A habitat map of the site is provided in Appendix 1, Figure 1 and photographs are presented in Appendix 2. A full list of plant species identifiable at the site during the survey, along with an assessment of their abundance[2], appears in Appendix 3.

2.6 Scientific names are given after the first mention of a species, thereafter, common names only are used. Nomenclature follows Stace (2010) for vascular plant species.

PRELIMINARY BAT ROOST ASSESSMENT

2.7 A full external inspection for bats was undertaken of the Iverson Tyres Garage building and the two portable cabins. An internal inspection of the Iverson Tyres Garage building was also conducted on 17th October 2013. An internal inspection was not undertaken of the portable cabins as they were flat roofed and, therefore, did not have a roof void.

2.8 The survey methodologies for the inspection followed guidelines set out in the Bat Conservation Trust's (BCT) *Bat Surveys: Good Practice Guidelines, 2nd Edition* (Hundt, 2012), and the Joint Nature Conservancy Committee's (JNCC) *Bat Workers' Manual* (Mitchell-Jones and McLeish, 2004). The survey was conducted by a licenced bat ecologist with full membership to the Chartered Institute of Ecology and Environmental Management (CIEEM).

2.9 The inspection was facilitated by the use of a high powered torch and binoculars.

[2] Abundance was assessed using the DAFOR scale as follows: D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare

External Building Inspection

2.10 Features suitable for use by roosting bats were recorded and mapped, with detailed notes taken. Architectural features, points of disrepair or other gaps, which may provide access / egress and / or roosting points for bats were also identified. Careful consideration and investigation, where possible, was given to determining if the potential access points would lead into the building structure (cavity walls, soffit boxes, roof voids, etc.) or be limited to crevices.

2.11 Consideration was also given to the bat species that would have a preference for any features identified.

2.12 Evidence indicating the presence of bats (for example, droppings, feeding remains such as moth wings, scratch marks around suitable crevices, and urine and fur oil stains) was recorded and mapped.

2.13 The association of the building with habitats that may encourage bats into and/or through the site (such as linear features including tree lines and hedgerows that bats may use as commuting corridors), were also noted, as these enhance the likelihood of roosts being found and utilised by roosting bats.

Internal Building Inspection

2.14 The internal inspection of the Iverson Tyres Garage building involved accessing all available internal areas and conducting a careful and methodical examination for bats or any evidence of bats.

2.15 A high powered torch was used to examine places that would otherwise be inaccessible to the surveyor. The inspection particularly targeted areas where evidence of bats are likely to have accumulated such as flooring, insulation, stored items, between beams, rafters and struts and any roof lining material present.

2.16 Any bats, or evidence of bats found were recorded with notes taken detailing their occurrence and distribution. Examples of evidence are concentrations of droppings in an area indicating a roosting location, or scattered droppings throughout the internal area indicating bats flying around within the space.

Ground-Level Tree Inspection

2.17 The survey methodologies for the inspection followed guidelines set out in The Bat Conservation Trust - *Bat Survey Good Practice Guidelines 2nd Edition* (Hundt, 2012), *The Bat Worker's Manual* (Mitchell-Jones and McLeish, 2004), *Trees and Bats: Guidance Note 1* (Cowan, 2003).

2.18 The purpose of the tree inspection was to:

- Identify any suitable arboreal features which could provide access / egress points for bats including; loose, flaking or folding bark, cracks and fissures in limbs, holes bored by woodpeckers or any downward facing crevice or hole in the limbs or trunk;
- Identify signs indicating possible use by bats; tiny scratches and staining around entry point, bat droppings in, around or below entrance, audible squeaking, flies around entry point, distinctive smell of bats, smoothing of surfaces around cavity;
- Establish whether any identified feature present within the trees at the site are being, has been, or is likely to be used as bat roosts;
- To assess the importance of the site as a roosting location; and
- Determine potential impacts on bats as they roost.

ASSESSMENT CRITERIA FOR BAT ROOSTING POTENTIAL

2.19 The potential for the buildings to support roosting bats was identified by the findings of the current survey and an evaluation of existing data. The following criteria was used to determine the level of assessed potential:

- Negligible – While presence cannot be absolutely discounted, no features that could be used by bats for roosting, foraging or commuting are identified. No further surveys are required.
- Low – Small number of potential roosting features, most likely less significant ones (i.e. not maternity roosts or hibernacula). Isolated habitat that could be used by foraging bats (e.g. a lone tree or patch of scrub, but not parkland) present. Isolated site, which is not connected by prominent linear features (but if suitable foraging habitat is adjacent it may be valuable if it is all that is available). One further survey (dusk emergence and or dawn re-entry surveys) for each feature (not each building / tree) is recommended.

- Moderate – Several potential roost features in the buildings, trees or other structures. Surrounding habitat is suitable to support foraging bats (e.g. trees, hedgerows, shrub, grassland or water-bodies). The site is connected with the wider landscape by linear features that could be used by commuting bats (e.g. lines of trees, hedgerows and scrub or linked back gardens). Two to three further surveys (dusk emergence and dawn re-entry surveys) for each feature (not each building / tree) are recommended.
- High – Buildings, trees or other structures (such as mines, caves, tunnels, ice houses and cellars) with particular features of potential significance for roosting bats. Surrounding habitat of high quality and suitable to support (various species of) foraging bats (e.g. broad-leaved woodland, tree-lined watercourses and grazed parkland). The site is connected with the wider landscape by strong linear features that would be used by commuting bats (e.g. river/stream valleys or hedgerows). The site is close to known roosts or other potentially valuable habitat resources. Three further surveys (dusk emergence and dawn re-entry surveys) for each feature (not each building / tree) are recommended.
- Presence confirmed – Evidence indicates a building, tree or other structure is used by bats, for example:
    - bats seen roosting or observed flying from a roost or freely in the habitat;
    - droppings, carcasses, feeding remains, etc. found; and
    - bats heard 'chattering' inside on a warm day or at dusk.

    Where possible, the number of bats likely to be using the roost site, and the species of bat(s) would be determined from the evidence available.

PROTECTED SPECIES ASSESSMENT

2.20 The potential of the habitats on the site to support protected species was assessed from field observations carried out at the same time as the habitat survey, combined with the results of the desk top study. The site was inspected for the presence or likely presence of the following protected species:

- Inspection for the presence of features in, and on trees, indicating potential for roosting bats *Chiroptera* 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. Direct evidence such as the presence of bats, staining, droppings and feeding remains was also looked for; and

- Assessment of the presence of nesting habitat for breeding birds, such as mature trees, dense scrub, hedgerows and buildings and evidence of bird nesting including old nests, large deposits of faeces etc.

2.21 The likelihood of occurrence is ranked as follows and relies on the findings of the current survey and an evaluation of existing data.

- Negligible – while presence cannot be absolutely discounted, the site includes very limited or poor quality habitat for a particular species or species group. No local returns from a data search, surrounding habitat considered unlikely to support wider populations of a species/species group. The site may also be outside or peripheral to known national range for a species,
- Low – on-site habitat of poor to moderate quality for a given species/species group. Few or no returns from data search, but presence cannot be discounted on the basis of national distribution, nature of surrounding habitats, habitat fragmentation, recent on-site disturbance etc.
- Medium – on-site habitat of moderate quality, providing all of the known key requirements of a given species/species group. Local returns from the data search, within national distribution, suitable surrounding habitat. Factors limiting the likelihood of occurrence may include small habitat area, habitat severance, and disturbance.
- High – on-site habitat of high quality for a given species/species group. Local records provided by desk-top study. The site is within/peripheral to a national or regional stronghold. Good quality surrounding habitat and good connectivity.
- Present – presence confirmed from the current survey or by recent, confirmed records.

2.22 The purpose of this assessment is to identify whether more comprehensive Phase 2 surveys for protected species should be recommended.

SITE EVALUATION

2.23 The site has been evaluated broadly following guidance issued by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2006), according to a geographic scale (significance at the international level down to the site level) and using a range of criteria for assigning ecological value, as follows:

- Presence of sites or features designated for their nature conservation interest. Examples include internationally or nationally designated sites such as Special

Areas of Conservation (SACs) and Site of Species Scientific Interest (SSSI) and locally designated sites such as Local Nature Reserves (LNR) and Site of Importance for Nature Conservation (SINC);

- Biodiversity value, for example, habitats or species which are rare or uncommon, species rich assemblages, species which are endemic or on the edge of their range, large populations or concentrations of uncommon or threatened species, and/or plant communities that are typical of valued natural/semi-natural vegetation types;
- Potential value, as addressed by targets to increase the biodiversity value for example of SSSIs, international sites and some Species and Habitats of Principal Importance. If detailed plans exist to enhance the value of such areas then it may be appropriate to value them as if the intended resource already existed;
- Secondary and supporting value, for example, habitats or features which provide a buffer to valued features or which serve to link otherwise isolated features; and
- Presence of Species and Habitats of Principal Importance and or local London and the London Borough of Camden Biodiversity Action Plan (BAP) habitats and species.

2.24 The ecological interest of the site and the proposed development has also been evaluated in terms of the London Borough of Camden Local Development Framework Unitary Development Plan (2010) and The London Plan policies relating to nature conservation.

LIMITATIONS

2.25 It should be noted that, whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation and prediction of the natural environment.

2.26 Furthermore, it is important to note that information taken from the desk study is unlikely to be comprehensive. Even where data is held, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest; the area may be simply under-recorded. However, this is not likely to be a significant limitation as this information will be supplemented by the field survey data.

2.27 This Phase 1 habitat survey and protected species assessment does not constitute a full botanical survey, or a Phase 2 pre-construction survey that would include accurate GIS mapping for invasive or protected plant species.

2.28 The protected species assessment provides a preliminary view of the likelihood of protected species occurring on the site, based on the suitability of the habitat, known distribution of the species in the local area provided in response to our enquiries, and any direct evidence on the site. It should not be taken as providing a full and definitive survey of any protected species group. It is only valid at the time the survey was carried out. Additional surveys may be recommended if, on the basis of the preliminary assessment or during subsequent surveys, it is considered reasonably likely that other protected species may be present.

2.29 There was a limited view of the north and west elevation of B3 due to the elevations backing onto an adjacent site that was not accessible. However, the west elevation was viewed from Iverson Road using binoculars; furthermore, the north pitch of the roof was inspected from the inside of the building. Therefore, it is considered that the inspection was sufficient to grade the potential of the building.

2.30 Despite these limitations, it is considered that this report reflects accurately the habitats present, their biodiversity values and the potential of the site to support protected and notable species.

3 Results

DESK TOP STUDY

3.1 Records of statutory and non-statutory sites within 1km radius of the site are provided in Table 1. Protected and notable species recorded within 1km radius of the site are also discussed below.

Statutory Sites of Importance for Nature Conservation

3.2 The site is not subject to statutory nature conservation designations, such as Special Protection Area (SPA), SSSI, SACs or LNRs. One statutory designated site lies within 1km of the site. Westbere Copse statutory LNR is located approximately 990m north-west of the proposed development site. The reserve has varied habitats including spring and summer meadows, a pond, woodland and scrub areas. The adjacent open space area is secondary woodland. The pond supports common frogs *Rana temporaria*, common toads *Bufo bufo* and newts *Triturus* species. Woodpeckers *Picidae* species are sometimes seen, as are other woodland birds such as long-tailed tit *Aegithalos caudatus*, song thrush *Turdus philomelos*, robin *Erithacus rubecula* and dunnock *Prunella modularis*. Sparrowhawks *Accipiter nisus* and kestrels *Falco tinnunculus* have also been noted within the LNR.

Non-Statutory Sites of Importance for Nature Conservation

3.3 The site is not subject to non-statutory Sites of Importance for Nature Conservation (SINC). There are 10 non-statutory designated SINCs within 1km of the site, the closest of which is West Hampstead Railsides, Medley Orchard and Westbere Copse Site of Borough Grade I Importance for Nature Conservation located immediately north of the site, these sites are described in Table 1 below.

Table 1: Sites of Importance for Nature Conservation within a 1km radius of the site.

Site Name	Reason for Designation	Area ha	Distance from Site (km)
Site of Borough Grade I Importance for Nature Conservation			
Silverlink Metro between Brondesbury and Willesden Junction	Brent's railsides form an extensive network of cuttings and embankments, providing important habitat for birds, mammals and insects. The mosaic of trees, bushes, tall perennials, grassy vegetation and ruderal	9.85	670m SW

Table 1: Sites of Importance for Nature Conservation within a 1km radius of the site.

Site Name	Reason for Designation	Area ha	Distance from Site (km)
	species provides a mixture of vegetation of different heights, species and structure, providing food, breeding sites and shelter for a wide diversity of birds, reptiles and mammals.		
Hampstead Cemetery	This site has a large number of mature trees, particularly ash. There is a wildlife area in the north of the eastern half of the cemetery, which has been planted with various trees, shrubs and wild flowers attractive to wildlife. This is where most of the butterflies are found. Birds recorded in the cemetery include jay, green woodpecker, long-tailed tit, goldcrest, willow warbler and linnet.	9.31	805m NW
West Hampstead Railsides, Medley Orchard and Westbere Copse	Land near Brondesbury is covered in a complex of shrub and secondary woodland. Much of the length aside the Thameslink line is densely covered in secondary woodland, bramble scrub and tall herb communities. A small part of Westbere Copse is managed as a nature reserve. The Medley Orchard is an old orchard, which is a rare habitat in London, and the fruit trees can support important communities of invertebrates. Medley Orchard is now largely secondary woodland of ash, but a few old fruit trees survive.	7.94	Immediate -ly north of the site
Site of Borough Grade II Importance for Nature Conservation			
Frognal Court Wood	A small woodland, containing many different species. The understory is composed of a variety of shrubs with a ground flora of wildflowers. Many species of bird frequent the wood.	0.2	900m E
Broadhurst Gardens Meadow	This communal garden consists of a meadow of varying grass heights and a perimeter belt of trees and shrubs, with a grassland sward with some wildflowers. The site abounds with insects, including butterflies, beetles, hoverflies and grasshoppers.	0.73	470m SE
Gondar Gardens Covered Reservoir	This undisturbed covered reservoir is vegetated mostly with neutral grassland, with a moderate diversity of wildflowers. Typical grassland butterflies are present and this is the only known site in Camden with slow worms *Anguis fragilis* present. Small areas of woodland are present. This provides habitat for common birds.	1.1	700m NW
Green Triangle	Organic community garden with an area of sycamore woodland. There is an amenity	0.28	970m SE

Table 1: Sites of Importance for Nature Conservation within a 1km radius of the site.

Site Name	Reason for Designation	Area ha	Distance from Site (km)
	area with herb garden beds and parts planted with shrubs and young trees. Flower and herb beds include species attractive to insects. There is a wildlife pond with common frogs present.		
Site of Local Importance for Nature Conservation			
Kilburn Grange Park	This park site contains a good range of mature trees, including a high proportion of native species. Dense planted shrubberies around the perimeter also include some native species. The trees and shrubs provide nesting habitat for a range of common garden birds. There is an area of wasteland in the north-western corner. Two species that are scarce in London are present, including round-leaved crane's-bill and small-flowered crane's-bill.	3.32	485m SW
160 Mill Lane Community Garden	A small community garden with a good range of scattered trees. The pond contains good numbers of smooth newts *Lissotriton vulgaris*. Behind the pond is a 'wild area' composed of developing woodland scrub.	0.19	435m NW
Frognal Lane Gardens	A small private, communal garden, with a good number of mature trees, wild flowers and a small pond.	0.55	750m NE

Protected and Notable Species

3.4 The data search provided by GiGL in 2011 included information on all protected and notable species within a 1km radius of the site. The paragraphs below describe the legally protected, Species of Principal Importance and otherwise notable species recorded that are most relevant to the site. Their relevance is based upon the habitats present and the ecological requirements of the species listed. The legal and policy status of the species in question and the resulting implications are discussed in Sections 4 and 5.

Bats

3.5 The data search provided five records of common pipistrelle *Pipistrellus pipistrellus* and two records of unidentified pipistrelle bats *Pipistrellus* sp. within 1km of the site, dating from 1993 to 2010. The closest record was of a common pipistrelle located approximately 642m east of the site (The Ecology Consultancy, 2011). Bat Dusk Emergence Surveys undertaken on the adjacent site 163 Iverson Road in 2012

recorded common pipistrelle commuting across the site. Overall, bat activity at the adjacent site was extremely low (The Ecology Consultancy, 2012).

3.6 All bat species are local BAP species.

Birds

3.7 The data search provided numerous records of birds within 1km of the site. Those relevant to the habitats present within the site included House sparrow *Passer domesticus*, song thrush *Turdus philomelos* and common starling *Sturnus vulgaris*. The above bird species are Species of Principal Importance and the house sparrow is a local BAP species.

EXTENDED PHASE 1 HABITAT SURVEY

3.8 A Habitat Plan of the sites is provided in Appendix 1, Figure 1, with photographs in Appendix 2. A full list of plant species identifiable at the site during this survey, along with an assessment of their abundance, is provided in Appendix 3.

3.9 In summary, the site was dominated by buildings and hard standing (see Photograph 1, Appendix 2) with some parcels of habitat which included tall ruderal and ephemeral short perennial vegetation. Scattered broad-leaved trees were also present over hard standing.

Scattered Broad-Leaved Trees

3.10 There were two young ash *Fraxinus excelsior* trees and one semi-mature elder *Sambucus nigra* tree within the site. The ash trees were located over hard standing to the west of Building 1 and the elder was located in the north-east corner of the site. The elder had been cut back.

Tall Ruderal Vegetation

3.11 There was a parcel of tall ruderal vegetation in the north of the site that was dominated by hedge bindweed *Calystegia sepium* (Photograph 2, Appendix 2). The hedge bindweed had grown over the fence line and other vegetation present. There was also a thin stretch of tall ruderal vegetation in the south of the site adjacent to Iverson Road that was dominated by common nettle *Urtica dioica*.

Ephemeral Short Perennial Vegetation

3.12 Scattered throughout the site and predominantly growing through the concrete hard standing was ephemeral short perennial vegetation. Denser patches of vegetation were located on the boundaries of the site and to the south of B3. Species included an *Aster* species, creeping bent *Agrostis stolonifera*, Canadian fleabane *Conyza canadensis*.

Buildings

3.13 There were a total of three buildings on the site. Detailed building descriptions are provided in the Preliminary Bat Roost Assessment below.

Bare Ground

3.14 There was a patch of bare ground in the north-east of the site. The ground was covered with fallen leaves and dead plants.

Hard Standing

3.15 A car park comprising hard standing dominated the site. (Appendix 2, Photograph 1). Vegetation had colonised areas of the hard standing where there were cracks. In the south of the site adjacent to one of the entrances and growing through the concrete were two small Japanese knotweed *Fallopia japonica* saplings (Target Note 1).

Target Notes

3.16 Please refer to the Phase 1 habitat map in Appendix 1 for the locations of the features labelled as target notes and described below:

- Target Note 1 (TN1): two Japanese knotweed plants growing over hard standing. Both have been treated for removal since early 2013 (Appendix 2, Photograph 3);
- Target Note 2 (TN2): two small storage structures (Appendix 2, Photograph 2); and
- Target Note 3 (TN3): the location of a felled elder tree.

PRELIMINARY BAT ROOST ASSESSMENT

3.17 A full external inspection of the three buildings and internal inspection of the Iverson Tyres Garage was conducted in daylight hours on 17th October 2013. The results are described below and mapped on Figure 1, Appendix 1 and photographs can be found in Appendix 2.

Portable Cabins (B1 and B2)

External Inspection

3.18 There were two portable cabins on the site (Appendix 2, Photographs 1 and 2). They were one-storey temporary buildings used as a reception (B1) and an office (B2). Both B1 and B2 had flat roofs and were constructed from a plastic material and metal. The window frames were uPVC and were well-fitted with no gaps. There were plastic drip edges and soffits, but no gaps under these suitable for roosting bats were present. There were two circular holes in the soffit, immediately above the drain pipe on the east elevation of B2. However, because of the holes location, the likelihood of these gaps being used is considered to be negligible due to the presence of guttering creating a cluttered access/egress zone and the plastic material provides no grip for bats to climb on for access.

Assessment

3.19 No bats or evidence of bats were recorded during the inspection. Furthermore, the buildings lacked features suitable to support roosting bats. Therefore, B1 and B2 have been assessed as having **negligible potential** to support roosting bats.

Iverson Tyres Building (B3)

External Inspection

3.20 The Iverson Tyres building (B3) was located in the north of the site (Appendix 2, Photograph 1). It was a single-storey brick built building with solid walls. It had a tiled pitched roof with cement ridge tiles and 14 raised skylights on both pitches. There was lead flashing around the skylights that was in a good state of repair with no visible gaps suitable for roosting bats (Appendix 2, Photograph 4). The north, west and south elevations had a cement render and timber fascias or barge boards. The south elevation had a large metal sign that ran the length of the wall and double height metal roller doors that were open at the time of the survey. There were also metal roller doors on the eastern gable end of the building.

3.21 There were three lifted tiles on the south pitch of the roof (Appendix 2, Photograph 4) no other tiles were noted to be lifted or missing on the south pitch. There was missing mortar between the brick work on the eastern gable end, however, there were no crevices or holes that could provide suitable roosting points for bats. There was a gap under the end ridge tile on the eastern gable end of the building (Appendix 2, Photograph 5).

Internal Inspection

3.22 The building was in use as a vehicle repair and tyre garage. The ground floor was one large room with a small toilet block. The ground floor was used to work on cars and, therefore, was well lit and noisy. Tyres were stored on shelves along the walls (Appendix 2, Photograph 6).

3.23 A mezzanine floor had been built to store tyres, access of which was via a staircase in the east of the building. The roof had a traditional timber queen post roof truss. The tiles were laid directly onto timber battens and there was no insulation. The space was well lit due to the presence of the skylights and strip lighting (Appendix 2, Photograph 7).

3.24 No bats or evidence of bats was recorded during the inspection. Furthermore, the construction of the interior of the void and the nature of its use was unsuitable to support roosting bats.

Assessment

3.25 No bats or evidence of bats were recorded during the inspection. The three lifted tiles on the south pitch would not have provided suitable roosting points for bats, because there was no lining beneath the tiles. There was one feature potentially suitable for roost bats and that was the gap under the end ridge tile as noted above. However, given the well-lit nature of the site from adjacent street lighting, current high activity on site, lack of vegetation on site and the low bat activity recorded in 2012 and the lack of other suitable features to support roosting bats, B3 has been assessed as having **negligible potential** to support roosting bats.

GROUND-LEVEL TREE INSPECTION FOR BATS

3.26 There were two young ash trees and one semi-mature elder tree within the site. The trees were considered to be unsuitable to support roosting bats owing to these specimens either being too young to have sufficient features to support bats, and/or because of a lack of suitable roosting features for bats being observed. Therefore, they have been assessed as having **negligible** potential to support roosting bats.

PROTECTED SPECIES ASSESSMENT

3.27 The habitats at the site were evaluated as to their likelihood to provide sheltering, roosting, nesting and foraging habitat for a range of protected and/or notable species

and invasive species. The evaluation is based on the results of the desk top survey, any direct observations made during the site survey, an assessment of the suitability of on-site and adjoining habitat for the species included, and information on the wider distribution of these species in the UK and locally. The relevant legislation and policies relating to protected species and habitats are set out in Appendix 4.

3.28 Those species considered potentially present, owing to the presence of suitable habitat within the site, were further evaluated as follows:

- Bat species;
- Breeding birds; and
- Invasive plant species.

3.29 The site is considered to be of **negligible potential** for all other protected or notable species.

Table 2: Assessment of potential presence of protected species at the proposed development site.

Habitat/species	Main legislation and policy (see Appendix 4)	Reason for consideration	Likelihood of occurrence
Protected and notable species			
Bats	Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended). Wildlife and Countryside Act 1981 (as amended) Schedule 5. All bat species are local BAP species.	The site contains potential roosting habitat *i.e.* buildings. The data search returned records for bats.	**NEGLIGIBLE:** (for foraging and or commuting bats) The site has limited or no suitable habitat present to provide a significant foraging or commuting route for bats. The site is also subject to light pollution, which would deter bats from using the sites. **NEGLIGIBLE:** (for roosting bats) The buildings and trees on sites are considered unlikely to support roosting bats due to the lack of surrounding habitat and the effects of light pollution and disturbance. Furthermore, there were none or limited features on the buildings or trees which were considered suitable to support roosting bats.
Breeding birds	Wildlife and Countryside Act 1981 (as amended).	The site contains limited suitable breeding habitat i.e., trees for a variety of common bird species.	**LOW:** There is limited habitat suitable for nesting and foraging birds and the site is heavily disturbed by human activity. However, there were young to semi-mature scattered broad-leaved trees and tall ruderal, which included hedge bindweed that had formed a dense mat of vegetation over the northern boundary. The tall ruderal vegetation and trees potentially provides nesting and foraging opportunities for a variety of common species.
Invasive species			
Invasive species	Section 14 and Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).	Invasive species are widespread in many habitats, commonly found on disturbed sites, old gardens and herb/grassland/ scrub mosaics.	**CONFIRMED PRESENCE** Japanese knotweed was recorded in the south of the site (Target note 1).

4 Site Evaluation

4.1 Habitats and species on the site were evaluated following standard guidance on ecological impact assessment published by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2006) using the recommended geographic frame of reference.

FEATURES OF INTERNATIONAL VALUE

4.2 Features of international value are principally sites covered by international legislation or conventions. SACs for example are implemented through the Council Directive 92/43/EEC on the Conservation of Natural Habitats and or Wild Fauna and Flora 1992 (the Habitats Directive) that is implemented in England and Wales through the Conservation of Habitats and Species Regulations 2010, as amended. These include SACs and SPAs (implemented through the EC Birds Directive) as well as Ramsar sites (implemented through the Ramsar Convention) which may be designated for habitats or important populations of certain species. This legislation also extends protection to some species such as bats, dormice *Muscardinus avellanarius* and great crested newt *Triturus cristatus* regardless of location or population size.

4.3 There are no sites of international importance for nature conservation within 1km of the site and the site does not meet any of the criteria for designation at this scale.

FEATURES OF NATIONAL VALUE

4.4 Features of national value include statutory sites such as SSSIs that are notified under the Wildlife and Countryside Act 1981 (as amended) or important populations of species with a notable conservation status. There were no sites of national importance within the 1km of the search area and the site does not support any features that would justify designation at this level.

4.5 National legislation also provides protection to certain species in addition to those covered by international legislation, including bats and birds. The site does not support any features, which would support nationally significant populations or assemblages of these species.

FEATURES OF COUNTY (I.E. GREATER LONDON) VALUE

4.6 The site is not designated as a Site of Metropolitan Importance for Nature Conservation nor does it meet the criteria for such a designation. The vegetation types and likely species assemblages at the site are not sufficient to warrant value at the metropolitan scale.

FEATURES OF BOROUGH (I.E. LONDON BOROUGH OF CAMDEN) VALUE

4.7 The site is not designated as SINC and contains no features that would justify designation at borough level. The West Hampstead Railsides, Medley Orchard and Westbere Copse SINC is located adjacent to the northern boundary of the site. However, the on-site habitats are unlikely to perform a significant supporting role for this SINC as they do not contain woodland or other similar habitats for which it is designated for.

FEATURES OF LOCAL (I.E. 1-2KM) VALUE

4.8 The site and habitats within are limited. Therefore, it is considered that rare species, large populations of species or very diverse assemblages of species are unlikely to be present and, therefore, not of local value.

FEATURES OF VALUE WITHIN THE IMMEDIATE VICINITY OF THE SITE

4.9 The scattered trees, tall ruderal vegetation and ephemeral short perennial vegetation are locally common, of limited extent, do not perform a significant supporting role for nearby green spaces and are of low ecological value. Scattered trees and the hedge bindweed have potential to support nesting and foraging birds including Priority Species and BAP species. Nevertheless, due to the small area of suitable habitats within the site and the abundance of similar habitats in the adjacent residential gardens and rail lines, any populations present are unlikely to be large or significant in the local context. They are, therefore, likely to be of value within the immediate vicinity of the site only.

POTENTIAL LOCAL PLANNING POLICY IMPLICATIONS

4.10 On the basis of the completed surveys it is considered that Policy CS15 in The London Borough of Camden Local Development Framework Core Strategy (The London Borough of Camden, 2010) and The London Plan (Greater London Authority, 2011) Policy 7.19 are relevant, as shown in Table 3 below. The full text of the relevant policies from this document is contained in Appendix 4.

Table 3: The London Borough of Camden Local Development Framework and The London Plan policies relevant to the site

Policy	Relevance to the site
The London Borough of Camden Local Development Framework: **Policy CS15: Protecting and improving our parks and open spaces and encouraging biodiversity** The Council will protect and improve sites of nature conservation and biodiversity, in particular habitats and biodiversity identified in the Camden and London Biodiversity Plans in the borough by: - Protecting trees and promoting the provision of new trees and vegetation, including additional street trees; - Expecting the provision of new or enhanced habitat, where possible, including through biodiverse green or brown roofs and green walls; - Designating existing nature conservation sites; - Protecting other green areas with nature conservation value, including gardens, where possible. The Council will protect and improve Camden's parks and open spaces. We will tackle deficiencies and under-provision and meet increased demand for open space by: - Securing other opportunities for additional public open space.	There is little to no habitat of ecological value on the site. However, there are three semi-mature trees and a small patch of tall ruderal, which may potentially provide nesting and foraging habitat for birds. Although these habitats will be removed, they will be replaced by the living roofs and walls, amenity area and new trees that are proposed as part of the new development. Currently the site is dominated by hard standing and buildings. Therefore, the proposed living roofs and walls, amenity area and new tree planting should increase the habitat area post development. The nearest SINC is immediately north of the site. The proposals for planting new trees in the north of the site and along the eastern boundary as well as the provision of living roofs and walls and an amenity area between the blocks, will potentially provide a new habitat corridor through the site and linking new habitats to the adjacent SINC
The London Plan: **Policy 7.19 Biodiversity and access to nature** Development proposals should wherever possible, make a positive contribution to the protection, enhancement, creation and management of biodiversity.	Living roofs and walls will be created, an amenity area between the blocks and new trees will be planted in the north-east corner of the site and along the eastern boundary. Therefore, the site should be enhanced for biodiversity post development. The trees, living roofs and walls will potentially provide more habitat for nesting and foraging birds than there was before. The new habitats will potentially provide a new habitat corridor through the site and a new habitat link to the SINC north of the site. The new habitats may potentially provide new foraging and commuting habitat for bats. The proposed living roofs and walls will also potentially provide new habitat for invertebrate species.

5 Conclusions and Recommendations

CONCLUSIONS

5.1 The site does not form part of any statutory or non-statutory designated nature conservation sites. There is one statutory designated site for nature conservation within 1km, Westbere Copse statutory LNR is located approximately 990m north-west of the site. There are 10 SINCs within 1km of the site; the closest of which is West Hampstead Railsides, Medley Orchard and Westbere Copse, which lies immediately north of the site. The development proposals should ensure that they do not damage this site.

5.2 The site at 159-161 Iverson Road, West Hampstead, Camden was dominated by buildings (one garage and two portable cabins) and hard standing, surrounded by residential development, industrial buildings and a railway line was located north of the site. The only habitats on site consisted of two young and one semi-mature scattered broad-leaved trees, tall ruderal and ephemeral short perennial vegetation and which were assessed as having **low potential** to support breeding birds. The buildings and trees on site have been assessed as having **negligible potential** to support roosting bats due to the lack of suitable roosting features, commuting and foraging habitat. The site is disturbed by frequent human activity and is well lit at night by security and street lighting, which can deter some species of bat.

5.3 The site was also considered to have **negligible potential** to support other protected or notable species. However, in the unlikely event that any of the above species are found to be present during works, works must cease immediately and ecological advice sought immediately.

5.4 Two small Japanese knotweed plants (invasive species) were recorded in the south of the site adjacent to one of the entrances.

5.5 The above habitats are common urban habitats that were limited in extent and were not exceptional examples of their type in the context of the local area. Therefore, these habitats are of value within the immediate vicinity of the site only. Through appropriate management and enhancements there is the potential to increase the ecological value of the site post development.

RECOMMENDATIONS

5.6 The following mitigation measures are recommended to avoid a legal offence and ensure compliance under relevant planning policy.

Protected Species Mitigation

Breeding Birds

5.7 The site contained three scattered broad-leaved trees and tall ruderal that was dominated by hedge bindweed. The habitats were assessed as having low potential to support nesting birds. Where the scope of works requires the removal of these trees and tall ruderal, the works must be conducted outside of the main bird nesting season (March to August, inclusive) to avoid any potential offences relating to nesting birds (Newton *et al.*, 2004).

5.8 Where this is not possible, a search for any nesting birds must be undertaken by an experienced ecologist prior to tree felling and the clearance of the tall ruderal vegetation. If any are found, the nests are to be protected. This involves setting up a cordon of appropriate size for the species concerned around the nest. Works may then proceed up to, but not within that cordon. Once an ecologist confirms that the young have fledged and left the nest, works can be completed. If any nesting birds are found at any time during clearance works, work must stop immediately and an ecologist consulted immediately. All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended).

Invasive Species

5.9 Japanese knotweed was observed growing on site. Whilst it is not an offence to have Japanese knotweed growing on land it is listed on Schedule 9, Part II of the Wildlife and Countryside Act 1981 (as amended) making it an offence under Section 14 (2) (a) of the Act to "plant or otherwise cause Japanese knotweed to grow in the wild". Methods to ensure that this non-native and highly invasive species does not spread will be required. Furthermore, as best practice it is recommended that efforts are made to eradicate this species from the site. Further details on Japanese knotweed and its eradication as well as information of trained specialists can be found at the Property Care Association website http://www.property-care.org/Homeowners.Invasive_Weed_Control.asp.

Biodiversity Enhancement

5.10 The following options have been prepared as a guide for methods to enhance the biodiversity value of the site post development:

Vegetation Planting Schemes of Value to Wildlife

5.11 The use of plants of known value to wildlife is recommended in the planting schemes throughout the site. Species of biodiversity value should be used in a structured scheme that includes trees, shrubs, climbers, herbaceous perennials and bulbs etc.

5.12 Any planting scheme should utilise a high percentage of native tree and shrub species. Suitable native trees and shrubs or trees with wildlife value providing nectar and berries that could be used include hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, crab apple *Malus sylvestris*, wild plum *Prunus domestica*, callery pear *Pyrus calleryana* and Swedish whitebeam *Sorbus intermedia.*

5.13 Climbers should be planted along the edges of fences and/or walls where they will provide a green façade of potential value to foraging birds and insects.

Provision of Bird Nesting Opportunities

5.1 Bird nesting boxes can be installed on the new buildings and trees as recommended in the London Borough of Camden Biodiversity Action Plan (London Borough of Camden, 2013). Woodcrete bird boxes (Schwegler, 2010) are recommended as they include a broad range of designs, are long lasting compared to wooden boxes and insulate occupants from extremes of temperature and condensation. Further information is as follows:

- The following boxes provide a range of nesting opportunities for different bird species: Schwegler house sparrow (house sparrow were recorded within the desk study) terrace boxes 1SP that can be installed on buildings, Schwegler 1B hole-fronted, 26mm entrance hole and 32mm entrance hole (which can be attached to trees or walls and are suitable for a range of garden birds) and Schwegler 2H open-fronted 120mm opening (which should be attached to walls and are suitable for robins and wrens).
- Bird species hold territories, therefore, all nest boxes must be placed apart from one another, ideally on different building facades and trees to avoid territorial conflicts, and to maximise the chance that they will be utilised by breeding birds. The exception would be for house sparrow terrace boxes (1SP), as this is a

communally nesting species, and 1SP boxes may be placed together on the same façade;

- Bird boxes should be placed at roof level (or at least two metres above ground level on trees), out of direct sunlight, and ideally facing south-east. Boxes should be located near to vegetation but away from bird feeders. The manufacturer of the boxes will provide information on how the boxes should be affixed to the building and or trees; and
- Nesting boxes will require cleaning out over winter months as part of maintenance requirements, so should be erected where access for maintenance is possible, but where health and safety risks can be avoided (e.g. not above doorways/windows).

Provision of Bat Roosting Opportunities

5.2 Bat boxes can be installed on the new buildings and trees as recommended in the London Borough of Camden Biodiversity Action Plan (London Borough of Camden, 2013). Woodcrete bat boxes (Schwegler, 2010) are recommended as they include a broad range of designs, are long lasting compared to wooden boxes and insulate occupants from extremes of temperature and condensation. Further information is as follows:

- Boxes should be placed apart from one another, ideally on different building facades (although not above doorways or windows)/trees;
- The boxes should not be lit by any new lighting proposals for the site;
- The bat boxes should be erected 3-7m above ground, typically on a south-east facing elevation;
- The following models, Schwegler 1FF and 1FFH, would be suitable for pipistrelle species and can be installed on buildings and walls. They both are open at the bottom and so will not need cleaning; and
- Suitable bat box models to install onto buildings or that can be built into the building include; Schwegler 1FQ, Schwegler 1FR and Ibstock enclose bat box.

5.3 Bat boxes are increasingly found to be unsuccessful in the absence of specific ecological advice (BCT, pers. comm.). Therefore, it is recommended that opportunities are explored in consultation with an ecologist, with specifications for roosting features being drawn up.

Provision of Biodiverse Roofs and Walls

5.4 Living roofs and walls are proposed on the new buildings on site. The installation of biodiverse green roofs (as recommended in the London Borough of Camden Biodiversity Action Plan) should be considered over sedum substrate roofs which deliver fewer biodiversity services as they are typically less species-rich, have a shallower substrate depth and require a higher level of maintenance. Please note that the UK's Green Roof Code of Best Practice (GRO, 2011) advocates a minimum substrate depth of 80mm for extensive green roofs. Advice should be sought from a specialist designer such as the Green Roof Consultancy, which would be able to provide a detailed specification to maximise the biodiversity value of the biodiverse roof.

5.5 Biodiverse green roofs should incorporate a variety of substrate types, should be sown with a suitable wildflower seed mix containing a variety of pollen and nectar-rich sources that flower in early spring and extend into autumn and be plug planted with a high proportion of native species. By planting a wildflower seed mix containing a variety of pollen and nectar-rich sources that flower in early spring and extend into autumn (e.g. the Emorsgate ER1F wildflowers for green roofs seed mix[3]), the roofs and walls will provide food sources for bees, butterflies, moths and beetles throughout the year. They should have a varied and contoured substrate depth[4] and use commercially available brick-based substrates that are a recycled by-product of the building industry. The installation of biodiverse green roofs would accord with policies in the London Plan regarding living roofs and walls.

5.6 Biodiverse green roofs have a range of environmental benefits, which include; improving site biodiversity, providing sustainable drainage, improving building performance, assisting to improve the negative effects of climate change and providing valuable amenity space within an urban environment. The provision of a biodiverse green roof incorporating a mosaic of habitats, such as; wildflowers, grasses, bare substrates/mounds and log piles will also provide foraging habitat for bats, foraging and nesting habitat for invertebrates and birds.

3 http://wildseed.co.uk/mixtures/view/57.
4 Please note that the UK's Green Roof Code of Best Practice (GRO, 2011) advocates a minimum depth of 80mm for extensive green roofs, and should ideally vary between 80mm and 150mm.

Provision of Insect/Bee Walls

5.7 Insect/bee walls could be created and installed on the living roofs (see Figure 1 and 2) these will provide areas for shelter, nesting and over-wintering (Buglife, undated). Bees/insects often nest in holes in wood and old walls. Bug hotels and bespoke walls can be designed and supplied by John Little of the Green Roof Company (greenroofshelter.com).

Figure 1: An example of a bespoke insect/bee wall (The Green Roof Consultancy).

Figure 2: An example of a large insect wall on a green roof (The Green Roof Consultancy).

External Lighting

5.8 Lighting can deter some bat species, however, simple measures can be adopted to encourage biodiversity and bats to use the site for foraging in or commuting through. It is recommended that a habitat buffer is created to prevent light spillage into the Medley Orchard and Westbere Copse SINC north of the site. The following measures have been taken from Bat Conservation Trust Landscape and Urban Design for Bats and Biodiversity (Gunnell *et al.*, 2012) and other referenced sources:

- Minimise light spill by eliminating any bare bulbs and upward pointing light fixtures. The spread of light should be kept near to or below the horizontal plane, by using as steep downward angle as possible and/or shield hood. Flat, cut-off lanterns are best;
- Use light sources that emit minimal ultra-violet light (Langevelde and Feta, 2011) and avoid the white and blue wavelengths of the light spectrum, so as to avoid attracting insects and thus potentially reducing numbers in adjacent areas, which bats may use for foraging;
- Limiting the height of lighting columns to eight metres and increase the spacing of lighting columns (Fure, 2006) can reduce the spill of light into unwanted areas;

- For pedestrian lighting, low level lighting that is directional and below three lux at ground level, but preferably below one lux should be used;
- Artificial lighting proposals should not directly illuminate tree lines and areas of scrub, which may be of value to foraging or commuting bats;
- Lighting that is required for security reasons should use a lamp of no greater than 2000 lumes (150 Watts) and be PIR sensor activated, to ensure that the lights are not on only when required (Jones 2000; Bat Conservation Trust, 2009);
- Uplighters should be avoided, particularly at the base of trees; and
- If possible 'dark zones' could be created by limiting or removing lighting within a 5 - 10m buffer between lit areas and stretches of habitat corridors and around scattered trees.

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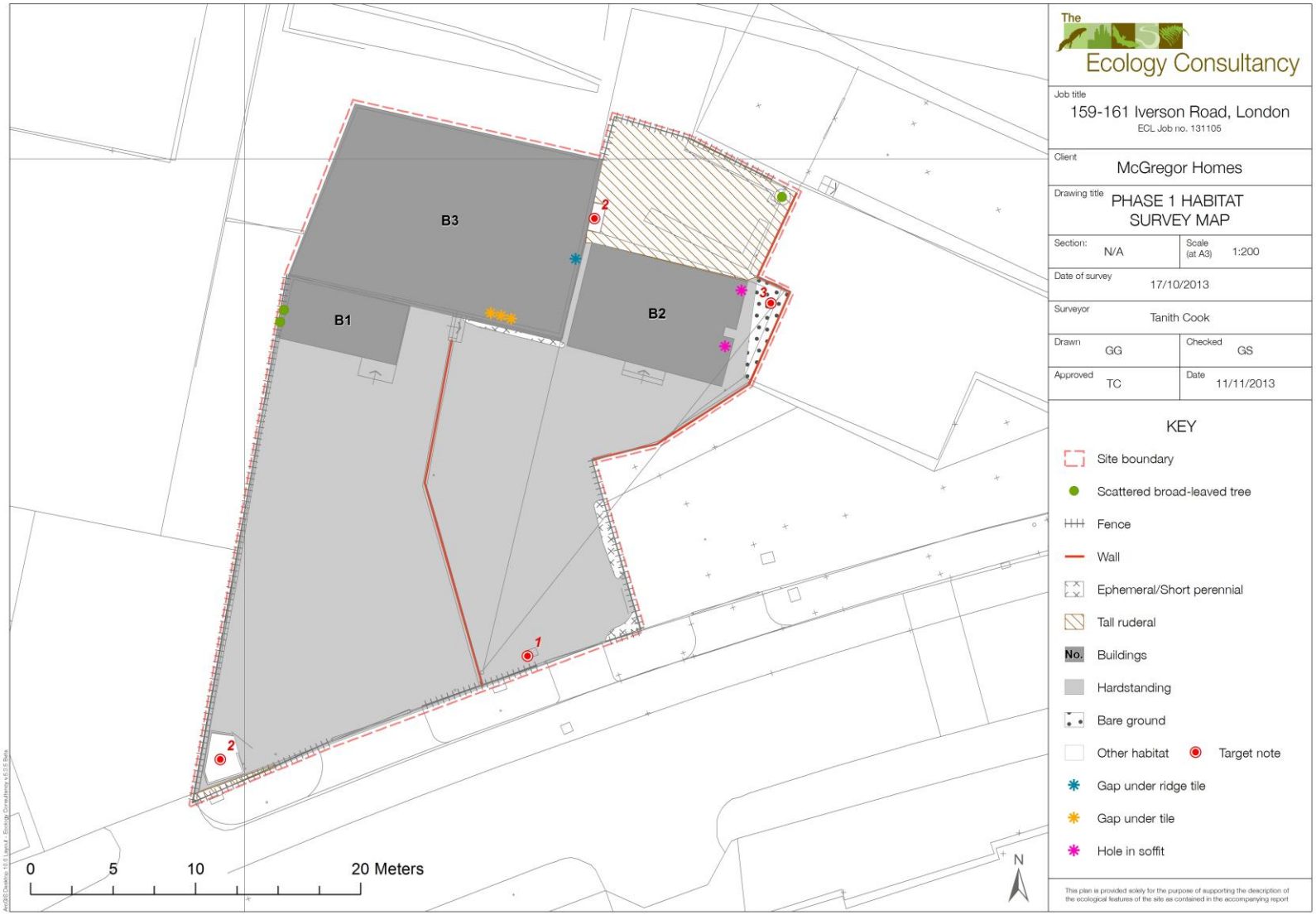
Appendix 1: Habitat and Preliminary Bat Roost Assessment Map

Figure 1: Habitat Survey Map

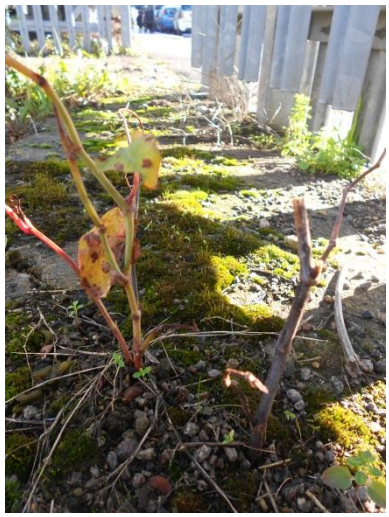


Appendix 2: Photographs

Photograph 1
View north from the entrance of the site. The site was dominated by hard standing, two portable cabins (B1 and B2) and the Iverson Tyres Garage (B3) building.

Photograph 2
The tall ruderal vegetation located in the north-east corner of the site. The north elevation of B2 is in the left of the photo and the eastern gable end of B3 is visible in the background.

Photograph 3
Japanese knotweed which was recorded in the south of the site adjacent to the entrance.



Photograph 4
The south pitch of B3. There were three lifted tiles just above the eaves.

Photograph 5
The eastern gable end of B3, there was a gap beneath the end ridge tile.

Photograph 6
The ground floor of B3.

Photograph 7
The mezzanine floor of B3 was used to store tyres. The floor was well lit by daylight from the skylights and strip lighting.

Appendix 3: Plant Species List

Plant Species List for 159-161 Iverson Road, West Hampstead, London compiled from the Phase 1 habitat survey carried out on 17th October 2013

Scientific nomenclature follows Stace (2010) for vascular plant species. Vascular plant common names follow the Botanical Society of the British Isles 2003 list, published on its web site, www.bsbi.org.uk. Please note that this plant species list was generated as part of a Phase 1 habitat survey, does not constitute a full botanical survey and should be read in conjunction with the associated Phase 1 Report.

Abundance was estimated using the DAFOR scale as follows:

D = dominant, A = abundant, F = frequent, O = occasional, R = rare, LD =locally dominant e=edge only, p=planted, s=seedling or sucker, t=tree, y = young tree,

Latin Name	Common name	Abundance	Qualifiers
Calystegia sepium	Hedge bindweed	D	
Urtica dioica	Common nettle	A	
Rubus fruticosus agg.	Bramble	O	
Cirsium sp.	Thistle	O	
Senecio jacobaea	Common ragwort	O	
Rumex sp.	Sorrell	O	
Taraxacum officinale agg.	Dandelion	O	
Conyza canadensis	Canadian fleabane	O	
Aster	Aster species	O	
Fraxinus excelsior	Ash	R	Y
Sambucus nigra	Elder	R	
Reseda luteola	Weld	R	
Stellaria media agg.	Chickweed	R	
Fallopia japonica	Japanese knotweed	R	S
Agrostis stolonifera	Creeping bent	R	

Appendix 4: Legislation and Planning Policy

Important notice: This section contains details of legislation and planning policy applicable in Britain only (i.e. not including the Isle of Man, Northern Ireland, the Republic of Ireland or the Channel Islands) and is provided for general guidance only. While every effort has been made to ensure accuracy, this section should not be relied upon as a definitive statement of the law.

A NATIONAL LEGISLATION AFFORDED TO SPECIES

The objective of the EC Habitats Directive[5] is to conserve the various species of plant and animal which are considered rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Since the passing of the Wildlife & Countryside Act 1981, various amendments have been made, details of which can be found on www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CRoW) Act (2000).

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991;
- Countryside and Rights of Way (CRoW) Act 2000;
- Natural Environment & Rural Communities (NERC) Act 2006;
- Protection of Badgers Act 1992:
- Wild Mammals (Protection) Act 1996.

[5] Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora

Species and species groups that are protected or otherwise regulated under the aforementioned domestic and European legislation, and that are most likely to be affected by development activities, include herpetofauna (amphibians and reptiles), badger, bats, birds, dormouse, invasive plant species, otter, plants, red squirrel, water vole and white clawed crayfish.

Explanatory notes relating to species protected under The Conservation of Habitats and Species Regulations 2010 (as amended) (which includes smooth snake, sand lizard, great crested newt and natterjack toad), all bat species, otter, dormouse and some plant species are given below. **These should be read in conjunction with the relevant species sections that follow.**

- In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.
- The Conservation of Habitats and Species Regulations 2010 does not define the act of 'migration' and therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.
- In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three 'tests': i) the action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment; ii) that there is no satisfactory alternative and iii) that the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

Bats

All species of bat are fully protected under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. all bats)
- Deliberate disturbance of bat species as:
  - a) to impair their ability:
    - (i) to survive, breed, or reproduce, or to rear or nurture young;
    - (ii) to hibernate or migrate[3]
  - b) to affect significantly the local distribution or abundance of the species

- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Bats are also currently protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level);
- Intentional or reckless obstruction of access to any place of shelter or protection:
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

How is the legislation pertaining to bats liable to affect development works?

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity of a local population.

Birds

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the Wildlife and Countryside Act 1981 (as amended). Among other things, this 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 it is in use or being built;
- Intentionally take or destroy an egg of any wild bird:
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.

Certain species of bird, for example the barn owl, black redstart, hobby, bittern and kingfisher receive additional special protection under Schedule 1 of the Act and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC). This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young;
- Intentional or reckless disturbance of dependent young of such a bird.

How is the legislation pertaining to birds liable to affect development works?

To avoid contravention of the Wildlife and Countryside Act 1981 (as amended), works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird nesting season which typically runs from March to August[6]. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Those species of bird listed on Schedule 1 are additionally protected against disturbance during the nesting season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

B NATIONAL AND EUROPEAN LEGISLATION AFFORDED TO HABITATS

Statutory Designations: National

Nationally important areas of special scientific interest, by reason of their flora, fauna, or geological or physiographical features, are notified by the countryside agencies as statutory **Sites of Special Scientific Interest** (SSSIs) under the National Parks and Access to the Countryside Act 1949 and latterly the Wildlife & Countryside Act 1981 (as amended). As well as underpinning other national designations (such as **National Nature Reserves** which are

[6] It should be noted that this is the main breeding period. Breeding activity may occur outwith this period (depending on the particular species and geographical location of the site) and thus due care and attention should be given when undertaking potentially disturbing works at any time of year.

declared by the countryside agencies under the same legislation), the system also provides statutory protection for terrestrial and coastal sites which are important within a European context (Natura 2000 network) and globally (such as Wetlands of International Importance). See subsequent sections for details of these designations. Improved provisions for the protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales).

The Wildlife & Countryside Act 1981 (as amended) also provides for the making of **Limestone Pavement Orders**, which prohibit the disturbance and removal of limestone from such designated areas, and the designation of **Marine Nature Reserves**, for which byelaws must be made to protect them.

Statutory Designations: International

Special Protection Areas (SPAs), together with **Special Areas of Conservation** (SACs) form the **Natura 2000** network. The Government is obliged to identify and classify SPAs under the EC Birds Directive (Council Directive 2009/147/EC (formerly 79/409/EEC)) on the Conservation of Wild Birds). SPAs are areas of the most important habitat for rare (listed on Annex I of the Directive) and migratory birds within the European Union. Protection afforded SPAs in terrestrial areas and territorial marine waters out to 12 nautical miles (nm) is given by The Conservation of Habitats & Species Regulations 2010. The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SPAs in UK offshore waters (from 12-200 nm).

The Government is obliged to identify and designate SACs under the EC Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora). These are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive within the European Union. SACs in terrestrial areas and territorial marine waters out to 12 nautical miles are protected under The Conservation of Habitats & Species Regulations 2010. The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SACs in UK offshore waters (from 12-200 nm).

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and wise use, in particular recognizing wetlands as ecosystems that are globally important for biodiversity conservation. Wetlands can include areas of marsh, fen, peatland or water

and may be natural or artificial, permanent or temporary. Wetlands may also incorporate riparian and coastal zones adjacent to the wetlands. Ramsar sites are underpinned through prior notification as Sites of Special Scientific Interest (SSSIs) and as such receive statutory protection under the Wildlife & Countryside Act 1981 (as amended) with further protection provided by the Countryside and Rights of Way (CRoW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. This effectively extends the level of protection to that afforded to sites which have been designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs).

Statutory Designations: Local

Under the National Parks and Access to the Countryside Act 1949 Local Nature Reserves (LNRs) may be declared by local authorities after consultation with the relevant countryside agency. LNRs are declared for sites holding special wildlife or geological interest at a local level and are managed for nature conservation, and provide opportunities for research and education and enjoyment of nature.

Non-Statutory Designations

Areas considered to be of local conservation interest may be designated by local authorities as a Wildlife Site, under a variety of names such as County Wildlife Sites (CWS), Local Wildlife Sites (LWS), Local Nature Conservation Sites (LNCS), Sites of Biological Importance (SBIs), Sites of Importance for Nature Conservation (SINCs), or Sites of Nature Conservation Importance (SNCIs). The criteria for designation may vary between counties.

Together with the statutory designations, these are defined in local and structure plans under the Town and Country Planning system and are a material consideration when planning applications are being determined. The level of protection afforded to these sites through local planning policies and development frameworks may vary between counties.

Regionally Important Geological and Geomorphological Sites (RIGS) are the most important places for geology and geomorphology outside land holding statutory designations such as SSSIs. Locally-developed criteria are used to select these sites, according to their value for education, scientific study, historical significance or aesthetic qualities. As with local Wildlife Sites, RIGS are a material consideration when planning applications are being determined.

C NATIONAL PLANNING POLICY

The Natural Environment and Rural Communities Act 2006 and The Biodiversity Duty

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 40 of the Act requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

D REGIONAL AND LOCAL PLANNING POLICY

The following London Borough of Camden Local Development Framework Core Strategy (2010) policy applies to the site:

Policy CS15 Protecting and Improving our parks and open spaces and encouraging biodiversity

The Council will protect and improve Camden's parks and open spaces. We will:

a) protect open spaces designated in the open space schedule as shown on the proposals map, including our Metropolitan Open Land, and other suitable land of 400sqm or more on large estates with the potential to be used as open space;

b) tackle deficiencies and under-provision and meet increased demand for open space by:

- providing additional open space at King's Cross;
- securing additional on-site public open space in the growth areas of Euston, West Hampstead Interchange, Holborn and Tottenham Court Road, and other parts of Central London. Where the provision of on-site public open space is not practical on a particular site in these areas, the Council will require a contribution to the provision of additional public open space on identified sites in the vicinity. If it can be demonstrated to the Council's satisfaction that no such suitable sites are available, we will require improvements to other open spaces in the area;
- securing improvements to publicly accessible open land on the Council's housing estates; and
- securing other opportunities for additional public open space.

c) secure from developments that create an additional demand for public open space, where opportunities arise, improvements to open spaces, including to:

- the facilities provided, such as play and sports facilities;
- access arrangements; and
- the connections between spaces.

The Council will protect and improve sites of nature conservation and biodiversity, in particular habitats and biodiversity identified in the Camden and London Biodiversity Plans in the borough by:

d) designating existing nature conservation sites;

e) protecting other green areas with nature conservation value, including gardens, where possible;

f) seeking to improve opportunities to experience nature, in particular in South and West Hampstead, Kentish Town and central London, where such opportunities are lacking;

g) expecting the provision of new or enhanced habitat, where possible, including through biodiverse green or brown roofs and green walls;

h) identifying habitat corridors and securing biodiversity improvements along gaps in habitat corridors;

i) working with The Royal Parks, the London Wildlife Trust, friends of parks groups and local nature conservation groups to protect and improve open spaces and nature conservation in Camden;

j) protecting trees and promoting the provision of new trees and vegetation, including additional street trees.

The Council will preserve and enhance the historic, open space and nature conservation importance of Hampstead Heath and its surrounding area by:

k) working with the City of London, English Heritage and Natural England to manage and improve the Heath and its surrounding areas;

l) protecting the Metropolitan Open Land, public and private open space and the nature conservation designations of sites;

m) seeking to extend the public open space when possible and appropriate;

n) taking into account the impact on the Heath when considering relevant planning applications;

o) protecting views from Hampstead Heath and views across the Heath and its surrounding area;

p) improving the biodiversity of, and habitats in, Hampstead Heath and its surrounding area, where opportunities arise.

The Council will preserve and enhance the Regent's Canal by:

q) balancing the differing demands on the Canal, its towpath and adjoining land;

r) implementing opportunities to make the Canal a safer place;

s) applying the guidance in the Regent's Canal Conservation Area Management Strategy;

t) implementing opportunities to provide additional nature conservation areas and improve the role of the Canal and its adjoining land as a habitat corridor (green chain);
u) working with British Waterways, Natural England, other land owners/developers, users and the local community to improve the Canal and towpath.

The following London Plan (2010) policy applies to the site:

Policy 7.19 – Biodiversity and access to nature

A. The Mayor will work with all relevant partners to ensure a proactive approach to the protection, enhancement, creation, promotion and management of biodiversity in support of the Mayor's Biodiversity Strategy. This means planning for nature from the beginning of the development process and taking opportunities for positive gains for nature through the layout, design and materials of development proposals and appropriate biodiversity action plans.
B. Any proposals promoted or brought forward by the London Plan will not adversely affect the integrity of any European site of nature conservation importance (to include special areas of conservation (SACs), special protection areas (SPAs), Ramsar, proposed and candidate sites) either alone or in combination with other plans and projects. Whilst all development proposals must address this policy, it is of particular importance when considering the following policies within the London Plan: 1.1, 2.1-2.17, 3.1, 3.3, 5.14, 5.15, 5.17, 5.20, 6.3, 7.14, 7.15, 7.25, and 7.26. Whilst all opportunity and intensification Areas must address the policy in general, specific locations requiring consideration are referenced in Annex 1.
Planning decisions C. Development proposals should:
a. wherever possible, make a positive contribution to the protection, enhancement, creation and management of biodiversity
b. prioritise assisting in achieving targets in biodiversity action plans (BAPs) set out in Table 7.3 and/or improve access to nature in areas deficient in accessible wildlife sites
c. not adversely affect the integrity of European sites, and be resisted where they have significant adverse impact on European or nationally designated sites or on the population or conservation status of a protected species, or a priority species or habitat identified in a UK, London or appropriate regional BAP or borough BAP.
D. On Sites of Importance for Nature Conservation development proposals should:
a. give the highest protection to sites with existing or proposed international designations 24 (SACs, SPAs, Ramsar sites) and national designations 25 (SSSIs, NNRs) in line with the relevant EU and UK guidance and regulations

b. give strong protection to sites of metropolitan importance for nature conservation (SMIs). These are sites jointly identified by the Mayor and boroughs as having strategic nature conservation importance

c. give sites of borough and local importance for nature conservation the level of protection commensurate with their importance.

E When considering proposals that would affect directly, indirectly or cumulatively a site of recognised nature conservation interest, the following hierarchy will apply:

1. avoid adverse impact to the biodiversity interest

2. minimize impact and seek mitigation

3. only in exceptional cases where the benefits of the proposal clearly outweigh the biodiversity impacts, seek appropriate compensation.

LDF preparation F. In their LDFs, boroughs should:

a. use the procedures in the Mayor's Biodiversity Strategy to identify and secure the appropriate management of sites of borough and local importance for nature conservation in consultation with the London Wildlife Sites Board.

b. identify areas deficient in accessible wildlife sites and seek opportunities to address them

c. include policies and proposals for the protection of protected/priority species and habitats and the enhancement of their populations and their extent via appropriate BAP targets

d. ensure sites of European or National Nature Conservation Importance are clearly identified.

e. identify and protect and enhance corridors of movement, such as green corridors, that are of strategic importance in enabling species to colonise, re-colonise and move between sites.

E SPECIES AND HABITATS OF PRINCIPAL IMPORTANCE FOR THE CONSERVATION OF BIODIVERSITY IN ENGLAND

In 1994 the UK Government published its response to the Convention on Biological Diversity that it signed along with over 150 other nations at the Rio Earth Summit in 1992. Biodiversity – the UK Action Plan (HM Government 1994) and subsequent publications (e.g. UK Steering Group 1995) set out a programme for the national Biodiversity Action Plan (BAP), now referred to as Species and Habitats of Principal Importance for the Conservation of Biodiversity across the UK, including the development of targets for biodiversity, and the techniques and actions necessary to achieve them. The Species and Habitats of Principal Importance for the Conservation in England includes a list of priority species and habitats derived from Section 41 of the Natural Environmental and Rural Communities (NERC) Act 2006. The priority species and habitats are of conservation concern, either because they are rare in an international or national context or have undergone serious declines in their

populations in recent years. Species Action Plans have been prepared or are in preparation for a many of these species, whilst Habitat Action Plans are being produced for important or characteristic habitats identified in the plan.

F REGIONAL AND LOCAL BAPS

The UK plan also encourages the production of local Biodiversity Action Plans at the County or District level. The London Biodiversity Action Plan contains 11 Habitat Action Plans (HAPs) and eight Species Action Plans (SAPs) (http://www.lbp.org.uk/londonhabspp.html). The London Borough of Camden has also produced a Biodiversity Action Plan that contains three Habitat Action Plans.

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