



WEST HENDON ECOLOGICAL MANAGEMENT PLAN

(Framework Document)

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FRAMEWORK FOR ECOLOGICAL MANAGEMENT PLAN

- 1.1 The document sets out a Framework for an Ecological Management Plan (EMP) and SSSI mitigation plan. The key ecological issues identified during the ecological impact assessment are summarised together with the proposed mitigation and enhancement measures. An indication of the objectives of management and monitoring are then given.

Key Ecological Receptors (within Application Site)

- 1.2 The West Hendon Development WH5.0 Environmental Statement Volume I Barratt (March 2013) sets out the ecological baseline used to assess potential impacts on key ecological receptors. Whilst the assessment is based on ecological conditions pre-development, the range of habitats and species (together with the potential impacts identified) form the basis for the proposed mitigation and enhancement post-development.
- 1.3 Key receptors identified within the application site included a range of widespread and ubiquitous bird species, typical of an urban setting. However, three species of increased conservation value (song thrush, starling and house sparrow) were identified breeding on or nearby the site:
- 1.4 Field surveys for bats revealed 5 species passing through the application site or over land immediately adjacent to the application boundary.

Key Ecological Receptors (outside Application Site)

- 1.5 The key ecological receptor relevant to this scheme is the Brent Reservoir Site of Special Scientific Interest (SSSI); notified primarily for its breeding waterfowl, in particular great crested grebes (*Podiceps cristatus*). The SSSI also supports a diversity of wintering waterfowl and a variety of marginal plant species (both cited as of special note within Greater London).
- 1.6 Based on both desk study and field survey data, the key waterbird species using Brent Reservoir (based on the population regularly using the site) are:
- Great crested grebe – the breeding numbers of this species are a key reason for the designated of Brent Reservoir as a SSSI
 - Shoveler – numbers of this species occasionally approaches or exceeds 1% of the population present within the UK during autumn. September and October are key months, when numbers reach their peak in most years.
 - Gadwall – numbers of this species using the SSSI occasionally exceed 1% of the UK overwintering population and are often among the highest numbers in Greater London (during key periods). Numbers appear to increase from Sept/Oct onwards to a peak in mid-winter, followed by a decline into the new year (late Dec into Jan).

- 1.7 The overall waterbird assemblage is also recognised as being of value due to the contribution it makes to the overall ecological interest of the SSSI.
- 1.8 Baseline assessment identified that the main areas used by waterbirds were:
- The area of shallow open water toward the northern end of the northern arm of Brent Reservoir and surrounding marsh and marginal vegetation; and
 - The south-east corner of the main body of Brent Reservoir (currently managed as a bird sanctuary).
- 1.9 Both the above were identified as being key refuge areas for waterbirds during periods of disturbance; particularly when the main body of Brent Reservoir is used for sailing. It is also recognised that the marginal vegetation/marsh associated with the northern arm is used by a variety of nesting bird species. Maintaining the refuge qualities and breeding habitat in these areas (particularly the northern arm as this lies adjacent to the application site) are therefore a key aim of both the design process and on-going management.
- 1.10 Field surveys for bats revealed 5 species using the SSSI and its margins.

Ecological Mitigation and Enhancement Measures (from Environmental Statement)

Receptor	Description of Predicted Impact	Mitigation Measure
During demolition and construction		
Brent Reservoir SSSI/LNR/SMINC	Spread of non-native invasive species	No excavation within 7m of live Japanese knotweed. Herbicide treatment to control live plants. Soils containing Giant Hogweed seed or Japanese knotweed rhizomes to be removed to specialist treatment facility.
	Deterioration in water quality reaching Brent Reservoir	Implementation of CEMP and adherence to PPGs. Production of a pollution management plan to detail specific mitigation measures for each construction phase. Production of method statement for working within Brent reservoir SSSI (and approval from Natural England).
	Tree felling and woodland disturbance /loss	Avoid loss of mature trees/valued woodland features. Minimise area to be disturbed and agree Method of Working with CRT and NE. Establish and demark Root Protection Zones to safeguard trees during construction.
	Disturbance to habitats within SSSI	Establish 20m zone to be landscaped and appropriately planted. Install boundary fence with adjacent planting and adjacent linear swales
Non Statutory Sites of Nature Conservation Importance - Silk Stream and Burnt Oak	Deterioration in water quality reaching Brent Reservoir	Implementation of CEMP and adherence to Pollution Protection Guidance. Production of a

Receptor	Description of Predicted Impact	Mitigation Measure
Brook; Lower Dollis Brook and Harp Island SINCs		<p>pollution management plan to detail specific mitigation measures for each construction phase.</p> <p>Production of method statement for working within Brent reservoir SSSI (and approval from Natural England).</p>
Breeding Bird Assemblage (Application Site) , including Song Thrush, Starling, House Sparrow	Demolition of buildings and vegetation clearance	Demolition/clearance to be undertaken outside breeding season or following nesting bird survey if demolition/clearance required during breeding season. Provision of appropriately specified bird brick/boxes in new buildings and adjacent woodland areas. New landscape planting utilising native flora, creation of wetland features and construction of vegetated roofs.
	Construction noise, lighting and visual disturbance.	Erect and maintain hoarding around active demolition and construction areas.
Waterbird assemblage (SSSI), including Great Crested Grebe Shoveler, Gadwall	Vegetation clearance	Vegetation clearance to be undertaken outside breeding season or following nesting bird survey if demolition/clearance required during breeding season.
	Indirect construction impacts (noise, lighting and visual disturbance)	Erect and maintain hoarding around active demolition and construction areas.
	Temporary disturbance to waterbody during construction of Silk Stream footbridge	Locate footbridge within wet woodland to avoid visual disturbance and minimise other indirect impacts
	Restricted movement between northern arm and main arm of reservoir during construction of Cool	None required as no significant impacts predicted.

Receptor	Description of Predicted Impact	Mitigation Measure
	Oak Lane footbridge	
Bat assemblage (Application Site)	Demolition of buildings and felling of trees potentially resulting in loss of roosts	Survey prior to demolition/felling by licenced bat worker to determine steps required to safeguard bats/roosts. Provision of appropriately specified bat brick/boxes in new build and within woodland as an inherent component of each new phase
	Site clearance and resulting loss of foraging opportunities	Early establishment of new landscape planting, including wetland swales, within York Park adjacent to the linear woodland at the western boundary of the site.
	Indirect impacts resulting from construction lighting adjacent to SSSI	Avoid use of construction lighting or restrict so as not to exceed 0.5lux at SSSI boundary, including 20m above woodland canopy.
Bat assemblage (Reservoir)	Felling of trees potentially resulting in loss of roosts	Survey prior to demolition/felling by licenced bat worker to determine steps required to safeguard bats/roosts. Provision of appropriately specified bat brick/boxes.
	Indirect impacts resulting from construction lighting adjacent to SSSI	Avoid use of construction lighting or restrict so as not to exceed 0.5lux at SSSI boundary, including 20m above woodland canopy.
During operation		
Brent Reservoir SSSI/LNR/SMINC	Indirect impacts resulting from lighting, shading, recreational uses and changes in water quality.	Lighting not to exceed 0.5lux at SSSI boundary or over wet woodland in the north of the site, including 20m above woodland canopy. Installation of secure fence along SSSI boundary adjacent to the Application Site.

Receptor	Description of Predicted Impact	Mitigation Measure
		<p>Fence to be 1.5m in height with adjacent planting of native species and establishment of swales which jointly will dissuade access to the SSSI. Appropriate design and location of footbridges to minimise direct and indirect disturbance effects.</p> <p>Interpretation programme developed in conjunction with CRT and NE to promote an understanding and respect for the special features of the SSSI. .</p> <p>Implementation of Site wide and SSSI Management and Monitoring Plan</p> <p>Incorporation of SuDS within the development will provide water quality improvements. A swale, petrol interceptor and storm chambers will be incorporated into the site enhancing the existing situation.</p>
<p>Non Statutory Sites of Nature Conservation Importance (Silk Stream and Burnt Oak Brook; Lower Dollis Brook and Harp Island SINC)s)</p>	<p>Deterioration in water quality reaching Brent Reservoir</p>	<p>Incorporation of SuDS within the development will provide water quality improvements. A swale, petrol interceptor and storm chambers will be incorporated into the site enhancing the existing situation.</p>
<p>Breeding Bird Assemblage (Application Site), including Song Thrush, Starling, House Sparrow</p>	<p>Disturbance, including predation by domestic pets.</p> <p>Absence of features suitable for nesting and foraging</p>	<p>None required as no significant impacts predicted.</p> <p>Inclusion of appropriately specified bird brick/boxes.</p> <p>Landscape planting utilising native flora,</p>

Receptor	Description of Predicted Impact	Mitigation Measure
		creation of wetland features and construction of vegetated roofs.
Waterbird assemblage (SSSI), including Great Crested Grebe, Shoveler, Gadwall	Collision with tall buildings and windows	Appropriate design that diversifies building facades and avoids use of large reflective glass panes.
	Indirect impacts including, lighting and recreational disturbance	<p>Lighting not to exceed 0.5lux at SSSI boundary, including 20m above woodland canopy;</p> <p>Secure boundary fence, native planting and establishment of wetland swales adjacent to SSSI;</p> <p>Managed visual access to the reservoir by creation of a dedicated and accessible viewpoint over the waterbody at a location least likely to result in a disturbance to birds and other wildlife associated with the water body;;</p> <p>Interpretation programme developed in conjunction with CRT and NE to promote understanding and respect for the special features of the SSSI</p> <p>Implementation of Site wide and SSSI Management and Monitoring Plan.</p>
Bat assemblage (Application Site)	Absence of features suitable for roosting	Appropriately specified bat bricks to be included in buildings in all phases of re-development. These will mitigate for the loss of crevices and voids in existing buildings to be lost and that can be expected to be used by crevice dwelling species of bat.

Receptor	Description of Predicted Impact	Mitigation Measure
		<p>Appropriately specified bat boxes will be installed within the linear woodland adjacent to the SSSI and within the wet woodland in the north of the site and will provide suitable roosting conditions for species of bat more usually associated with woodland habitat.</p>
Bat assemblage (SSSI)	Indirect lighting impacts	<p>Lighting not to exceed 0.5lux at SSSI boundary, including 20m above woodland canopy.</p> <p>Lighting not to exceed 0.5lux at SSSI boundary, including 20m above woodland canopy.</p> <p>Appropriately specified bat boxes will be installed within the linear woodland adjacent to the SSSI and within the wet woodland in the north of the site and will provide suitable roosting conditions for species of bat more usually associated with woodland habitat.</p>

2 Scope of Ecological Management Plan

2.1 The EMP document will include the following:

- A mitigation strategy confirming how the mitigation measures summarised above will be delivered (including the specification, timing, mechanism or methodology as appropriate) together with identified responsibilities.
- Management objectives for the habitat creation areas (e.g. grassland, ponds and green roofs) or ecological features retained or provided during the operational phase of development (e.g. the linear woodland buffer to the SSSI and bat/bird boxes)
- Details of the management actions/activities proposed to meet the defined objectives and an identification of the responsible parties (where relevant or appropriate).
- A protocol/methodology for monitoring (as required) such that the relative success in meeting the objectives of management can be measured and reported, with the requirement for remedial steps to be identified as necessary.

2.2 Please note that a Site Wide Construction Environmental Management Plan (CEMP) will be separately prepared. Whilst it has been agreed that ecological mitigation, management and monitoring will all be contained within the EMP, cross reference will be made to the CEMP where appropriate to do so.

2.3 The mitigation strategy will confirm the following:

- How the spread of invasive plant species will be avoided
- How any deterioration to water quality in Brent Reservoir SSSI/LNR/SMINC will be avoided
- How disturbance of ecological receptors will be minimised through the use of hoarding and other screening measures
- How the footprint and impact of works within the SSSI will be minimised (installation of the Silk Stream and Cool Oak Lane bridges)
- How birds and bats within the application site and the SSSI will be safeguarded through sensitive timing or working practices
- Details of how building design and the lighting strategy have been developed to minimise potential impacts on birds and bats
- Details of how the Silk Stream bridge has been sited and designed to avoid or minimise potential disturbance to water birds within the SSSI and to minimise opportunities for users or dogs to stray into the surrounding woodland or wider SSSI area

2.4 The scope of management and monitoring for specific features of the development is summarised as follows

Bird and Bat Boxes/Tubes

Management Objectives

- 2.5 The objective of management will be to ensure on-going provision of bird nesting and bat roosting opportunities is maintained.

Management Actions/Activities

- 2.6 Management actions will involve replacement of damaged/missing boxes/tubes.

Monitoring

- 2.7 A suitable protocol for monitoring the condition of boxes/tubes will be established.

Green Roofs

Management Objectives

- 2.8 Management of green roofs will be aimed at maintaining the range of habitats that they are designed to support. Depending on design, green roofs may be allowed to naturally colonise or develop plant communities.

Management Actions/Activities

- 2.9 Management actions will include any necessary weeding or re-planting of green roofs.

Monitoring

- 2.10 A strategy will be developed to give a framework for monitoring green roof condition.

Management Objectives Trees and Shrubs

- 2.11 Management will be aimed at maintaining healthy trees and shrubs and setting the desired cover of tree and shrub vegetation within the site. Health and safety considerations (due to fallen or damaged trees/limbs) will also be taken into account.

Management Actions/Activities

- 2.12 Management will include necessary arboricultural works to maintain tree/shrub health and to ensure hazards are dealt with. Replacement planting will also be undertaken as required. Reference will be made to other sensitive species through timing of works (e.g. nesting birds).

Monitoring

- 2.13 A monitoring protocol will be established to ensure the condition of cover of trees/shrubs on site is in line with the objectives.

Other Habitats in York Park (including native species planting, grassland, pond and swales)

Management Objectives

- 2.14 The objective of habitat management will be to ensure proposed enhancements are successful and sustainable whilst allowing for the development of natural conditions and regeneration. This will be largely based on a desired floristic diversity with parameters set for vegetation cover. Key indicators of habitat quality will be established, including negative indicators such as invasive non-native species.

Management Actions/Activities

- 2.15 Management actions will include remedial planting, removal of non-desirable species and on-going habitat management such as mowing of grassland, clearance of vegetation cover in ponds/swales and removal of debris.

Monitoring

- 2.16 A monitoring protocol/methodology will be provided setting out how the relative success/condition of habitat types will be measured together with timeframes and triggers for remedial action.

Boundary Fencing (between site and SSSI)

Management Objectives

- 2.17 The aim of fencing management is to ensure an effective barrier to residents and dogs between the application site and the eastern edge of the Brent Reservoir SSSI is maintained.

Management Actions/Activities

- 2.18 Management of the boundary fencing will include the repair/replacement of damaged sections to maintain a functional barrier.

Monitoring

- 2.19 Monitoring will include a protocol for maintenance checks to assess fencing condition and trigger remedial actions.

Education and Interpretation

Management Objectives

- 2.20 The objective of education/interpretation is to inform residents of the presence and interest features of the SSSI whilst instilling a desire to protect the SSSI and desist from undertaking activities that could lead to damage to the SSSI habitats or disturbance of species (particularly waterbirds).

Management Actions/Activities

- 2.21 Management of visitor education/interpretation will include a range of measures to be developed and agreed with Natural England and the Canal and River Trust. .

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