

Preliminary Ecological Appraisal Barrie House

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Prepared for:
Megan White
Marek Wojciechowski Architects

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Assessment information

Prepared by:
Rachel Crookes

Quality assured by:
Gregory Day

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Executive Summary

Preliminary Ecological Appraisal

Barrie House

Executive Summary

Eight Associates has been commissioned by Marek Wojciechowski Architects to carry out a desktop study, Phase 1 habitat survey and protected species risk assessment in connection with the proposed Barrie House development.

This report details the existing ecology of the site, its potential for relevant protected species and how the development will enhance the ecological value of the surrounding area. It also outlines the legislation for these protected species, as well as reviewing Camden biodiversity policy.

The site consists of two connected apartment blocks that together make up Barrie House. An associated carparking area is also present, along with a rear garden area comprising a lawn with several mature trees in amongst areas of introduced planting. The introduced planting provides good opportunities for foraging and nesting bird species, with native, fruiting and flowering species present. Protected species information is summarised in the table below.

Recommendations have been made to mitigate against the loss of ecological features, and to enhance the site in line with Camden biodiversity policy, with the aim to provide a net gain for biodiversity on the site.

Key habitats present	<ul style="list-style-type: none"> Buildings, hardstanding, poor semi-improved grassland, introduced planting, bare ground
Protected species potential	<ul style="list-style-type: none"> Bats – low bat roost potential in two trees Birds – old nest present, potential to nest in site's mature trees
Further surveys required	<ul style="list-style-type: none"> No further bat surveys as trees to be retained. If trees are to be removed or heavily pruned as part of the works, a nesting bird watching brief will be needed where clearance/demolition works are to commence within the bird nesting season (March-August)
Ecological enhancements	<ul style="list-style-type: none"> Extensive plug-planted sedum roof Inclusion of mammal access holes External lighting in line with BCT guidelines Installation of at least two bat boxes Incorporation of native or fruiting and flowering plant species

Introduction

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Introduction

Eight Associates has been commissioned to undertake a desktop study, Extended Phase 1 habitat survey and protected species assessment of Barrie House in the London Borough of Camden.

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

The site consists of two connected apartment blocks that together make up Barrie House. An associated carparking area is also present, along with a rear garden comprising a lawn with several mature trees in amongst areas of introduced plating. The site is located on the southern border of the London Borough of Camden, within an urban setting. Residential buildings are primarily found in the immediate area – Primrose Hill lies approximately 150m to the north, and Regent's Park lies 150m south-east of the site. The site covers approximately 2,500m² in total, and the National Grid Reference for the centre of the site is TQ274835.

Current proposals for the site comprises the extension of the existing Barrie House development, to provide nine new residential units over a 4 to 5-storey development (including one basement storey).

Phase 1 Habitat Survey Methodology Preliminary Ecological Appraisal Barrie House

Desktop Study

A desktop study was undertaken using data from the Greenspace Information for Greater London (GiGL). The record centre provided evidence of statutory and non-statutory habitats, protected, notable and key species recorded within a 1km radius of the site. The data was reviewed to identify any habitats or species within the surrounding area that may be negatively impacted by the development. Records from over 10 years ago were removed from the analysis to give a more accurate view of the area's current notable species assemblage.

Phase 1 Habitat Survey

A survey was carried out to assess the ecology of the site on 7th January 2017, conducted by Rachel Crookes, an experienced ecologist. The survey provided an Initial Site Survey (Phase 1 habitat survey), which involved the identification of habitat types present and assessment of the possibility for protected species on site. This report summarises the findings from this survey.

The survey was carried out prior to any works being done at the site. The time of year was suboptimal for Phase 1 habitat surveys, however due to the nature of the site this was not considered to be a problem and all plant species observed were identified by the ecologist. The survey represents the site's existing ecology prior to the initial site preparation works, i.e. before RIBA Stage 5, and after RIBA Stage 1.

The site survey was based upon the standard Phase 1 survey methodology (JNCC, 2010). An inventory of habitats present on site was recorded and mapped. Plant species nomenclature followed Stace (2010) for vascular plant species. The site was also checked for the presence of invasive plant species as defined by Schedule 9 of the Wildlife and Countryside Act, 1981, as amended.

A Phase 1 habitat map, contained within Appendix A shows the habitats present at the site and photographs within Appendix B illustrate the key habitat features observed within the site.

Protected species assessment

An assessment of the site's potential to support protected species was carried out, based on the results of the desk study, observations made during the site survey, an assessment of the suitability of on-site and adjoining habitat, and information on the distribution of these species.

Protected species thought to be relevant to the site include:

- Birds.
- Bats.

A summary of the legislation surrounding these protected species is in Appendix C.

Limitations

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.

Desktop Study Results

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Results

The local records centre was consulted and a full data search returned historical records for protected species, UK BAP species, notable and rare species, as well as information regarding the designated sites and non-statutory local wildlife sites for Barrie House and the area within 1km radius. The full results of the data search are available on request.

A large variety of species records were returned by the data search, including species that are unlikely to occur on the development site given its context and the habitats present. Key species records that were considered potentially relevant to the site have therefore been extracted and discussed below.

The resolution of much of the data is poor, such that the precise location of many records is unclear; as 6 figure grid references only provide accuracy to the nearest kilometre. As such, it is not possible to confirm that there are no records from within the site, although the likelihood is low due to limited public access of the site.

Designated sites

The desk-based search shows that there are no sites with European or National statutory designations within a 1km radius of the site;

Six Sites of Importance for Nature Conservation are present within the search area

Site Name	Distance from site	Reasons for designation
London's Canals	200m S	London's canals support a wide range of aquatic flora, amongst which are found a number of locally uncommon species. The canals also support an important invertebrate fauna (including several species of dragon/damselflies), a diverse fish community, and breeding waterfowl.
Regent's Park	300m S	The best place site for breeding and migrant birds in central London, due to the park's size and range of habitats, especially its mature trees and ornamental lake.
Chalk Farm Embankment and Adelaide Nature Reserve	740m N	A steep-sided railway embankment, densely vegetated with secondary woodland. The nature reserve to the west is more open, with neutral grassland and scrub present as well as woodland. A diverse range of tree and plant species are present.
St John's Wood Church Grounds	670m SW	The site contains a mixture of meadow and woodland habitats, with associated communities of tall grasses and herbs. Most of the trees from the original graveyard have been left in place.
London Zoo	270m SE	The landscape of the zoo can be considered an extension of the 'parkland' within Regent's Park, its habitats supporting many species of birds, invertebrates and mammals. Nest boxes and feeding stations are sited to encourage bird populations to grow.
Primrose Hill	200m E	An area of Regent's Park consists mostly of mown amenity grassland with scattered groups of mature trees. The grassland beneath the trees retains some of the original fine leaved species including red fescue and creeping bent.

Desktop Study Results

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Flora	Seven species of notable flora have been recorded within 1km of the site – these include wild gladiolus <i>Gladiolus illyricus</i> , jersey cudweed <i>Gnaphalium luteoalbum</i> , daffodil <i>Narcissus pseudonarcissus</i> subsp. <i>Pseudonarcissus</i> , yarrow broomrape, <i>Orobancha purpurea</i> , service-tree <i>Sorbus domestica</i> , field woundwort <i>Stachys arvensis</i> , and large-leaved lime <i>Tilia platyphyllos</i> . Two species of lichen have also been recorded - brownflesh bracket <i>Coriolopsis gallica</i> and brown birch-bolete <i>Leccinum scabrum</i> . None of these species were observed on the site, and this group is not considered further within this report.
Invertebrates	A wide range of notable invertebrate species have been recorded within 1km of the site – these include fourteen species of moth, five species of beetle, two species of butterfly, two species of spider, one species of true bug, one species of bush cricket and one species of slug. These have all be recorded at least 250m away from the site, most likely in the wildlife sites near to the development site. The habitats on the development site are generally unsuitable for these invertebrates.
Amphibians	One record of the common frog <i>Rana temporaria</i> and one record of the common toad <i>Bufo bufo</i> were returned from the data search, located over 375m west of the site. These are likely to be records from waterbodies in Regents Park. The development site is unlikely to support this species or other amphibians; this group is not considered further within this report.
Reptiles	No records of reptiles were returned from the data search. No suitable habitat is present for reptiles on the site; this group is not considered further within this report.
Birds	<p>86 priority bird species have been recorded within 1km of the site. Predominantly passerine birds such as house sparrow <i>Passer domesticus</i> grey wagtail <i>Motacilla cinerea</i> and starling <i>Sturnus vulgaris</i> have been recorded, as well as several waterfowl species such as teal <i>Anas crecca</i> mute swan <i>Cygnus olor</i> and gadwall <i>Anas strepera</i>. Raptor species such as kestrel <i>Falco tinnunculus</i> and osprey <i>Pandion haliaetus</i> have also been observed. The bird species included those listed on Schedule 1 of the Wildlife and Countryside Act 1981, Section 41 of the NERC Act, Local Species of Conservation Concern, London and UK Biodiversity Action Plan and birds listed as Amber or Red on the IUCN Red list.</p> <p>All of the most recent records from the site are located at least 200m away of the site, and have been recorded within nearby gardens, parks and green spaces, as well as along Regent's Canal. There is suitable habitat for nesting passerine birds on the site, in the form of mature trees and shrubs.</p>
Bats	515 records of bat species were returned for the site - these records comprised of common pipistrelle <i>Pipistrellus pipistrellus</i> , soprano pipistrelle <i>Pipistrellus pygmaeus</i> , noctule <i>Nyctalus noctula</i> , serotine <i>Eptesicus serotinus</i> , Daubenton's bat <i>Myotis daubentonii</i> , Nathusius' pipistrelle <i>Pipistrellus nathusii</i> and unidentified pipistrelle and nyctalus species. The closest record for the site is 144m west of the site, and the majority of the records are from nearby large parks and green spaces such as Regents Park and Primrose Hill. These green spaces are anecdotally known to contain bat roosts.
Other mammals	248 records of hedgehog <i>Erinaceus europaeus</i> were returned from the desktop search. A population of hedgehogs is known to be present in Regents Park, where the majority of these records are likely from.

Survey Results

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Site description

The site is bound by Broxwood Way to the south-west, St Edmund's Terrace to the south-east, and residential properties to the north-west and north-east. Primrose Hill lies approximately 150m to the north, and Regent's Park lies 150m south-east of the site.

The site consists of two connected apartment blocks that together make up Barrie House. An associated carparking area is also present, along with a rear garden area comprising a lawn with several mature trees in amongst areas of introduced planting. Please refer to the Appendix A for a Phase 1 habitat map showing existing habitats on site.

Buildings

Barrie House is an eight-storey building with brick façades. The facades are generally in a good state of repair, with no cracks or crevices present that could accommodate roosting bats in the brickwork. The windows comprise of PVC with a concrete panel fixed immediately above each one. A small gap is present under each of the windows under the windows sills, however the cavity created is too large for bat roosting; in addition to this, the sill material is smooth, which would discourage bats gripping on to the surface. The roof is flat, and could not be accessed as part of the survey – there were no bat access points observed from the ground. PVC electrical cable covering runs up the building's facades – these create a gap that is too big for bat roosting, and is generally heavily cobwebbed. External lighting is present on the lowest two floors of the building.

An outbuilding is present in the western corner of the site. This is a brick build structure, the facades of which are in relatively good condition. Timber panels are present at the top of the building which create a gap that could be suitable for bat roosting, however this space is heavily cobwebbed, indicating a lack of use by roosting bats. Some of the windows have been boarded up, and one has been broken. This could allow bird species such as feral pigeon *Columba livia domestica* to roost within the building's internal space. Buddleja *Buddleja davidii* is present on an area of the building's flat roof.

Hardstanding

Hardstanding is present on the site in the form of a tarmac carpark, pedestrian walkways around the building and across the garden, and a small paved area connected to the north-east of Barrie House. This habitat has negligible ecological value.

Improved grassland

Areas of improved grassland are present on the site in the form of lawns at the front and rear of the building. A low diversity of species exists as is typical for this habitat, including annual meadow grass *Poa annua*, daisy *Bellis perennis*, chickweed *Stellaria media* dandelion *Taraxacum officinale* mallow *Malva sp.*, and yarrow *Achillea millefolium*. This habitat affords little ecological value.

Bare ground

Areas of bare ground are present in the northern corner of the site and along the north-eastern border of the site – there are also small areas under the individual trees on the site. Here there is minimal growth of plant species such as chickweed. This habitat has negligible ecological value.

Survey Results

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Introduced planting

Introduced planting is present across the site, consisting of a mix of primarily ornamental species. The areas of planting have a relatively diverse community of plants, with a mix of larger shrubs such as spotted laurel *Aucuba japonica*, fatsia *Fatsia sp.*, viburnum *Viburnum sp.*, thuja *Thuja sp.*, rhododendron *Rhododendron sp.* and snowberry *Symphoricarpos*, along with smaller perennial plants such as rose *Rosa sp.*, lavender *Lavandula angustifolia*, rosemary *Rosmarinus officinalis* and euphorbia *Euphorbia sp.* More ornamental and ruderal species are likely to emerge in warmer months.

Trees are present around the site at varying stages of maturity, with species including ash *Fraxinus excelsior*, sycamore *Acer pseudoplatanus*, hawthorn *Crataegus monogyna* and tree of heaven *Ailanthus altissima*. Dense ivy *Hedera helix* is present along the north-western border, and a privet hedge runs along the south-eastern boundary.

Japanese knotweed *Fallopia japonica* was previously present along the site's north-western boundary around three years ago, but has since been cleared by professional contaminated land specialists (pers. comms.)

Birds

A robin *Erithacus rubecula*, blue tit *Cyanistes caeruleus*, rose-ringed parakeet *Psittacula krameria* and feral pigeon *Columba livia domestica* were observed during the survey.

The site provides opportunities for nesting within the site's trees and introduced planting. Old nests are present within several of the site's mature trees.

Bats

No features that could accommodate roosting bats were observed on the buildings exteriors.

The mature trees on the site were inspected using binoculars for features that would be suitable for bats. Two of the trees on the site have structural features that could act as roosting features - T11 has three rot holes present on the trunk and large branches of the tree, and T26 has two rot holes present on the trunk. All of the holes look to be of a sufficient depth to accommodate bats, acting as transient roosts. The other trees on the site have negligible roosting potential for bats.

Other mammals

Holes made under the north-eastern fence are present – these are likely to have been made by foxes, but may also be used by hedgehogs.

A pipe is present in the eastern corner of the carpark – this look to have previously been used by foxes.

Site Evaluation and Compliance with Legislation

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Site Evaluation

The site is dominated by buildings, hardstanding and improved grassland, with a mix of bushes and herbs present within the areas of introduced planting. The introduced planting provides good opportunities for foraging and nesting bird species, with native, fruiting and flowering species present. Invertebrates are also likely to use this habitat for foraging.

The trees and external features of the buildings were assessed for bat roosting potential; the results of this assessment are discussed below.

Impacts on designated sites

There are no statutory sites within 1km of the development site – it is therefore unlikely that any will be affected as part of the works.

The nearest Sites of Importance for Nature Conservation are Primrose Hill, London's Canals and London Zoo – these are all within 300m of the site. The additional noise and air pollution from the site's construction activities are not likely to make an overall difference to the pollution that these SINCs typically receive. Due to the relatively small scale of the works and the physical separation of the site from the local wildlife sites by other buildings and roads, it is believed that there will be a negligible effect on these sites as a result of the development.

Bats

The external features of the existing buildings were inspected for potential bat roosting features. The buildings are generally in good condition, with no features seen that could accommodate roosting bats present.

Two of the trees on site have features that could lend themselves to roosting bats – T11 has three rot holes present on the trunk and large branches of the tree, and T26 has two rot holes present on the trunk. The site is located close to Regents Park and Primrose Hill, areas both known anecdotally to hold roosting bats. The desktop study returned a number of bat records, the closest of which is 144m west. The trees and introduced shrubs act as good foraging habitat for bats – the hedges and joined up gardens also provide good connectivity within the site and across the wider landscape for commuting bats. Barrow Hill Reservoir lies immediately north of the site, which also acts as good foraging habitat for bats. Following the Bat Conservation Trust (BCT) guidelines, the trees are therefore classed as having low bat roosting potential.

No works on the two trees are planned as part of the scheme. However, if changes are made to the scheme and these trees are to be heavily pruned or removed, further survey work will be required to determine whether the features in the trees are being used as bat roosts in the form of bat detector surveys.

Nesting birds

There are several mature trees on the site that either have old nests present within the canopy or have the potential to support nesting birds. The outbuilding also has a broken window that could allow birds such as feral pigeons to enter the internal space and roost.

It is therefore recommended that if any trees are to be heavily pruned or removed as part of the works, or the outbuilding is to be demolished, this should take place outside of the bird nesting season (i.e. between September and February) to avoid disturbing any wild birds nesting in this habitat. If works are to take place in the bird nesting season (March to August inclusive), a suitably qualified ecologist should come to site to confirm whether there are any active bird nests present immediately prior to the site clearance taking place. In the instance that nests are present, site works must be delayed until the young have fledged.

Recommendations for Ecological Enhancement Preliminary Ecological Appraisal Barrie House

Recommendations for Ecological Enhancement

To ensure the proposed development improves on the current ecological value of the site, the proposals should include a number of ecological enhancements. This is to ensure the ecological value found on the existing site is mitigated against, and the development contributes to the greening of the borough and an increase in biodiversity, whilst contributing to the requirements set out in Camden local biodiversity policies.

Recommendations include:

- Biodiverse plug planted roof
- Inclusion of mammal access holes
- External lighting in line with BCT guidelines
- Installation of at least two bat boxes
- Incorporation of native or fruiting and flowering plant species

Green roof

Biodiverse plug-planted green roofs are to be installed on the roofs of the proposed building. This option for planting allows for greater variety of vegetation which can be pre-selected to suit the location, rooftop growing conditions, colour scheme or biodiversity action plan required. Individual immature plants or 'plugs' are planted into the substrate by hand which will then grow on to give good cover over the next two full growing seasons. A substrate depth ranging from 80-150mm and a diversity of at least 12 plant species is recommended. The substrate should be a commercial brick-base aggregate (or equivalent).

The plug planting on the roof should consist of a variety of sedums, grasses, herbs and perennials, which will be planted by hand to the required density. The more plugs per square metre, the faster the vegetation will establish to cover the roof entirely. The plants will be able to survive shallow substrate depths, lower nutrient levels and have little or no irrigation requirement. Ideally the green roof should contain species that are native to the UK. A list of recommended plug plants can be found in Appendix F.

If possible, areas of bare shingle and bare sand should be incorporated into the green roof's landscaping in order to provide habitat for burrowing invertebrates.

Mammal access holes

It is recommended that the small hole in the wooden fence is retained (if the fence is to be kept) or a hole created at its original location, in order to continue allowing access through the garden for small mammals such as hedgehogs. This will ensure foraging routes are maintained, and connectivity is retained across the landscape for this species and others that use the site.

External lighting in line with the BCT guidelines

Bats are known to use the nearby open spaces such as Regents Park and Primrose Hill to roost and forage – this is also supported by records from the desktop study data. External lighting is known to negatively affect bat populations when designed poorly; overspill of light from the proposed development could reduce the value of the area to bats.

The building's external lighting should therefore be designed in line with the Bat Conservation Trust's "Bats and Lighting in the UK" guideline, to reduce the negative impact the development has on bat populations in the area. These guidelines have been summarised in Appendix E of this report.

Recommendations for Ecological Enhancement Preliminary Ecological Appraisal Barrie House

Bat boxes

It is recommended that at least two bat boxes or bricks are installed on the western façade of the building. The boxes should be made from untreated wood or 'woodcrete' (a mixture of wood shavings and cement). Schwegler 1FF or Schwegler 2F bat boxes are recommended as they are likely to be of interest to a wide range of species and they typically have longer lifespans than wooden boxes (example images are given below). Bat boxes should be placed at a minimum of 4m, preferably 5-6m, off the ground.

Alternatively, a bat brick can provide internal roost space, and can be incorporated into the fabric of a building as it is built or renovated. A variety of facings can be fitted to suit any existing brick, wood, stonework, or rendered finish, rendering the box unobtrusive.



Native plants

Where new planting is installed, this should include native species or species of benefit to wildlife. Planting should include a diverse mix of species, including a variety of fruiting and flowering species, grasses and herbaceous plants to provide a nectar source and overwintering habitat for invertebrates and in turn a foraging habitat for birds. Planting should be biased towards (and preferably exclusively) wildlife-friendly species, such as the following:

Beech *Fagus sylvatica*, box *Buxus sempervirens* lavender *Lavendula angustifolia*, hazel *Corylus avellana*, common dogwood *Cornus sanguinea*, wild privet *Ligustrum vulgare*, holly *Ilex aquifolium*, blackthorn *Prunus spinosa*, ivy *Hedera helix*, hawthorn *Crataegus monogyna*, guelder rose *Viburnum opulus*, honeysuckle *Lonicera periclymenum*, dog rose *Rosa canina*, heather *Calluna vulgaris*, viper's bugloss *Echium vulgare*, primrose *Primula vulgaris*, daffodil *Narcissus pseudonarcissus*, wood anemone *Anemone nemorosa*.

Night scented plants may also be beneficial to attract insects and in turn bats. Species such as evening-primrose *Oenothera biennis*, night-scented stock *Mattiola bicornia*, lemon balm *Melissa officinalis*, borage *Borago officinalis*, may be appropriate for this purpose.

Conclusions

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Conclusions

A site survey was undertaken at the Barrie House in the London Borough of Camden to review the ecology of the site and undertake a Phase 1 habitat survey to inform the site's planning application.

The site was found to have some ecological value in the form of nesting and roosting habitat for birds and bats, and the development will have a negligible impact on the non-statutory sites near to the development and the priority species in the area. The Camden Local Policy, compliance with EU & UK legislation for protected species is also reviewed and discussed.

Recommendations have been made to mitigate any impact from the development and ensure that the site is enhanced for wildlife and a gain for biodiversity in line with national and local policy.

Validation & Document References

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Site survey and report produced by Rachel Crookes:

Ecologist's Qualifications:	MSc - Conservation and Biodiversity BSc - Zoology
Evidence of practicing Ecologist	Eight Associates, Ecologist and Sustainability Consultant, conducting habitat and protected species surveys, producing reports to support planning and BREEAM (2016); carrying out habitat surveys of nature reserves and writing protected species survey guidelines for volunteers at the Chiltern Society (2015) carrying out water vole surveys, bat box inspections, bat radio tracking and mist netting with Aylesbury Vale Biodiversity department (2014).
Report verified by Stacey Cougill:	
Ecologist's Qualifications:	BSc – Environmental Science MSc – Conservation Biology UCert – Species Identification and Biological Recording.
Evidence of practicing Ecologist	Eight Associates, Sustainability Consultant specialising in Ecology (2011 to present date), Open University, iSpot, Biodiversity Mentor (2009 – 2012) and Westminster City Council, Biodiversity Project Manager (2007-2010).
Professional Code of Conduct	I am a full member of the Chartered Institute of Ecology and Environmental Management.

Validation

I confirm the information provided in this document is truthful and accurate at the time of completion.

Suitably Qualified Ecologist	Stacey Cougill
Signature of Ecologist	SC
Date	21/01/2019

Document	Reference
Photos taken by Rachel Crookes during the site survey	7 th January 2019
Phase 1 Habitat map	Created by Rachel Crookes. Base map: John Cromar's Arboricultural Company Ltd – Tree Value Assessment as per BS 5837:2012 & Root Protection Areas – Jan 2018

Appendix A: Phase 1 Habitat Map

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Appendix B: Site Photos

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View looking south of Barrie House



View looking north of Barrie House



Outbuilding in the western corner of the site



Hardstanding carpark area



Hardstanding amenity area



Area of bare ground in the northern corner of the site



Introduced planting beds and improved grassland



Introduced planting beds and improved grassland

Appendix B: Site Photos

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Introduced planting beds and improved grassland



Mammal access hole in north-eastern fence



Mammal access pipie



Bird nest in mature tree



Bat roosting feature in tree (to be retained)



Bat roosting feature in tree (to be retained)



Bat roosting feature in tree (to be retained)

Appendix C: Relevant Legislation

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Wild Birds

The Wildlife & Countryside Act 1981 (as amended) is domestic legislation for Great Britain. The Act includes the UK's domestic implementation of the species protection of the European Directive on the Conservation of Wild Birds (79/409).

Under the Wildlife and Countryside Act 1981 all birds, their nests and eggs are protected by law and it is thus an offence, with certain exceptions to intentionally:

- Kill, injure or take any wild bird.
- Take, damage or destroy the nest of any wild bird while it is in use or being built.
- Take or destroy the egg of any wild bird.
- Have in one's possession or control any wild bird (dead or alive) or any part of a wild bird that has been taken in contravention of the Act or the Protection of Birds Act 1954.
- Have in one's possession or control any egg or part of an egg that has been taken in contravention to the Act. This includes items taken or killed before the passing of the Act.
- Have in one's possession or control any live bird of prey of any species in the world (with the exception of vultures and condors) unless it is registered and ringed in accordance with the Secretary of State's regulations.
- Have in one's possession or control any bird of a species occurring on Schedule 4 of the Act unless registered (and in some cases ringed) in accordance with the Secretary of State's regulations.
- Disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Bats

All species of bat are fully protected under the Conservation of Habitats and Species Regulations 2010. It is illegal to injure, kill, capture or disturb a bat. It is also illegal to damage, destroy or obstruct trees, buildings or other places used for roosting, even if bats are not present.

Most development and maintenance work affecting bats and / or roosts e.g. bridge / tree maintenance works, demolition, barn conversions etc., therefore require a Habitats Regulations License for work to take place legally.

All bat species are also protected under the Wildlife and Countryside Act 1981 (as amended). This means they are additionally protected from intentional or reckless disturbance, intentional or reckless obstruction of access to any place of shelter or protection; and/or, selling, offering or exposing for sale, possession or transporting for purpose of sale.

Appendix D: Local Biodiversity Policy

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Camden Local Plan 2017

Policy A3 Biodiversity

The Council will protect and enhance sites of nature conservation and biodiversity. We will:

- a. designate and protect nature conservation sites and safeguard protected and priority habitats and species;
- b. grant permission for development unless it would directly or indirectly result in the loss or harm to a designated nature conservation site or adversely affect the status or population of priority habitats and species;
- c. seek the protection of other features with nature conservation value, including gardens, wherever possible;
- d. assess developments against their ability to realise benefits for biodiversity through the layout, design and materials used in the built structure and landscaping elements of a proposed development, proportionate to the scale of development proposed;
- e. secure improvements to green corridors, particularly where a development scheme is adjacent to an existing corridor;
- f. seek to improve opportunities to experience nature, in particular where such opportunities are lacking;
- g. require the demolition and construction phase of development, including the movement of works vehicles, to be planned to avoid disturbance to habitats and species and ecologically sensitive areas, and the spread of invasive species;
- h. secure management plans, where appropriate, to ensure that nature conservation objectives are met; and
- i. work with The Royal Parks, The City of London Corporation, the London Wildlife Trust, friends of park groups and local nature conservation groups to protect and improve open spaces and nature conservation in Camden.

Trees and vegetation

The Council will protect, and seek to secure additional, trees and vegetation.

We will:

- a. resist the loss of trees and vegetation of significant amenity, historic, cultural or ecological value including proposals which may threaten the continued wellbeing of such trees and vegetation;
 - b. require trees and vegetation which are to be retained to be satisfactorily protected during the demolition and construction phase of development in line with BS5837:2012 'Trees in relation to Design, Demolition and Construction' and positively integrated as part of the site layout;
 - c. expect replacement trees or vegetation to be provided where the loss of significant trees or vegetation or harm to the wellbeing of these trees and vegetation has been justified in the context of the proposed development;
 - d. expect developments to incorporate additional trees and vegetation wherever possible.
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Appendix D: Local Biodiversity Policy

Preliminary Ecological Appraisal

Barrie House

Camden Biodiversity Action Plan

The Built Environment Action Plan outlines the following priorities and opportunities for protecting and enhancing biodiversity:

The built environment provides significant opportunities for urban greening and enhancing biodiversity. In an urban borough such as Camden, buildings and infrastructure are dominant in the cityscape and we need to ensure they deliver environmental services for the benefit of our residents. Enhancements should provide multi-functional benefits that address issues of biodiversity, air quality, flood alleviation, climate change and access to the natural environment.

The main opportunities for providing biodiversity enhancements in the built environment are stated as:

- living roofs and walls;
- biodiversity enhancing landscaping;
- installation of artificial nesting and roosting sites;
- sustainable drainage systems (SuDS);
- trees.

The BAP includes the following relevant actions for the Built Environment;

Landscaping and Trees: All landscaping schemes to include biodiversity enhancing landscaping.

Green Corridors: Improve the 'green network' in Camden by retaining existing habitat corridors and securing biodiversity improvements along gaps in habitat corridors, as per the Core Strategy Policy CS15 and reflects the All London Green Grid.

SuDs: Provide input into briefs for Camden Council flood alleviation scheme designs to ensure all biodiversity opportunities taken.

Protected and / or priority bat and bird species in Camden, which are relevant to the assessed development include the following:

Group / taxon	Protected and / or Priority Species
Bats	Nathusius's Pipistrelle <i>Pipistrellus nathusii</i> Common Pipistrelle <i>Pipistrellus pipistrellus</i> Soprano Pipistrelle <i>Pipistrellus pygmaeus</i>
Birds	Song Thrush <i>Turdus philomelos</i> Common Starling <i>Sturnus vulgaris</i> House Sparrow <i>Passer domesticus</i> Common Linnet <i>Carduelis cannabina</i> Brambling <i>Fringilla montifringilla</i> Sky Lark <i>Alauda arvensis</i> Common Bullfinch <i>Pyrrhula pyrrhula</i> Hawfinch <i>Coccothraustes coccothraustes</i> Eurasian Tree Sparrow <i>Passer montanus</i>

Appendix E: Artificial Lighting for Bats

Preliminary Ecological Appraisal

Barrie House

Bats and artificial lighting in the UK

Illuminating a bat roost can cause disturbance (Downs et al 2003) and this may result in the bats deserting the roost or even becoming entombed within it (Packman et al 2015). Light falling on a roost access point will at least delay bats from emerging and this shortens the amount of time available to them for foraging (Boldogh et al 2007). In addition, the associated flightpath to and from the access point is just as valuable and vulnerable as the roost itself. Severing a key flightpath some distance from the roost could cause desertion in its own right. In addition to causing disturbance to bats at the roost, artificial lighting can also affect the feeding behaviour of bats. There are two aspects to this. One is the attraction that light from certain types of light sources has to a range of insects; the other is the presence of lit conditions posing a barrier to movement.

Sources of lighting which can disturb bats are not limited to roadside or external security lighting, but can also include light spill via windows, permanent but sporadically operated lighting such as sports floodlighting, and in some cases car headlights. Additionally, glare (extremely high contrast between a source of light and the surrounding darkness – linked to the intensity of a luminaire) may affect bats over a greater distance than the target area directly illuminated by a luminaire and must also be considered on your site.

Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires.

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used – See ILP Guidance for the Reduction of Obtrusive Light.
- Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

For further information on designing artificial lighting for bats, please see the Bat Conservation Trust and Institution of Lighting Professionals' Guidance Note 08/18.

Appendix F: Recommended Plug Plants

Preliminary Ecological Appraisal

Barrie House

Scientific name:	Common name:
<i>Achillea millefolium</i>	Yarrow
<i>Anthyllis vulneraria</i>	Kidney Vetch
<i>Armeria maritima</i>	Thrift
<i>Bellis perennis</i>	Daisy
<i>Briza media</i>	Quaking Grass
<i>Campanula rotundifolia</i>	Harebell
<i>Campanula glomerata</i>	Clustered Bellflower
<i>Carex flacca</i>	Glaucous Sedge
<i>Daucus carota ssp maritimus</i>	Wild Sea Carrot
<i>Festuca ovina</i>	Sheep's Fescue
<i>Festuca rubra ssp juncea</i>	Red Fescue
<i>Fragaria vesca</i>	Wild Strawberry
<i>Galium verum</i>	Lady's Bedstraw
<i>Geranium sp</i>	Geranium Varieties
<i>Glechoma hederacea</i>	Ground Ivy
<i>Helianthemum nummularium</i>	Common Rock-Rose
<i>Hypericum perforatum</i>	Perforate St Johns Wort
<i>Hypochaeris radicata</i>	Cats Ear
<i>Leontodon autumnalis</i>	Autumn Hawkbit
<i>Leontodon hispidus</i>	Rough Hawkbit
<i>Leucanthemum vulgare</i>	Oxeye Daisy
<i>Linaria vulgaris</i>	Yellow Toadflax
<i>Lotus corniculatus</i>	Birds-Foot Trefoil
<i>Origanum vulgare</i>	Wild Marjoram
<i>Plantago coronopus</i>	Bucks-Horn Plantain
<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Potentilla reptans</i>	Creeping Cinquefoil
<i>Primula veris</i>	Cowslip
<i>Primula vulgaris</i>	Selfheal
<i>Ranunculus bulbosus</i>	Bulbous Buttercup
<i>Sanguisorba minor</i>	Salad Burnet
<i>Scabiosa columbaria</i>	Small Scabious
<i>Sedum acre</i>	Biting Stonecrop
<i>Sedum album</i>	White Stonecrop
<i>Silene latifolia ssp. alba</i>	White Campion
<i>Silene maritima</i>	Sea Campion
<i>Silene vulgaris</i>	Bladder Campion
<i>Stachys officinalis</i>	Betony
<i>Thymus polytrichus</i>	Wild Thyme
<i>Viola hirta</i>	Hairy Violet
<i>Viola riviniana</i>	Common Dog Violet
<i>Viola tricolor</i>	Wild Pansy