Design and Access Statement

6 Streatley Place, Hampstead, London NW3 1HP

Appendix 6 -
Protected Species Survey

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PHASE 1 HABITAT AND BAT SURVEY, 6, STREATLEY PLACE, HAMPSTEAD, NW3 1HP.

To:
Living Architecture

August, 2013

From:
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REPORT CONTENTS

1.0 INTRODUCTION

1.1 PURPOSE

A Phase 1 Ecological Survey, extended to include bat surveys, was commissioned by 'Living Architecture' at workshops situated at 6, Streatley Place, at Hampstead Village, NW3 (TQ264849). This was undertaken by A. Fure holder of Class 2 protected species licences. The investigation was necessary in order to determine if any protected or principal species, particularly bats, might be affected by proposals to demolish the workshops and redevelop the site.

1.2 SITE DESCRIPTION

The site consists of four small workshops/sheds, which have generally been unoccupied for twenty five years. The site is located on the side of a steep hill and is overshadowed by tall trees, situated in a garden above. For this reason, few plants grow in the shaded area below, so the site is mostly bare earth around cobbles with a few self-sown trees. Run-off and drip from the tree canopy has taken its toll on the roofs below, which are breached, allowing rain and damp to infiltrate the structures.

1.3 DESIGNATION

There are no on-site designations, but to the north and north east lie Hampstead Health and Kenwood House and Grounds, Grade ll* on the English Heritage Register of Parks and Gardens of Special Historic interest, where there several bat species are known to roost. It is bordered on three sides by Hampstead Heath and combined with the woodland at Kenwood is collectively known as Hampstead Heath Woods. The national importance of Hampstead Heath Woods is demonstrated by its designation as a Special Site of Scientific Interest (SSSI). It comprises two principal units, the key element of which is lowland broadleaved, mixed and yew woodland, and a mire flush.

1.4 FEATURES

Eight species of bat have been recorded at nearby locations on account of the presence of a number of features, which include: historic buildings; older trees with rot holes; large water bodies providing food resources; and the size and connectivity to other sites. Trees and tree lines are used by bats in order to commute between features as well as

produce and shelter insect biomass upon which they feed. They also create a shield against light ingress, which is a factor for some of the less common bat species.

2.0 METHOD

2.1 DESK STUDY

A desk study was undertaken using widely available information as follows:
National Biodiversity Network Gateway http://data.nbn.org.uk
IGIGL, UK BAP, LBAP and SBAP (Suttons Biodiversity Action Plan);
and MAGIC (Multi Agency Geographic Information for the Countryside) website (http://magic.defra.gov.uk/).

2.2 WALKOVER SURVEY

A walkover of the site was undertaken (24.7.13) which identified habitats present following the standard 'Phase 1 Habitat Survey' method developed by the Nature Conservancy Council (JNCC 2003). This involves identifying areas or features either in terms of their botanical interest, and/or habitat potential for protected or other notable species. The Phase 1 Habitat Survey has been adapted in this instance as an 'extended' Phase 1 Habitat Survey, where information has been obtained to inform site assessment and extended for use in Environmental Impact Assessment (Institute of Environmental Assessment 1995). This involves the following elements:

- Description of features of ecological or nature conservation interest; noting the
- Dominant and characteristic plant species in each habitat.

2.3 BUILDING INSPECTION

A walkover of the site was undertaken (24.7.13) to establish features of interest, including any roost opportunities for bats within the workshops. This included a binocular inspection of the roof, soffits, weatherboarding and cills from the ground as well as an internal inspection where safe to do so.

2.4 BAT EMERGENCE SURVEYS

Two bat activity surveys were undertaken (24.7.13 and 14.8.13) using hand held recordable Bat Box 4 Frequency Division equipment, and static bat detection equipment,

notably an Anabat. Recordings were played through BatSound and Analook software and interpreted according to Russ (2012).

3.0 RESULTS

3.1 DESK STUDY

3.1.1 Biodiversity Action Plan

The London and Camden Biodiversity Action (LBAP and CBAP) contains HAPs and SAPs for the following habitats and species of relevance: Gardens and the Built Environment Stag Beetle and Bats.

The CBAP seeks:

- To implement good conservation practice to enhance parks and green spaces for nature, respecting their varied functions and the aspirations of users.
- To encourage improvement of private gardens as habitat for a range of wildlife.
- To raise awareness of the importance of gardens, parks and open spaces in the conservation of Camden's biodiversity.
- To enhance the built environment for biodiversity and improve ecological connectivity within the urban landscape.
- To encourage planners, developers and building owners to design for biodiversity and install features beneficial to wildlife.

  Specific aspirations within the Camden BAP for Bats are as follows:
- To identify the status and distribution of the bat species present in Camden
- To provide opportunities for roosting and foraging through sympathetic management of our landholdings and our sphere of influence.
- To increase awareness of bats and their importance.

3.1.2 Mammals

Several mammal species are recorded in the district including: foxes *Vulpes vulpes* and squirrels *Sciurus carolinensis.* Other mammal species include bats (see Table 1 below). Nine species of bat have been recorded within 2 km of the site. Roosts of both common pipistrelle bats *Pipistrellus pipistrellus* and soprano pipistrelle *Pipistrellus pygmaeus* are known within 500 metres. Daubenton's bats *Myotis daubentonii* are recorded navigating over the ponds at Hampstead Heath A ninth species, brown long-eared bat is known to roost at three sites within 1km.

Table 1: Status of bats recorded in the local catchment.

Species	Frequency	Main roosts sites
Common pipistrelle	Common	Buildings nearby (LBG) Roosts nearby
Soprano pipistrelle	Common	Buildings and trees especially near water (LBG). Large roosts nearby
Nathusius's pipistrelle	Rare	Buildings Trees roosted within the catchment but its local status is variable
Daubenton's bat	Relatively common at the Heath ponds	Trees, structures and underground sites in the local area. Roosts 1.5km
Natterer's bat	Hampstead Heath	Trees and structures
Noctule bat *Nyctalus noctula*	Becoming less common in London (Briggs 2007)	Known roosts nearby
Leisler's bat *Nyctalus leisleri*	rare	No known roosts in the area flight records only but early registrations
Serotine Eptesicus serotinus	Rare in London	A record from the Kenwood surveys, 2009
Brown long-eared bat Plecotus auritus	Becoming rare in London	Roosts at 3 sites nearby, difficult to detect in flight

Adapted from Mitchell-Jones (2007) LBG=London Bat Group records

3.1.3 Birds

Small garden birds are frequently recorded in the district, including robins *Erithacus rubecula*, blackbirds *Turdus merula*, and sometimes finches, especially goldfinches *Carduelis carduelis* and greenfinches *Carduelis chlori.* House sparrows *Passer domesticus* are becoming less common but are still recorded locally.

3.2 EXTENDED PHASE 1 HABITAT SURVEY RESULTS

3.2.1 Habitat features

The main JNCC habitat descriptions noted during the survey are below:

J3.6 Buildings and hard standing. This included workshops/sheds and paving and the following were noted:

- Cobbles
- Compost heap
- Self-sown trees (including buddleja growing out of roofs).

Table 2: Characteristic plant species recorded, 24.7.1

Scientific name	English name
Fraxinus excelsior	Ash
Pteridium aquilinum	Bracken
Dryopteris dilatata	Broad Buckler-fern
Buddleja davidii	Butterfly-bush
Hedera helix	Common Ivy
Urtica dioica	Common Nettle
Pentaglottis sempervirens	Green Alkanet
Phyllitis scolopendrium	Hart's-tongue
Geranium robertianum	Herb-Robert
Ilex aquifolium	Holly
Solanum tuberosum	Potato
Betula pendula	Silver Birch
Acer pseudoplatanus	Sycamore



Figs.1 and 2: Largest workshop (northernmost) and workshops 2 & 3

3.2 LARGE WORKSHOP

Occupying the northernmost portion of the site was the largest workshop. This was a part brick built and part wooden structure. Its exterior was part-rendered and part-clad, according to the various phases of development and alteration. It had a flat roof, which was part metal and part asphalt-saturated felt. The join between the two treatments had been breached in places and plants were growing in damp recesses, as the building deteriorated. Internally the building was split into compartments and these were inspected using a powerful torch. No bat droppings were found in the interior or exterior of the building. There was a felt overhang, which could be accessed by bats but this was heavily cobwebbed, indicating that it had not accessed. The building was thought to be of low potential for bats.

3.3 WORKSHOP AT THE SOUTH-EASTERN BOUNDARY

This is shown as one building on the OS map, but in fact is two buildings with pitched roofs separated by a deep valley from where broken drain pipes have allowed water ingress to the fabric of the building. In the photograph, a multi-stemmed tree marks the mid-point between the two structures. The eastern elevation has been buttressed and it was from here, that ferns were growing. Wooden cladding was used at the north facing elevations and the roof pitches were a mixture of metal, corrugated plastic and concrete asbestos sheeting. Internally the roof trusses were inspected for signs of perching bats, although the roof was open to the elements in places, which would mean that the building would be of low potential for bats. There was a large structural crack at the southern gable end, which could be of interest to bats in hibernation and it would be best demolished outside of the winter period.

3.4 LONG WORKSHOP AT WESTERN BOUNDARY

A brick building with a flat roof (refer to the photograph). This structure had two jack arches at the base of the eastern elevation, possibly adding ventilation to the floor. Along with a louvered door it is suggestive of a former use of a paint workshop, which has storage space under a canopy for 50% of its length to the rear. Here paint is stored and the canopy has been breached, by a build-up of leaves from trees growing at neighbouring properties. There were no signs of bat interest within this building, which was also deemed to be of low potential for bat interest.

3.5 FIRST BAT EMERGENCE SURVEY

During the first bat emergence survey (24.7.13) no bats were seen to emerge from any of the workshops. No bats were recorded, during the evening survey by the static bat detector or the handheld detector (refer to Table 3).

Table 3: Bat activity (24.7.13)

Sunset 21.00p.m. Cloud cover 5/8 .Temperature 20 degrees centigrade at start

Time	Details: Duet detector and Anabat at rear SW boundary
	No bats throughout the evening

3.6 SECOND BAT EMERGENCE SURVEY

During the second bat emergence survey (13.8.13) no bats were seen to emerge from any of the workshops. One common pipistrelle bat was recorded during the evening survey on the handheld detector foraging along the neighbouring garden. There were four feeding passes and then no further bat activity was detected for the remainder of the survey.

Table 3: Bat activity (13.8.13)

Sunset 20.25 p.m. Cloud cover 0/8 .Temperature 16 degrees centigrade at start

Time	Details: Duet detector and Anabat at rear SW boundary
21.05	Common pipistrelle arrived at the site (sunset+ 40 mins)

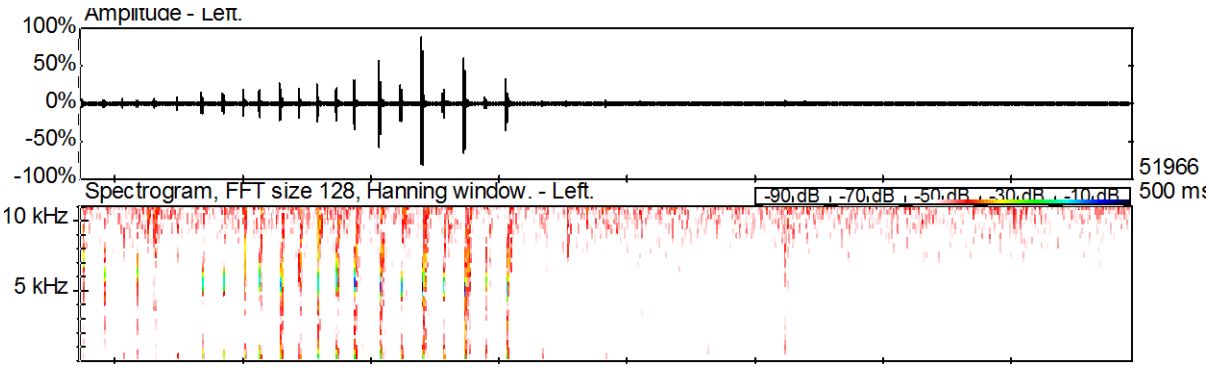


Fig.4 Screenshot of the sonogram of a common pipistrelle bat foraging along neighbouring gardens

4.0 DISCUSSION

4.1 BAT SPECIES

During the second survey only, a common pipistrelle was detected foraging along the site boundary. The bat activity was very low and this, the only bat recorded, arrived late at the site indicating that it had travelled some distance from its roosting place. The "common" pipistrelle has been split into two separate species *Pipistrellus pipistrellus* that echolocates around 45 kHz and *P. pygmaeus* that calls around 55 kHz. Emergence of both species is usually twenty minutes after sunset. The 45 kHz pipistrelle can use a wide range of habitats, but frequents the more open situations, such as woodland edges, parkland, recent plantations, watersides and gardens. It will fly up to 5km from the roost

to forage but most stay with 2km. Colonies, usually of 30-60 bats; they frequently use modern building for roost sites, but are rarely found in bat boxes.

4.2 VEGETATION

Mature vegetation is important for bat navigation and it also retains the insect prey that the bats forage upon. Strengthening of the vegetation is desirable and is of benefit to other species. Treelines are used by bats for a variety of functions such as:

- commuting routes: in order to avoid open areas;
- cover: especially during the early part of the evening and in urban centres where light levels are high; and
- foraging areas: the trees are both an insect breeding habitat and offer a sheltered microclimate.

Bat use of the tree canopy will vary according to the weather conditions: during a windy period, bats are less likely to forage in the open especially over water and will confine their foraging to the tree canopy.

4.3 GREEN ROOF

This is a small site and any ‘vegetation’ might be best encouraged by way of a ‘green’ or ‘biodiversity’ roof, whilst remembering that the site is heavily shaded from offsite trees. This may mean layering of various substrates such as sand, logs and shingles, will encourage a variety of local flora to naturally colonise, such as the ferns which were the most interesting plants on the site. However, an easy route to the roof for annual maintenance will be essential to clear of budleja and sycamore seedlings as well as the autumn build-up of leaves.

4.4 LIGHTING

Any proposed development should consider the impact of lighting on habitats utilised by bats, as per Bat Conservation Trust & Institution of Lighting Professionals. Smarter lighting, rather than less lighting, is key to mitigating the effects of light pollution. Light should only be erected where it is needed, illuminated during the time period it will be used, and at levels that enhance visibility. Any bare bulbs and any light pointing upwards should be eliminated. The spread of light should be kept near to or below the horizontal. Narrow spectrum bulbs should be used to lower the range of species affected by lighting and light sources that emit ultra-violet light must be avoided. For pedestrians, low level

lighting that is directional as possible should be used and below 3 lux at ground level (preferably 1 lux BCT, 2012).

4.5 BIRDS

The value of the survey site for (nesting) birds is generally considered to be low as none were noted. However it could be suitable for birds that sometimes use buildings such as robins and wrens. The destruction of any bird nests that are in use is illegal. The simplest option is to schedule work that affects nesting habitat (e.g. felling of trees, removal of shrubs and other vegetation) outside the nesting period (March to August inclusive).

4.6 PLANNING POLICY

The National Planning Policy Framework (DCLG, 2012) seeks development to achieve net biodiversity gain. As such, consideration should be given to enhancing the ecological value of the survey site (with regards habitats/ flora) in association with any proposals. Where possible such enhancements should consider habitats/ species which are included within the LBAP and CBAP.

5.0 RECOMMENDATIONS

- The workshops should be demolished as soon as possible;
- Bat surveys are ‘time limited’ to this year only and may need to be repeated if demolition is not achieved by April, 2014;
- Winter demolition should be avoided due to certain features of the structures which might make them attractive to hibernating animals;
- A green/biodiversity roof could be a positive enhancement to the scheme;
- Bat tubes could be installed on the south-western elevation of future building(s);
- Current lighting provision should not increase; and
- Demolition or disturbance of vegetation during the bird breeding season should be avoided.

6.0 LEGISLATION AND POLICY

6.1 EUROPEAN AND UK LAW PERTAINING TO BATS

All species of bat are fully protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion in Schedule 5. All bats are also included in Schedule 2 of the Conservation (Natural Habitats, & c.) Regulations, 2010. The Act and Regulations make it illegal to:

- intentionally or deliberately kill, injure or capture (take) bats;
- deliberately disturb bats (whether in a roost or not);
- damage, destroy or obstruct access to bat roosts;
- possess or transport a bat or any other part of a bat, unless acquired legally; or
- sell, barter or exchange bats or parts of bats.

6.2 AMENDMENTS TO THE CONSERVATION OF HABITATS REGULATIONS (2010)

Moves to strengthen the protection of features of importance that protected species are reliant upon. This applies where there may be ANY disturbance to bats or a disturbance affecting:

- The ability of a group of animals of that species to survive, breed or rear or nurture their young;
- In the case of migratory species, impair their ability to hibernate or migrate or
- The local distribution or abundance of the species

This may preclude fragmentation of corridors caused by **light pollution** and a useful discussion of this is provided by Garland and Markham (2007). If a bat roost is to be affected by development activities, a licence from Natural England will need to be obtained.

6.3 NATURAL ENVIRONMENT AND RURAL COMMUNITIES (NERC) 2006

This states that every public authority in exercising its function, must secure compliance in conserving biodiversity

(3) Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.

(4) "Public authority" means any of the following (c)a public body (including a government department, a local authority and a local planning authority);

Within the terms of this act are habitats and species of principal importance for the purpose of conserving biodiversity.

6.4 UK HABITATS AND SPECIES OF PRINCIPLE IMPORTANCE NERC 2006 AND THE ROLE OF CONSERVATION UNDER BIODIVERSITY ACTION PLANS (BAPS)

Section 40 (1) of the NERC Act (2006): lists principle habitats and species, which are often included in Local, Regional and National Biodiversity Action Plans (BAP's). For example, the UK Biodiversity Action Plan (BAP) contains a Bat Species Action Plan (SAP). The BAP aims to increase the number of this species within the district by protecting certain habitats; securing appropriate management for them and by halting the factors leading to their decline such as:

- Loss of maternity roost sites through damage or destruction resulting from a lack or a misunderstanding of the legislation protecting bats ;
- Loss of hibernation and other seasonally used roost sites;
- Lack of insect rich feeding habitats such as wetlands, woodlands and grasslands;
- Losses of linear landscape elements (flight line features) such as tree lines; and
- Excessive lighting, such as in streets and some open spaces.

7.0 REFERENCES

Author's data 2001-2012

Bat Conservation Trust (2012) Bat Survey Guidelines available from www.bats.org.uk

Briggs, P.A., Bullock, R. J., Tovey, J., (2007) Ten years of bat monitoring at the WWT London Wetland Centre, compared with National Bat Monitoring Programme trends for Greater London, London Naturalist no 86 London Natural History Society

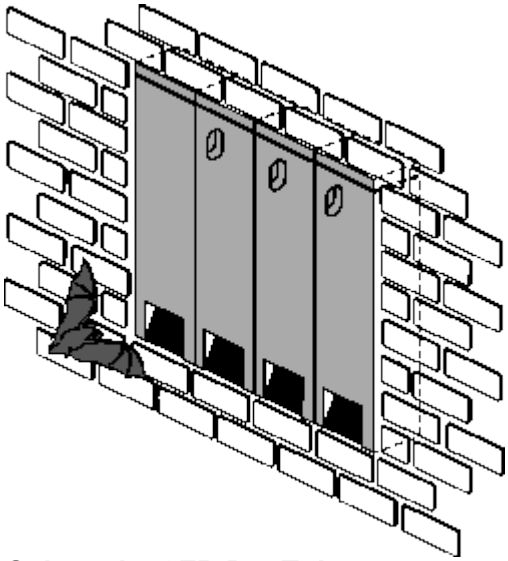
Garland L., & Markham S., (2007) Is important bat foraging and commuting habitat legally protected?

Mitchell –Jones A.J. & McLeish A. P. (Ed's). (2004) 'Bat workers Manual' JNCC

APPENDIX

BAT TUBES

Bat tubes provide an access slot of dimension 100 x 15mm between the soffit and the wall at the roof apex at various locations in the new building. Note that if the dimensions are smaller the bats will not be able to access the new roost and if they are any larger birds may move in. The exterior brick or stone work will be of a rough material to assist bats to grip when landing and entering roosts.



Schwegler 2FR Bat Tube

Stockist - NHBS, Pearce Environmental

The tubes have holes in the sides which allow multiple tubes to be placed next to each other to form a much larger bat roost. Brick boxes are designed for buildings, or underneath bridges, arches or tunnels, where conditions are relatively humid. They are particularly useful for new buildings or bridges to attract bats, or to provide new roost sites where existing buildings with bats are being renovated. This long box can be installed within brick masonry, beneath plasterwork or wood panelling, or incorporated into concrete structures such as factory buildings or bridges. Inside it contains a woodcrete surface, a roughened wood board, and a metal mesh, providing a choice of roosting areas depending on the weather conditions and the bats' habits

Bats can have direct access to roof area via a “Bat Access Tile‟. A Klober Small Slate Vent Tile‟ (see below) provides a good access point– the back of the tile can be cut out to allow access for bats.

Schwegler woodcrete boxes have the highest rates of occupation of all box types. The 75% wood sawdust, concrete and clay mixture allows natural respiration, stable temperature, and durability. They are extremely long lasting and rot- and predator-proof. Hang from a tree branch near the trunk, or fix to a trunk with the supplied 'tree-friendly' aluminium nail. The 2F is the most popular general purpose box, particularly attractive to the smaller British bats e.g. Pipistrelles. A simple design with a narrow entrance slit on the front.

Material: Woodcrete (75% wood sawdust, concrete and clay mixture)
Diameter: 16cm. Height: 33cm, Weight: 4kg