Lighting Strategy
29 St. Edmunds Terrace

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Document information

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Introduction

Overview
Eight Versa has been appointed to produce a lighting strategy for the proposed development at Barrie House, 29 St. Edmunds Terrace, London, NW8 7QH, hereinafter referred to as 'the site'. The site is centred on National Grid Reference TQ274835. Current proposals for the site comprise the extension of the existing Barrie House development, to provide nine new residential units over a four to five-storey development (including one basement storey).

Eight Versa (previously Eight Associates) were appointed in 2019 to produce a Preliminary Ecological Appraisal[1] to inform the planning application for the site which has been used to inform this report.

A planning application (ref. 2018/0645/P) has been submitted to the London Borough of Camden subject to a number of planning conditions. Planning condition 26 relates to a lighting strategy, to provide full details of a lighting strategy detailing how it will minimise impact on wildlife. This report has been prepared to discharge planning condition 26 which states:

'Prior to commencement of development, full details of a lighting strategy shall be submitted to and agreed in writing by the local planning authority. The strategy should demonstrate how it will minimise impact on wildlife in line with best practice outlined in the Institute of Lighting Professionals & Bat Conservation Trust Guidance Note 8/18 Bats & Artificial Lighting in the UK, and with the recommendations in 3.9 of the Ecological Appraisal.'

Site Description
The site consists of two connected apartment blocks that together make up Barrie House. An associated car parking area is also present, along with a rear garden comprising modified grassland with several mature trees and sections of introduced planting. The site is located on the southern border of the London Borough of Camden, surrounded by residential buildings. Two large green spaces - Primrose Hill Site of Importance for Nature Conservation (SINC) and Regent's Park SINC can be found to the north and south-east of the site respectively.

The site has sub-optimal potential for protected/priority species, providing sub-optimal opportunities for foraging and commuting bats, low bat roosting potential within two trees being retained and nesting birds potential only, although it is not expected that any population of species would be reliant on the site alone.

Site Proposals
The proposals for the site include the construction of a new building which will adjoin the existing building onsite with associated car parking and landscape planting. Parts of the amenity grassland and existing trees will be retained and protected as part of the proposals. The habitats post-development will comprise:

- Building and hardstanding – new building and car parking, access and pedestrian walkways across the site;
- Amenity planting - native and non-native introduced shrub and climbing and trailing species planting across the site;
- Trees – trees onsite have been retained where possible to retain these ecological features, provide screening and soften neighbouring properties. New native tree planting will also be undertaken;
- Bulb planting – planting of native bulbs within grassland beneath the retained and newly planted trees;
- Amenity grassland – communal lawn areas for new residents;
- Hedgerow – new and retained hedgerow planting around the boundary of the site; and
- Private garden planting – new residents private terrace planting, including planters.

[1] Eight Versa (2019). Preliminary Ecological Appraisal Report – Barrie House.

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Lighting Strategy

Lighting on the site will be designed to be sensitive to bats. This includes retaining and enhancing the trees along the north-eastern and north-western boundaries of the site and preventing any additional light shining on these features, creating a dark corridor for bat movement and retaining connectivity between Primrose Hill SINC and Regent's Park SINC. Bat species expected to be present include more light tolerant species such as soprano pipistrelle *Pipistrellus pygmaeus* and common pipistrelle *P. pipistrellus*. Both species are opportunistic and are known to forage around artificial lighting[2].

The aims of the lighting design will be to have no increase in current light levels on the site along the north-eastern and north-western boundaries and to design all lighting onsite in line with the Bat Conservation Trust (BCT) – Bats and artificial lighting guidance note[3].

The site is already considered to have relatively high levels of lighting associated with the current building and street lighting along Broxwood Way along the south western boundary and St. Edmunds Terrace along the south eastern boundary. The proposed development will be located within the existing car parking area of the site with access off Broxwood Way with the majority of the trees being retained. The site is currently lit by low level bollard lighting around the entrance to the site and security lighting attached to the existing building.

Lighting will be focused on pedestrian zones, car parking areas and access onto the site to improve public access. For security and safety 'Lighting of the external area should meet BS5489-1:2020[4] and be operated on a 'dusk till dawn' system to allow for a continually light during the night to a 40% uniformity. LED (light emitted diodes) lighting is recommended, positioned to a height that cannot allow for tampering'[5]. This includes using warm LED lights with hoods, baffles and shields to direct light away from retained and newly created habitats and ecological features including bat and bird boxes. Some examples of lighting suitable for the site are shown in below and consideration for choosing luminaires are detailed in Appendix A.

The use of LEDs emits a more directional and controlled light which is produced in a narrow beam. This can be focused on the required feature to be illuminated and prevents spillage onto the surrounding area. The lighting onsite will all be 'warm white' lights around 2700°K and a peak wavelength of >550 nm to reduce the lumen output and avoid the component of light which most disturbs bats. Although the lighting will be focussed around the front of the building, shields, hoods and baffles will be used on lighting which has the potential to spill onto retained or newly planted vegetation. It is expected that both the new and retained building will provide a barrier to lighting around the front of the building. St. Edmunds Terrace is a tree lined street which will also provide partial barriers to lighting and will continue to provide connectivity to the site and commuting and foraging opportunities for bats.

If any lighting is proposed along the north-eastern or north-western aspect of the building, this will be directional, facing towards the building with shields, hoods and baffles and set with motion-sensors with a short timer (1 – 2 minutes), downward facing wall lights set into the building or low-level bollard lighting with a hood to prevent light spill on the retained trees and be dark when not in use. No lighting will be placed within or directed towards the trees.

Lighting from the internal stairwell will be minimised by motion-sensors and low transmission glazing treatment on both sides of the windows, particularly on the lower levels and north-eastern aspect of the building adjacent to the retained trees. The stairway is located within the existing building on the site and over 14m from the retained trees. With the glazing and lighting proposed, it is expected that light levels around the stairway will be no higher than current levels and will not be directly illuminating the retained trees.

The trees along the north-eastern and north-western boundaries are being retained as dark corridors which will continue to provide foraging, commuting and roosting, if present, opportunities for common species of bats which would be expected on the site and within the local area. Light levels in this area will be similar or no higher levels than currently present, continuing to provide connectivity along this corridor for fauna.

Two bat boxes have been proposed on the building which will provide increased opportunities for roosting bats on the site and these will be installed in areas close to the retained vegetation.

With the lighting designed sensitively for bats, including retaining the trees within the northeast and northwest of the site, it is anticipated that fauna, including bats, can continue to use the site for foraging, commuting and roosting, if present. Light spill will be reduced by using lighting sensitive to bats and guided by the BCT guidance note and the use of shields, baffles and hoods were required. Light levels along the north eastern and north western aspect will be retained at no higher levels than currently onsite which will continue to enable connectivity fauna, including bats.

[2] BCT (2022) Lighting. Available at: https://www.bats.org.uk/about-bats/threats-to-bats/lighting
[3] BCT (2018) Bats and artificial lighting in the UK – Bats and the Built Environment series. Guidance note 08/18
[4] British Standards Institution, BSI (2020) Design of road lighting - Lighting of roads and public amenity areas. Code of practice.
[5] Carbogno Ceneda Architects (2022) Barrie House Design and Access Statement – Part 6

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Lighting Design

External lighting

As detailed above, lighting on the site will be designed to minimise impacts to foraging and commuting bats which may be using the site. A number of proposed luminaire designs have been included within this section of the report. These or a similar design should be incorporated into the scheme.

Types of Lighting (or similar)

Mono II LED

The Mono II LED light is designed to be installed on flat surfaces including exterior walls. With the direction of the bulb, the lighting is narrowed and directed downwards onto the building surface, reducing light spill above the light.

Kix M Pin

The Kix M Pin stands at approx. 6.6m and will be installed within the car parking area. The head of the light is directional with a narrow beam width focusing lighting on the required area. Light spill behind the light is minimal which is preferably, particularly adjacent to the retained trees.

External Bollard with Downward Direction Light

The Oblix R light will be installed along pedestrian zones and around the access onto the site to improve public access. These are designed for low level, downward lighting, directional light to reduce light spill above the light.

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Appendix A – Artificial Lighting for Bats

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.

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Validation

Report produced by Rachel Whitham:	
Ecologist's Qualifications:	MSc – Ecology and Evolutionary Biology BSc - Zoology
Evidence of practicing Ecologist	Eight Versa, Assistant Ecologist (September 2021 to present), Eight Versa, Seasonal Ecologist (May 2021 – September 2021).
Professional Membership	Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Report verified by Sara Curtis:	
Ecologist's Qualifications:	BSc – Environmental Science MSc – Environmental Consultancy (Biodiversity and Conservation)
Evidence of practicing Ecologist	Eight Versa – Principal Ecologist and Sustainability Consultant specialising in Ecology (2022 to present date), Senior Ecologist (2018 – 2021), Ecologist (2013 – 2018)
Professional Membership	Full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Validation	
I confirm the information provided in this document is truthful and accurate at the time of completion.	
Suitably Qualified Ecologist	Sara Curtis
Signature of Ecologist	SNC
Date	14/11/2022