17 Charterhouse Street, London

Bat and Bird Box Specification

February 2020

Job No. 6159.4

Contact:
Sunyea Naheem
Wates Construction Limited
140 Saffron Hill,
London, EC1N 8QN
E-mail: Sunyea.Naheem@wates.co.uk

The Ecology Consultancy
Tempus Wharf
33a Bermondsey Wall West
London SE16 4TQ
Email:
John.Myerscough@ecologyconsultancy.co.uk
Tel: 0207 378 1914

Client: Wates Construction Limited

Approved by: Wendy Mcfarlane MA MSc MCIEEM

Date: 12 February 2020

Written by: John Myerscough BSc, MSc

1 INTRODUCTION

Background

1.1 The Ecology Consultancy was commissioned by Wates Construction Limited to make recommendations for the positioning of a number of bat tubes and bird boxes within the site at 17 Charterhouse Street, London Borough of Camden.

1.2 Planning permission for the site has been granted (Planning reference 2017/4586/P) and is subject to the following condition which relates to ecology:

'**Condition 14:**
Prior to first occupation of the development a plan showing details of bird and bat box locations and types and indication of species to be accommodated shall be submitted to and approved in writing by the local planning authority. The boxes shall be installed in accordance with the approved plans prior to the occupation of the development and thereafter retained.'

1.3 This report provides details on the number, type/model, location, installation/attachment method and maintenance of bird nesting and bat roosting boxes to be included within the development on site. A plan showing the location of boxes is included in Appendix 1. Legislation applying to roosting bats and breeding birds is outlines in Appendix 2 of this report.

Site Context and Status

1.4 The development site is approximately 0.49 hectares (ha) in size and is centred on National Grid reference TQ 282 967. The site is located at Charterhouse Street in the London Borough of Camden.

1.5 The site comprised buildings and hardstanding with small areas of introduced shrub present within raised planters in a hardstanding courtyard. A full description of the habitats present on site can be found in the Preliminary Ecological Appraisal Report (The Ecology Consultancy, 2017). Courtyard and terrace planting will be included within the designs for the proposed development of the site.

2 TARGET SPECIES

Birds

2.1 Bird species of principal importance to the conservation of biodiversity, and identified within the London and Camden Biodiversity Action Plans (BAPs) (Camden, 2013), for which the site could provide suitable habitat include: House sparrow and swift.

2.2 Boxes for these two species have been chosen due to their status as declining species of conservation concern. House sparrow are a Species of Principal Importance for Biodiversity in England and both house sparrow and swift are Camden BAP species. Furthermore, there are records for both these species in the area (The Ecology Consultancy, 2017) and therefore could be encouraged to the site.

Bats

2.3 Boxes to attract common pipistrelle and soprano pipistrelle bats have been specifically chosen as these species are known to utilise domestic buildings and are also of conservation concern. Estimates from the National Bat Colony Survey suggest that pipistrelle species have undergone a population decline of approximately 70% between 1978 and 1993 (SBP, 2011). All bat species are London and Camden BAP Priority Species. Soprano pipistrelle is also a Species of Principal Importance for Biodiversity in England.

2.4 Bats are European Protected Species protected by the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017 (as amended) (see Appendix 3).

3.0 SPECIFICATIONS

Approach

3.1 Boxes will be integrated into the building structure, and incorporated into the new development. The integrated system requires less maintenance, is more durable with a life span equal to the building's fabric and with a less visible alteration to the building.

3.2 Each bird and bat species require different box types with different designs, sized opening and positioning. The table in Appendix 2 shows the requirements of each species and the optimum location and positioning for each box.

4 GUIDELINES

4.1 The following ecological and design requirements were considered in choosing the type, location, orientation and number of bird boxes:

- Boxes will have no impact on the building's performance;
- Grouping of bat boxes on buildings to increase uptake by communal species;
- The use of a terrace type house sparrow box to maximise uptake by these colonial nesting species;
- Locating swift boxes on aspects out of direct sunlight *viz*. N, NW and NE, built in under eaves/soffits (if present) for increased protection from the elements and away from predators (cats, magpies, squirrels, rats) and vandalism;
- Avoiding (where possible) locating boxes on front elevations of buildings, above windows/balconies or where boxes are easily overlooked/disturbed or in close proximity to mechanical outlet extractors;
- Avoiding locations likely to be subject to increased light levels; and
- Locating bird boxes in close proximity to green space and potential foraging habitat.

5 BOX TYPES

Birds

Swift

5.1 Swifts are a bird species that are commonly associated with urban areas. For many years they have depended on the voids in roof structures for nesting, but their populations are now in serious decline. This is partly because of problems they face in finding nest places in modern designed buildings e.g. roof tiles are replaced with modern equivalents or flat roofs, and wooden soffits replaced with uPVC. Swifts are an Amber List Bird of Conservation Concern (BoCC4)1 (Eaton et al., 2015) species.

[1] Birds of Conservation Concern status is prioritised into high concern (Red), medium concern (Amber) and low concern (Green) (Eaton *et al*, 2015). Red-list species are those that are globally threatened according to the IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a substantial recent recovery. Amber-list species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations. Green-list species are those that fulfil none of the criteria.

5.2 Fortunately, swift nest boxes and nest bricks can be built into walls and these are self-contained and self-maintaining, and can be incorporated into the building design with no impact on the building's performance (see examples below). Integrated features are preferable as these have potentially more stable thermal qualities than boxes attached to the exterior of the new build. Schwegler boxes are recommended as these can be integrated into the external fabric of the building (see examples below).

Schwegler 17A swift nest box (triple cavity)

House Sparrow

5.3 House sparrows have suffered large declines in their numbers over recent years, and the loss of nest sites through redevelopment and refurbishment may be partly responsible. Nest boxes specifically designed for this species are available, which provide for the colonial nesting of two or more pairs (see example below). House sparrow is a Species of Principle Importance and Red List BoCC4 (Eaton et al., 2015).

5.4 Schwegler 1SP integrated terrace style nest boxes are proposed to be included on the development, which include multiple nesting boxes per unit and are ideal for the social nature of the house sparrow.

Schwegler 1SP House Sparrow Terrace

Bats – Crevice dwelling

5.5 Man-made roosts can provide stable micro-climates for bats. Loss of natural roosts has increased the importance of man-made structures for bats to the point that artificial roosts are becoming essential for the survival of many bat species.

5.6 There are numerous styles and designs of bat boxes that can be positioned on buildings both externally and internally. Schwegler 1FE bat access panels with back plates are proposed to be included on the development, which are fully integrated (see below).

Schwegler 1FE bat access panel with optional back plate

5.7 These boxes are designed with an angled internal floor allowing droppings to fall out of the entrance slot, removing the need for cleaning (by licensed bat ecologists), and creating a surface for bats to grip and enter. The back plate is required and creates a cavity wall inside the box with a roughened surface for bats to grip and move around.

5.8 It can be faced with a number of products to suit the design build including, brick, block, stone, wood or a rendered finish, ensuring the box is unobtrusive and aesthetically pleasing.

6 LOCATION & NUMBER

6.1 To provide suitable nesting possibilities for each of the target species the following quantity of boxes for each species will be included within the proposed development:

Integrated boxes

1 x Schwegler 1SP house sparrow terrace

1 x Schwegler 17a swift nest box

2 x Schwegler 1FE bat box with back plate

6.2 The positioning of each box follows the requirements for each target species in accordance with the Design for Biodiversity guidelines (Gunnell *et al*., 2013).

BIRDS

Swift

6.3 The swift box (Schwegler 17A) will be positioned as close to roof level as possible on the southern elevation of the Bleeding Heart Yard building adjacent the site (see Appendix 1, Figure 2). This elevation allows the highest uninterrupted drop from the boxes and has a immediately below roof level that is devoid of windows and therefore presents the least amount of disturbance both to the birds and residents. It is also located adjacent to the courtyard area to the west of the site which may provide foraging opportunities for this species.

House sparrow

6.4 There will be one terrace box (Schwegler 1SP) with three nesting holes positioned on the northern elevation of the building (see Appendix 1, Figure 1). This elevation has a space at the east that is devoid of windows and therefore presents the least amount of disturbance both to the birds and residents. It is also located above the biodiverse roof and adjacent to the courtyard area to the west of the site which may provide foraging opportunities for this species.

Bat – Crevice dwelling

6.5 Two integrated bat boxes (Schwegler 1FE) will be positioned within the southern elevation of the Bleeding Heart Yard building adjacent the site (see Appendix 1, Figure 2). The boxes will need to be positioned as high as possible (minimum of 5m), close to the roof line, underneath any gutters to allow maximum uninterrupted drop from the box.

6.6 The southern elevation of the site was chosen as it is located above the courtyard area, which provide suitable foraging habitat. Positioning the bat boxes on the southern elevation will also ensure that there is an uninterrupted drop from the bat

box. The recommended integrated box design is likely to be more sheltered from strong winds and will have more stable thermal qualities than external box types.

6.7 Due to the size of the site, and the location within an intensively urban area with limited foraging opportunities, it is considered that two boxes will be sufficient for a site of this size.

7 MAINTENANCE

7.1 Any building works in the vicinity of the bird boxes, or maintenance to them, will be timed to avoid breeding periods, which are as follows; common nesting birds March-August (inclusive) (Newton *et al*. 2011).

7.2 House sparrow nest boxes will be cleaned out on an annual basis (or at least bi-annually) at the end of the breeding season (autumn-winter), removing the old nests, dead birds etc.

7.3 The design of the bat box means that cleaning and maintenance of them is not required. However, if there is need for any disturbance this must be carried out by a licenced bat ecologist.

7.4 Fixings/attachments of all boxes will be checked for safety and effectiveness on an annual basis (autumn-winter), where applicable.

7.5 The access/egress points on the boxes must not be obscured by vegetation or other obstructions. Bats and birds will cling to the surface immediately beneath the egress/ingress before accessing the box, so it is important that this area remains clear.

7.6 Artificial lighting must not directly illuminate the bird and bat boxes to be installed as part of the development. Lighting recommendations (See Appendix 3) should be incorporated into the design in order to improve the likelihood of bats utilising these boxes and increase levels of bat activity in the vicinity.

8 REFERENCES

Bat Conservation Trust (2018*). Bats and artificial lighting in the UK: Bats and the Built Environment Series*. Guidance note 08/18.BCT (2008). Bats and lighting in the UK – *Bats and the built environment series.* http://www.bats.org.uk/publications_download.php/243/BATSANDLIGHTINGINTHEUKJan08.pdf

Camden Council (2013). *Camden Biodiversity Action Plan 2013 – 2018*. Available at: https://www.camden.gov.uk/documents/20142/2205931/Camden+Biodiversity+action+plan.pdf/ab6c69bc-3769-3719-5481-a7fbc22555ce

Du Feu, C. (1989). BTO Guide 20: Nest Boxes. British Trust for Ornithology

Eaton, M.A., Aebischer, N.J., Brown, A. F., Hearn, R., Lock, L., Musgrove, A.J., Noble, D., Stroud, D., Gregory, R. (2015). Birds of Conservation Concern 4: The Population Status of Birds in the United Kingdom, Channel Islands and the Isle of Man. British Birds 102, pp296–341. [on-line]. Available from http://www.britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf

Fure, A. (2006) *Bats and Lighting*. The London Naturalist, No. 85.

Gunnell, K. Murphy, B. & Williams, C. (2013) *Designing for Biodiversity: A Technical Guide for New and Existing Buildings – 2nd Edition*. RIBA Publishing, London. Gunnell, K., Grant, G. and Williams, C. (2012) *Landscape and Urban Design for Bats and Biodiversity*. Bat Conservation Trust, London.

Jones, J (2000). *Impact of Lighting on Bats*. Bat Conservation Trust, London.

Ministry of Housing, Communities and Local Government (2019). National Planning Policy Framework. Ministry of Housing, Communities and Local Government, London. Available from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/779764/NPPF_Feb_2019_web.pdf

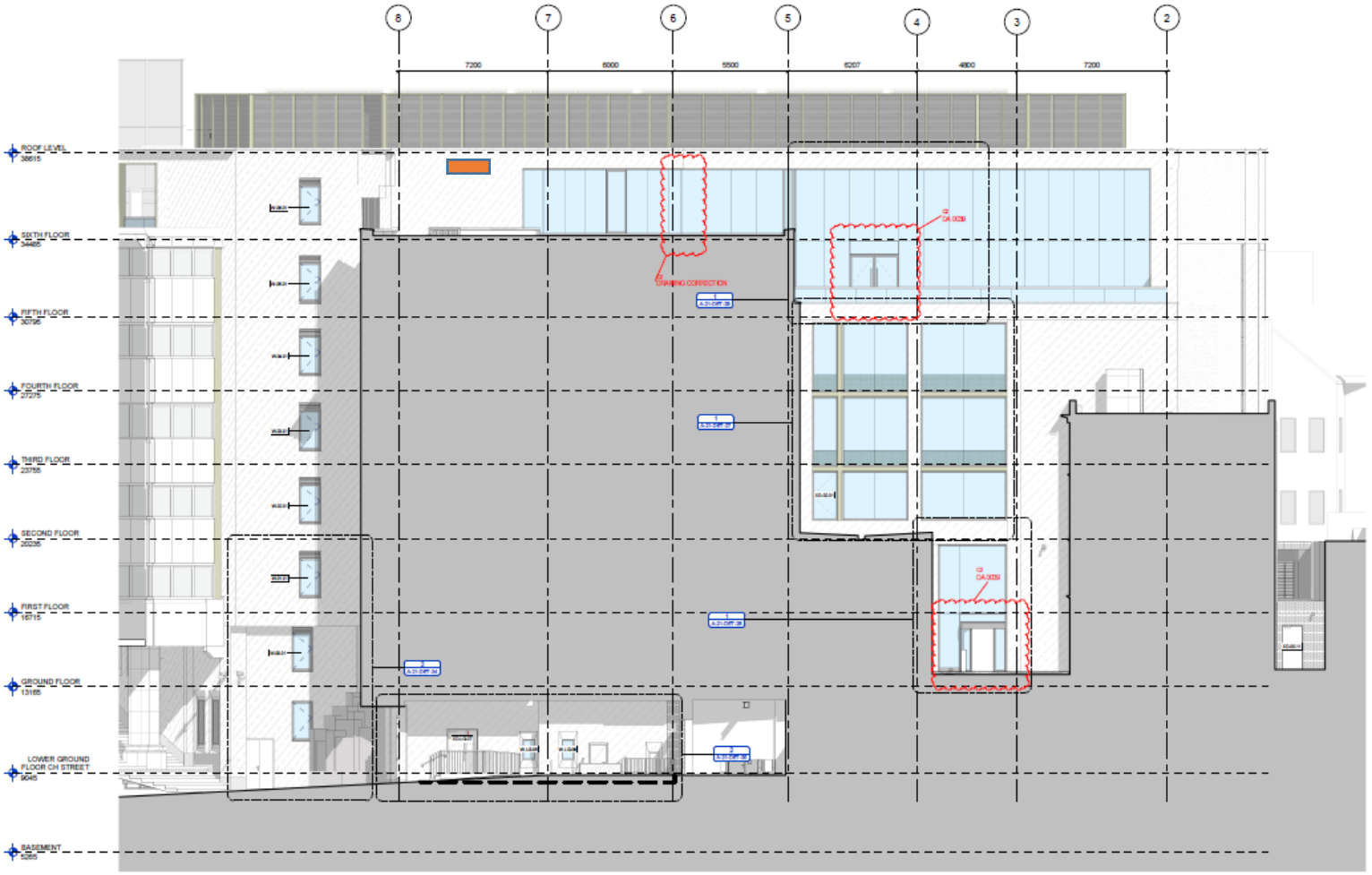
Schwegler (2010). Available from www.schwegler-natur.de

The Ecology Consultancy (2017). *17 Charterhouse Street, London. Preliminary Ecological Appraisal.* Report for Burke Hunter Adams LLP.

The Mayor of London's Office and the Biodiversity Partnership (2007) *London Biodiversity Action Plan*

Appendix 1: Proposed plans

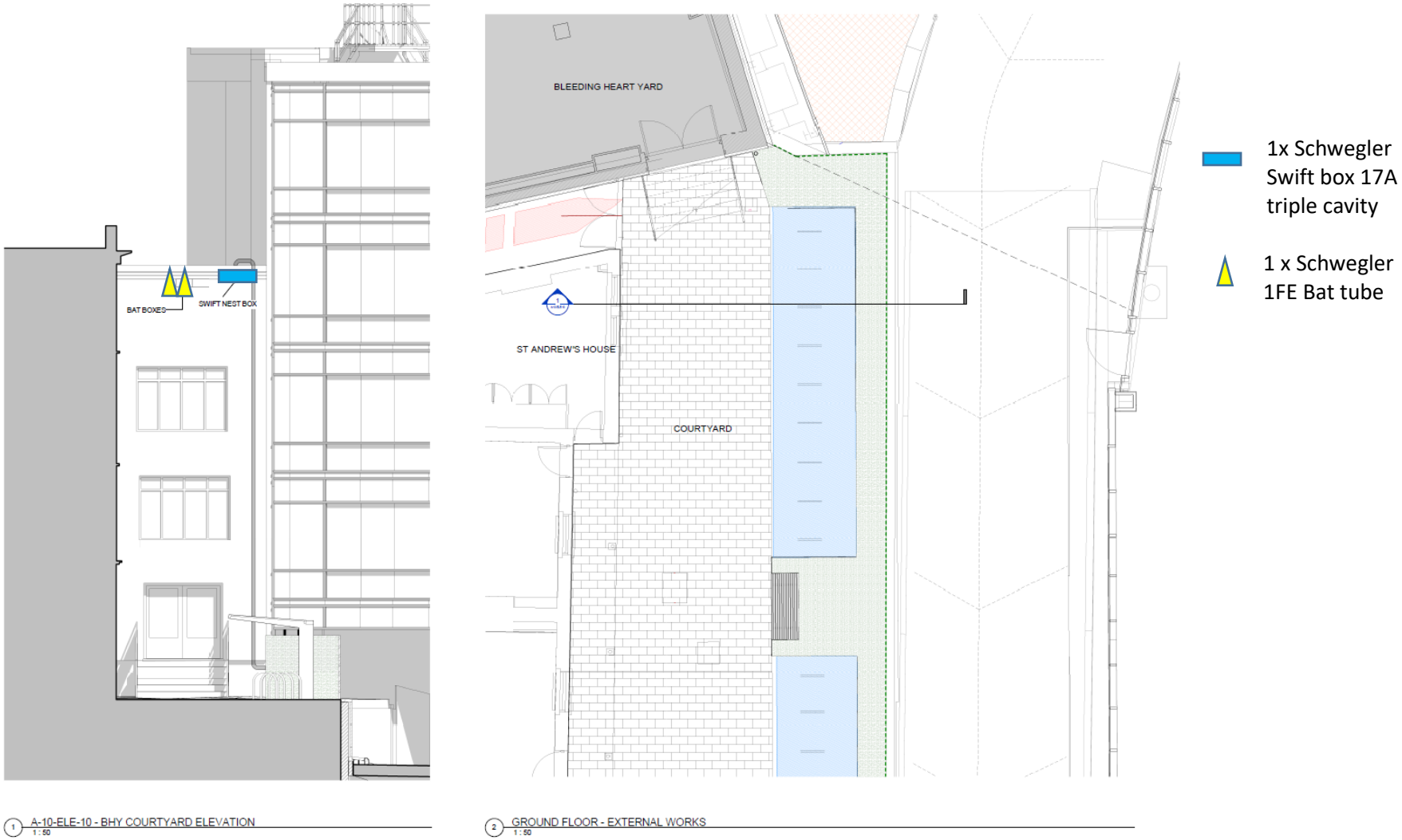
Figure 1 : Northern elevation of proposed new building, showing location of house sparrow terrace nesting box



1 x Schwegler 1SP House Sparrow Terrace

Northern Elevation

Figure 2 : Southern elevation of Bleeding Heart Yard building, showing location of bat roosting tubes and swift box



Southern elevation of Bleeding Heart Yard building

Appendix 2: Legislation

BATS

All species of bat are fully protected under The Conservation of Habitats and Species Regulations 2017 (as amended) through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. all bats)
- Deliberate disturbance of bat species as:

  a) to impair their ability:

  (i) to survive, breed, or reproduce, or to rear or nurture young;

  (ii) to hibernate or migrate

  b) to affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place (strict liability)

Bats are also currently protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. This is subject to the defence: incidental result of an otherwise lawful operation. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance of an animal or obstruction of access to any place of shelter or protection,

The NERC Act 2006 states that 'every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity', otherwise known as the Biodiversity Duty. Under Section 41 of the Act, the Secretary of State must publish a list of the living organisms and types of habitat which in the Secretary of State's opinion are 'Species of Principal Importance for the purpose of conserving Biodiversity' (SPIBs). This list is based on priority species recognised by the UK Biodiversity Action Plan (BAP), and in addition to Annex II species listed under The Conservation of Habitats and Species Regulations 2010 (as amended). The S41 SPIBs list replaces the list published under Section 74 of the Countryside and Rights of Way (CRoW) Act 2000 as those species of material consideration to the planning process.

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

A European Protected Species Mitigation (EPSM) licence issued by the relevant competent authority (e.g. Natural England) will be required for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant

legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

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

BIRDS

With certain exceptions, all birds, their nests and eggs are protected under Sections 1-8 of the Wildlife and Countryside Act 1981 (as amended). Among other things, this makes it an offence to:

- Intentionally kill, injure or take any wild bird
- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built
- Intentionally take or destroy an egg of any wild bird

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

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

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

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

Appendix 3: Best Practice Lighting Recommendations for Bats

Lighting

The following mitigation strategies have been taken from Bat Conservation Trust Landscape and Urban Design for Bats and Biodiversity (Gunnell *et al*., 2012) and other referenced sources:

- Minimise light spill by eliminating any bare bulbs and upward pointing light fixtures. The spread of light should be kept near to or below the horizontal plane, by using as steep a downward angle as possible and/or shield hood. Flat, cut-off lanterns are best;
- Use light sources that emit minimal ultra-violet light (Langevelde *et al*., 2001) and avoid the white and blue wavelengths of the light spectrum, so as to avoid attracting insects and thus potentially reducing numbers in adjacent areas, which bats may use for foraging;
- Limiting the height of lighting columns to eight metres and increase the spacing of lighting columns (Fure, 2006) can reduce the spill of light into unwanted areas such as the aforementioned habitats;
- For pedestrian lighting, low level lighting that is directional and below three lux at ground level, but preferably below one lux should be used;
- Use embedded road lights to illuminate the roadway and light only high-risk stretches of roads (crossings and junctions);
- Avoid using reflective surfaces under lights or light reflecting off windows (e.g. onto bat flight lines);
- Only the minimum amount of light needed for safety and access should be used and or turned off when the site is not in use;
- Artificial lighting proposals should not directly illuminate tree lines, which may be of value to foraging or commuting bats and birds (e.g. the trees along the northern and western boundaries of the site);
- Artificial lighting should not directly illuminate any bat roosting features that are installed within the proposed development;
- Lux levels should be below five lux and the lights should be controlled via a passive infrared (PIR) sensor, only operating when activated by motion within proximity of the light;
- Lighting that is required for security reasons should use a lamp of no greater than 2000 lumes (150 Watts) and be PIR sensor activated, to ensure that the lights are not on only when required (Jones, 2000; BCT, 2008);
- Uplighters should be avoided, particularly at the base of trees and within the aforementioned habitats; and

- If possible ‘dark zones’ could be created by limiting or removing lighting within a 5 - 10m buffer between lit areas and the dark, vegetated boundary habitat. Scattered ‘dark zones’ and dark corridors bisecting the site should also be provided to further enhance commuting/foraging behaviour for bats.

The Ecology Consultancy is part of the Temple Group.

Making places better for people and wildlife

London - Tempus Wharf, 33a Bermondsey Wall West, London, SE16 4TQ
T. 020 7378 1914 **W.** www.ecologyconsultancy.co.uk **E.** enquiries@ecologyconsultancy.co.uk

- **Sussex -** The Old Dairy, Barcombe Mills Road, Lewes, East Sussex BN8 5FF **T.** 01273 813739
- **East Anglia -** Thorpe House, 79 Thorpe Road, Norwich NR1 1UA **T.** 01603 628408
- **Midlands -** 9 The Mews, Trent Park, Eastern Avenue, Lichfield WS13 6RN **T.** 01543 728971
- **North -** Trinity Walk, Unit G37b, Market Walk, Wakefield, West Yorkshire WF1 1QR **T.** 01924 683558
- **Scotland -** 3 Coates Place, Edinburgh Scotland EH3 7AA **T.** 0131 225 8610