

The Old Nursery (Area B), Honor Oak  
Park, London SE23 3LB

## Bat Survey Report

Report for: Southwark Council

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(Class 2 licence; Registration No. 2015\_10494\_CLS\_CLS)

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## EXECUTIVE SUMMARY

Southwark Council plan to undertake remodelling works to create c.900 new burial plots at the currently unused Old Nursery Site (known as Area B) on Honor Oak Park, London SE23 3LB. Land Use Consultants Ltd have undertaken a feasibility study and provided three design options for the site (see Appendix A5).

A bat survey was commissioned in May 2016 to assess the value of the site for bats and the likely impact of the proposals on these European Protected Species. This report details the methodology, results and conclusions of surveys completed between 11<sup>th</sup> and 19<sup>th</sup> May 2016.

The key findings of the survey were:

- The main habitats occurring at Area B include buildings and hard surfacing (~0.6ha), a mixed woodland copse (~0.3ha), semi-improved neutral grassland and ruderal vegetation (0.3ha), together with scattered trees and shrubs, mature tree lines and non-native hedgerows.
- The desktop study revealed two roost records and 79 bat flight records within a 2km search radius of the site. No records were from the site itself.
- The value of the site to roosting bats was assessed as LOW/NEGLIGIBLE.
- Common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *P.pygmaeus*, noctule *Nyctalus noctula* and Leisler's bat *N. Leisleri* were recorded at the site.
- Common pipistrelle and noctule were recorded late in their emergence period and roost sites are likely to occur near to the site, rather than from the site itself.
- The site falls along a flight line used by commuting common pipistrelle and noctule bats. The woodland edge, scattered trees and shrubs over semi-improved neutral grassland, and mature tree lines offered foraging habitat used by low numbers of *Pipistrellus sp.*

The impact of the development proposal on bats and their roost sites is assessed as NEGLIGIBLE.

Option 2 is the preferred design for the site since the majority of features found to be of value to commuting (and foraging) bats would be retained/restored.

The woodland habitat should be enhanced by removing invasive species, infill planting with native tree and shrub species and retaining deadwood.

The biodiversity value of the new burial area could be enhanced by including night scented species within the ornamental planting, seeding the area with an appropriate wildflower mix and leaving uncut margins alongside the woodland edge, treelines and hedgerows.

Tree lines or hedgerows should be planted along the eastern boundary and access track to provide screening of the adjacent station platform lighting and to maintain flight lines, respectively.

## 1. INTRODUCTION

### 1.1 BACKGROUND

1.1.1 Southwark Council propose to bring c. 1.4 hectares of currently unused land (Area B) at Honor Oak Park into use as a burial area. The scheme will involve remodeling the site to make suitable for burials and ensuring continued accessibility to Camberwell New Cemetery and the adjacent Honor Oak Park recreational ground.

1.1.2 An ecological survey was commissioned by Southwark Council to provide baseline information on the value of the existing habitats for bats and to identify any potential impacts of the proposals on these European Protected Species.

1.1.3 This report details the methodology, results and conclusions of bat surveys undertaken at the site between 11<sup>th</sup> and 19<sup>th</sup> May 2016. Mitigation measures required to comply with the wildlife legislation are described. Recommended habitat enhancement measures that should be considered within the final design plans are also discussed.

### 1.2 DESCRIPTION OF SITE

1.2.1 The Old Nursery Site (known as Area B) consists of approximately 1.4ha of currently unused land located on the north side of Honor Oak Park, between Honor Oak Park Railway Station (east) and Honor Oak Park Allotments (west). Camberwell New Cemetery occurs to the north of the site. Access to the site via a track road off Honor Oak Park which provides access to the Honor Oak Park Sports Grounds. The National Grid Reference for the centre of the application site is TQ35813 74196.

1.2.2 Area B supports a mosaic of habitats including a mixed woodland copse (~0.3ha), semi-improved neutral grassland and ruderal vegetation (~0.3ha), buildings and hard-surfacing (~0.6ha) together with areas of scattered trees and shrubs, mature tree lines and non-native hedging. An aerial view of the application site is provided in Appendix 2 (Plan 1).

1.2.3 The site is situated in a residential area of south-east London and the surrounding land use is occupied by private residential housing and associated community facilities. The site is well connected to areas of open space including Honor Oak Park Allotments (immediately west), One Tree Hill Local Nature Reserve (LNR) (195m west), the Aquarius Golf Club (340 north-west) and Camberwell New Cemetery and the Honor Oak Sports Ground (immediately north). These sites support a diversity of habitats including woodland, scattered mature trees and shrubs,

amenity grassland and mature tree lines.

1.2.4 No statutory or non-statutory designations apply to the site.

### 1.3 THE ECOLOGICAL SURVEY

1.3.1 A bat survey was completed by a Class 2 Natural England Bat Licensee (2015\_10494\_CLS\_CLS) in May 2016. This comprised a desktop study, a ground level tree assessment, a static detector survey and one evening bat emergence and activity survey.

1.3.2 The survey followed the methodology outlined in The Bat Conservation Trusts Bat Survey for Professional Ecologists – Good Practice Guidelines (3<sup>rd</sup> Edition) (Collins, J (ed), 2016).

### 1.4 CONSTRAINTS

1.4.1 All survey work detailed in this report was carried out during the month of May and therefore the value of the site for bats at other times of the year could not be verified.

1.4.2 The ground level tree assessment was carried out at a suboptimal time of year when trees were in full leaf. Some potential roost features may therefore have been missed due to obscured views.

1.4.3 Access to the maintenance yard was not possible and a comprehensive survey of this area was not possible. Instead, the assessment was based on information gathered from aerial photographs.

1.4.4 The weather conditions during the survey were suboptimal on some nights whereby rain was reported or temperatures fell below the recommended minimum temperature of 8°C. However, bat records were still obtained during these nights albeit at a lower frequency to other dates of survey.

### 1.5 THE DEVELOPMENT PROPOSAL

1.5.1 The proposal entails the creation of c. 900 burial plots by bringing the currently unused land; Old Nursery Site (Area B); in the south of Camberwell New Cemetery into use as a new burial area. The scheme will involve the remodeling of the site to make suitable for burials and ensuring continued accessibility to the cemetery and adjacent recreation ground.

1.5.2 Land Use Consultants Ltd have undertaken a feasibility study for the proposal and produced three options for the landscaping works. These are shown in Appendix A5.

1.5.3 In summary, the key modifications to the area associated with the three options is as follows:

*Option 1*

- A new access track would be provided to the east of the existing track road and the car park would be relocated towards the southern boundary, by Honor Oak Park.
- The existing grassland habitat bordering the woodland copse would be replaced with hard-surfacing.
- The western woodland copse and non-native hedging would be lost together with a section of southern copse and the tree line along the northern boundary.
- The area occupied by scattered trees and shrubs over grassland in the eastern part of the site would be significantly reduced in extent.
- Swales would be provided at the southeastern and south-western corners of the site as well as along the existing burial plots located immediately north of the application site.
- The maintenance yard would be relocated north of its current location.
- New pedestrian access would be created along the eastern boundary.

*Option 2*

- The access track, car parking area and maintenance yard would be retained together with the southern woodland copse, a margin of grassland habitat in the southern part of the site and the northern tree line.
- The woodland and non—native hedging along the access track would be lost and replaced with a newly planted mound.
- The area occupied by scattered trees and shrubs over grassland in the eastern part of the site would be reduced in extent and replaced with burial plots.
- A swale would be created to the east of the maintenance yard.
- New pedestrian access would be created along the eastern boundary.

*Option 3*

- The existing access road would be retained and widened to provide a new parking area along the western boundary. To accommodate this, the woodland and hedging along the access track would be lost to hard standing. A swale would be also provided here and alongside the existing burial plots, north-east of the application site.
- The southern woodland copse and northern tree line would be retained but areas of

grassland below and adjacent to these features would be lost and replaced with hard surfacing (north) or new burial plots (south).

- The area occupied by scattered trees and shrubs over grassland in the eastern part of the site would be lost to provide burial plots.
- The maintenance yard would be relocated north of its current location.
- New pedestrian access would be created along the eastern boundary.

## 2 METHODOLOGY

### 2.1 DESK STUDY

2.1.1 A data search of all known bat records within a 2km search radius centred on the site (TQ358741) was requested from the London Bat Group in May 2016.

2.1.2 The purpose of the study was to determine whether there is any historical evidence of a roost occurring within or near to the site and to ascertain the species of bat known to occur within the immediate surrounding area.

### 2.2 SITE ASSESSMENT

2.2.1 A daytime preliminary bat assessment of Area B was carried out on 11<sup>th</sup> May 2016. The survey included a ground level inspection of the all mature trees within the application site and a walkover survey to identify potential bat roosting, foraging and commuting habitats. The survey was carried out using ladders, close focusing binoculars and a high power torch.

#### *Identification of potential tree roosts*

2.2.2 Features of potential value to bats as a roost site included natural holes, cracks/splits in major limbs, loose bark and the presence of dense epicormic growth and/or ivy,

2.2.3 Bat field signs, notably droppings, scratch marks and urine and fur oil staining around suitable crevices were search for.

#### *Bat foraging and commuting habitat*

2.2.4 The suitability of the site and immediate surrounding area to provide foraging and commuting opportunities for bats was evaluated from aerial photographs (Google Earth) and direct observations made during the site assessment and evening bat emergence and activity survey.



2.2.5 The value of the survey area to foraging bats was assessed according to the occurrence of vegetation that typically supports high insect biomass such as edge and mosaic habitats, sheltered habitat features, broadleaved trees and aquatic habitats.

2.2.6 Commuting habitat includes linear vegetated features such as tree lines, woodland edges and watercourses.

2.2.7 Potential barriers to the movement of animals includes lighting, major roads (A-roads/Motorways) and poorly vegetated urban and industrially developed land.

## 2.3 EVENING BAT EMERGENCE AND ACTIVITY SURVEY

2.3.1 One evening bat emergence and activity survey was completed at the site by three surveyors on 19<sup>th</sup> May 2016.

2.3.2 Each surveyor was equipped with a BatBox Duet heterodyne and frequency division detector (BatBox Ltd) and hand held recorders (Edirol R09/R05) and/or EM3+ (Wildlife Acoustics Inc.) and/or Anabat Walkabout (Titley Electronics) which have in-built recording capabilities.

2.3.3 The survey commenced at 30 minutes before sunset and lasted no less than 2 hours. Surveyors walked transects around the site ensuring all notable habitat features were included in the survey.

2.3.4 All echolocation calls were recorded and later analysed using BatSound Software (Pettersson Elektronik) to verify the species. The location of bat contacts was mapped together with any field observations (i.e. bats foraging, commuting, existing roost).

## 2.4 STATIC DETECTOR SURVEYS

2.4.1 Two song Meter (SM2) static detectors fitted with SMX\_U1 microphones attached to a 1-3 m cables (Wildlife Acoustic Inc.) were deployed at the site between 11<sup>th</sup> and 18<sup>th</sup> May 2016. Detector 1 was deployed along the mature tree line at the northern boundary of the site. Detector 2 was deployed along the woodland edge at the southern boundary of the site. The location of these devices is shown on Plan 2 in Appendix A2.

2.4.2 The detectors were programed to be active at sunset – 30 minutes up until sunrise + 30 minutes. All bat calls were recorded and later analysed using BatSound Software to verify the species.

2.4.3 A timeline of bat activity was produced for each night surveyed.

### 3 RESULTS

#### 3.1 DESK STUDY

##### *London Bat Group Data Search*

- 3.1.1 Two roost records for unidentified *Pipistrellus sp* and a vesper bat were returned from the data search. One bat casualty record for a common pipistrelle *Pipistrellus pipistrellus* was also returned. (Casualty records are often indicative of a roost occurring nearby).
- 3.1.2 Seventy-nine bat flight records were noted. These included common pipistrelle *Pipistrellus pipistrellus* (No. 22), soprano pipistrelle *P. pygmaeus* (No. 16), Nathusius' pipistrelle *P. nathusii* (No.4), noctule *Nyctalus noctula* (No. 5), Leisler's bat *N. Leisleri* (No.10), and unconfirmed *Pipistrellus sp* (No.7), *Nyctalus sp* (No.1) and Vespertilionidae bats (No.14). No records were from the site itself.
- 3.1.3 Previous surveys of the adjacent Area D at Camberwell New Cemetery in summer 2015 identified transient roosts used by low numbers of common pipistrelle and soprano pipistrelle bats (approximately 150m north-west of Area B). Flight records for these species and noctule and Leisler's bat were also noted.

#### 3.2 SITE ASSESSMENT

- 3.2.1 The site assessment was completed on 11<sup>th</sup> May 2016. The weather conditions during the surveys were mostly dry but overcast with a light breeze. There was a short heavy downpour during the survey and rain had been reported on the days leading up to the site visit.
- 3.2.2 A description of the survey area is provided below. Notable features are described as target notes (TN) and their location is shown in Plan 2, Appendix 2. Photographs to support the descriptive text can be found in Appendix A3.

##### *Woodland Copse*

- 3.2.3 The site supports c. 0.3ha of woodland habitat which is located along the southern boundary with Honor Oak Park and along the track road that provides access to Honor Oak Park Sports Ground (TN1, Photograph 1). The copse comprised a mix of native and non-native species: Norway maple *Acer platanoides*, sycamore *Acer pseudoplatus*, ash *Fraxinus excelsior*, cherry *Prunus sp* and occasional beech *Fagus sp*, horse chestnut *Aesculus hippocastanum* and oak *Quercus sp* with a shrub layer of ash and sycamore saplings, cherry laurel *Prunus laurocerasus*, hawthorn *Crataegus sp.*, elder *Sambucus nigra*, brambles *Rubus fruticosus*, butterfly bush

*Buddleia davidii* and ivy *Hedera helix*.

- 3.2.4 Potential roost features were limited to the western part of the copse where there were a number of ash and sycamore that were clad with dense ivy (TN2, Photograph 2).

*Tree lines*

- 3.2.5 A tree line comprising mainly Lombardy poplar *Populus sp*, with infrequent copper beech, horse chestnut, Leyland Cypress, hawthorn and elder, defined the north-western boundary of the application site (TN3, Photograph 3).
- 3.2.6 Two lines of Leyland Cypress trees *Cupressus x leylandii* occur along the southern boundary with Honor Oak Park and provided screening from the adjacent road (TN4, Photograph 4).
- 3.2.7 None of the trees associated with these tree lines were found to support features of value to bats as a roost. Instead their value to bats is likely to be as a potential foraging resource and flight line, offering connectivity to the adjacent allotments, Camberwell New Cemetery and One Tree Hill LNR.

*Semi-improved neutral grassland*

- 3.2.8 Semi-improved neutral grassland occupied c. 0.3 ha of the site, predominantly in the eastern part of the site (TN5, Photograph 5). The sward supported a variety of flowering herbs including birds foot trefoil *Lotus corniculatus*, creeping buttercup *Ranunculus repens*, goose grass *Galium aparine*, black medick *Medicago lupulina*, sheep's sorrel *Rumex acetosella*, kidney vetch *Anthyllis vulneraria*, cinquefoil *Potentilla sp*, plantain *Plantago sp*, red clover *Trifolium pratense*, dandelion *Taraxacum sp* and hawkbit *Leontodon sp*, together with common nettle *Urtica dioica*, willow herb *Epilobium sp.*, spurge *Euphorbium sp*, cow parsley *Anthriscus sylvestris*, ox-eye daisy *Leucanthemum vulgare*, burdock *Arctium sp*, docks *Rumex sp*, and thistle *Cirsium sp.*. These species provide nectar sources for a diversity of nocturnal insects and the habitat therefore offers a potential foraging resource for bats.

*Scattered trees and shrubs*

- 3.2.9 Newly planted young tree and shrub vegetation were scattered along the eastern embankment (TN6, Photograph 6). Species included lime *Tilia x europea*, beech, cherry, yew *Taxus baccata*, hawthorn, hazel *Corylus sp*. and oak, together with clumps of willow *Salix sp* in the the northern-eastern corner of the site (TN7, Photograph 7).
- 3.2.10 In combination with the surrounding grassland, the tree and shrub vegetation in this part of the

site provide a mosaic habitat of potential value to foraging bats. However, this part of the site was quite exposed to the prevailing wind and also likely to be impacted by light spill from the adjacent railway station platforms, which may diminish its value.

#### *Hedging*

- 3.2.11 Non-native hedging comprising cherry laurel occurred along the track road which provided vehicle and pedestrian access to the car park and Honor Oak Park Sports Ground (TN8, Photograph 8). This habitat offered limited value as a foraging resource for bats, but together with the adjacent trees may offer a potential flight line for commuting bats.

#### *Buildings and hard-surfacing*

- 3.2.12 Buildings and hard surfacing occupied approximately 50% of the total land area (~0.6ha). Buildings comprised shipping containers located within the maintenance yard (TN9), which was not accessible for survey. Hard-surfacing also occurred here and along the access track from Honor Oak Park, the car parking area in the north-western part of the site (TN10, Photograph 3) and within the central part of the site (TN11, Photograph 9). This habitat offers negligible value to roosting, foraging or commuting bats.

#### *Ruderal vegetation*

- 3.2.13 Disturbed earth mounds in the western part of the site were partially colonized by ruderal species, notably thistle, willowherb, bindweed *Convolvulus sp.*, brambles, butterfly bush and nettles (TN12, Photograph 10). Together with the adjacent woodland copse, this habitat provides a graded vegetated feature of potential value to foraging and commuting bats.
- 3.2.14 Ruderal species notably brambles and butterfly bush have also colonized damaged areas of hard surfacing, in particular along the metal security fencing which demarcated the majority of the northern boundary and the maintenance yard (TN13, Photograph 11). The extent of these habitats is unlikely to be sufficient to offer value to bats as a foraging resource.

### 3.3 EVENING BAT EMERGENCE AND ACTIVITY SURVEY

- 3.3.1 Full details of the results of the evening bat emergence and activity survey can be found in Appendix A4. Bat activity observed during the survey is illustrated in Plan 3 in Appendix A2. Surveyors 1 and 2 walked transects around the main fenced off part of the site; surveyor 3 walk a transect along the access track and around the car park.

- 3.3.2 The weather conditions during the survey were 14°C with 100% cloud cover, dry with a gusty breeze.
- 3.3.3 Common pipistrelle *Pipistrellus Pipistrellus* and soprano pipistrelle *P.pygmaeus* were recorded during the survey.
- 3.3.4 Four common pipistrelle contacts were noted during the emergence period. No bats were seen to emerge from any of the trees (or buildings) within the site. Instead bats were observed arriving on site from the south or west and the hedgerow and woodland along the access track was found to provide a flight line for commuting pipistrelle bats.
- 3.3.5 Notable bat foraging habitat was identified in the eastern part of the site where the habitat comprised scattered trees and shrubs over grassland. The eastern end of the woodland copse and the area of willow scrub at the north-east corner appeared to provide some sheltering from the prevailing wind, and foraging activity was concentrated around these features.
- 3.4 STATIC DETECTOR SURVEYS
- 3.4.1 A timeline of the results of the static detector surveys can be found in Appendix A4. The location of static detectors is shown on Plan 2, Appendix A2.
- 3.4.2 Graphs of the maximum/minimum temperatures and rainfall recorded during the survey period are presented in Appendix A4. Minimum temperatures ranged between 5-12°C with temperatures falling below the recommended 8°C on the 15<sup>th</sup> May, and fewer bat contacts recorded on this night's survey. Rain was noted on 12<sup>th</sup> May, but this did not appear to adversely impact the level of bat activity recorded.
- 3.4.3 Common pipistrelle, soprano pipistrelle, noctule and Leisler's bats were recorded during the survey. Common pipistrelle and noctule were recorded most often.
- 3.4.4 Common pipistrelle contacts were recorded during the emergence period; 11 from the northern tree line and three from the southern tree line. The earliest record was at 20 minutes after sunset. These data suggest that a roost site likely occurs near to the site (rather than from the site itself) and that the application site falls along a flight line used by commuting common pipistrelle bats. Since few feeding records for common pipistrelle were noted during the survey, the site's value as a commuting route is therefore considered more noteworthy.
- 3.4.5 Similar findings were observed for noctule. They were noted late in their emergence period and single bat contacts infer commuting activity by this species.

## 4 CONCLUSIONS

### 4.1 SITE EVALUATION

- 4.1.1 Area B is unlikely to support a bat roost site. Overall the habitat was found to be of LOW or NEGLIGIBLE value to roosting bats and the direct impact of the proposals on bats and their roost sites is therefore assessed as NEGLIGIBLE.
- 4.1.2 Area B does however falls within a bat flight line used by common pipistrelle and noctule bats. Records during the emergence period suggest that this may be a notable commuting route between roost sites and suitable foraging areas. The development proposals therefore should seek to retain this function by ensuring appropriate linear vegetated features are retained or restored and, where possible enhanced. This would be best achieved by implementing Option 2 of the landscape proposals produced by Land Use Consultants Ltd (refer to Appendix A5).
- 4.1.3 Area B was found to provide foraging habitat for low numbers of pipistrelle bats. The proposals should seek to enhance the value of the habitat for bats post development through the implementation of an appropriate planting scheme.

## 5 RECOMMENDATIONS

### 5.1 WOODLAND MANAGEMENT

- 5.1.1 Species listed on the London Invasive Species List (<http://www.londonisi.org.uk>) such as cherry laurel and buddleia should be removed as part of the redevelopment proposals.
- 5.1.2 Replacement planting should be with native species that support a high insect biomass, pollen, nectar and berries to provide foraging opportunities for birds, bats and invertebrates; e.g. hawthorn *Crataegus monogyna*, hazel *Corylus avellana*, dogwood *Cornus sanguine*, field maple *Acer campestre*, rowan *Sorbus aucuparia*, guelder rose *Viburnum opulus*, box *Buxus sempervirens*, native privet *Ligustrum vulgare*, English yew *Taxus baccata*.
- 5.1.3 As much of the dead wood (logs, wind-blown trees and stumps) already present on site should be retained. Any longs and rounds collected from tree management activities should also be kept on site to provide additional habitat refuges for invertebrates and other wildlife (e.g. hedgehogs).

## 5.2 TREE LINES

- 5.2.1 All three landscaping options will result in the removal of the western woodland copse and non-native hedgerow which extend north to south along the existing access track. It is recommended that a linear vegetated feature be provided here in order to maintain connectivity and potential bat flight lines across the site. This could comprise the establishment of a new tree line or hedgerow. Fast growing species such as poplars, alder *Alnus glutinosa*, willow and silver birch *Betula pendula* may be appropriate, together with infilling with fruiting species such as rowan, hawthorn and elder.

## 5.3 BURIAL PLOTS

- 5.3.1 The area given over to burial plots should be seeded with a wildflower mix that contains night pollinated plants that attract moths and other nocturnal insects such as champions *Silene sp*, pinks *Dianthus sp*, and knapweeds *Centaurea sp* and low-growing wildflowers such as birds-foot-trefoil *Lotus corniculatus*, selfheal *Prunella vulgaris*, lady's bedstraw *Galium verum* and hawkbits *Leontodon spp*. These flowering species are able to survive and thrive under a regular mowing regime whilst provide habitat for invertebrates and feeding opportunities for bats and birds. Where appropriate, the creation of uncut margins and tall flowering herbs alongside the retained woodland edge and tree lines would also be beneficial.
- 5.3.2 Ornamental planting could include flowering plants that offer good nectar sources and/or night pollinated plants that attract moths and other nocturnal insects such as champions, pinks, lavender *Lavandula angustifolia*, marjoram *Origanum majorana*, red valerian *Centranthus ruber*, Scabious *Scabiosa sp*, Thyme *Thymus vulgaris*, wall flower *Erysimum sp*, primrose *Primula vulgaris* and tobacco plants *Nicotiana glauca*.

## 5.4 MANAGEMENT OF LIGHT SPILL

- 5.4.1 A vegetative screen should be planted alongside Honor Oak Railway Station to reduce light spillage onto the site and provide sheltering from the prevailing wind. This could comprise planting climbers such ivy *Hedera helix*, Traveler's-joy *Clematis vitalba*, honeysuckle *Lonicera periclymenum* and/or hops *Humulus lupulus* along the fence line to create a green façade. Alternatively, a tall dense hedge comprising e.g. box *Buxus sempervirens*, native privet *Ligustrum vulgare*, English yew *Taxus baccata*, or Willow or a tree line of poplars, alder or silver birch would be suitable alternatives.

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## A1: LEGISLATION

## Bat Legislation

All bat species in the UK are fully protected under The Conservation (Natural Habitats, &c.) Regulations 2010 (as amended) through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or taking (capture) of bats
- Deliberate disturbance of bats in such a way as to: (a) impair their ability to survive, breed, or rear or nurture their young; or (b) affect significantly the local distribution or abundance of bat species; or (c) impair their ability to hibernate or migrate
- Damage or destruction of a bat breeding site or resting place i.e. roost
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

All bat species in the UK are also protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, it is an offence to:

- Intentionally or recklessly disturb any bat while it is occupying a structure or place which it uses for shelter or protection
- Intentionally or recklessly obstruct the access to any place of shelter or protection used by bat(s)
- Sell, offer or expose for sale, possess or transport a bat(s) for the purpose of sale.

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England) will need to be applied for to allow derogation from the relevant legislation i.e. for works liable to affect a bat roost or 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, hibernate, migrate). 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.

## Bird Legislation

All birds, their nests and eggs are protected under Sections 1-8 of the Wildlife and Countryside Act 1981 (as amended). It is an offence to:

- Kill, injure or take any wild bird, or to take or destroy their eggs;
- Take, damage or destroy the nest of any wild bird while it is in use or being built. Certain species receive additional special protection under Schedule 1 of the Act.
- 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.

Species listed under Annex 1 of the European Community Directive on the conservation of Wild Birds (79/409/EEC) qualify sites for designation as a Special Protection Area (SPA) if certain selection criteria are met, such as a site supports internationally important populations of an Annex 1 species.

## Conservation (Natural Habitats etc.) Regulations 2010

The species protection provision of the EC Habitats Directive 1992, as implemented by the Conservation of Habitats and Species Regulations 2010, comprises three “derogation tests” which must be applied by the Local Planning Authority when deciding whether to grant planning permission for a development that could harm a European Protective Species. The three tests are that:

- *The activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety*
- *There must be no satisfactory alternative; and*
- *Favourable Conservation Status (FCS) of the species must be maintained.*

It is the responsibility of the applicant to submit sufficient information to address these tests when applying for planning permission. For development activities, an EPSM Licence application can only be obtained after planning permission has been granted. However, the granting of planning permission does not guarantee that a licence will be issued by the relevant countryside agency.

## National Planning Policy Framework (2012)

The National Planning Policy Framework (NPPF) (2012) sets out the Government’s national policies on different aspects of planning in England. Section 10 paragraphs 109 to 125 details planning policies on the conservation and enhancement of the natural environment. Circular 06/2005 provides further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system.

In summary:

- The planning system should contribute to and enhance the natural and local environment by: ‘minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.’ (NPPF Section 10, para 109)
- When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused (Section 10, para 118).
- Proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted (Section 10, para 118).
- Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted (Section 10, para 118).
- Opportunities to incorporate biodiversity in and around developments should be encouraged (Section 10, para 118).
- Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss (Section 10, para 118).
- Potential Special Protection Areas and possible Special Areas of Conservation, listed or proposed Ramsar sites and sites identified or required as compensatory measures for adverse effects on European sites, should be given the same protection as European sites (Section 10, para 118).
- The presumption in favour of sustainable development (para 14) does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined (Section 10, para 119).
- Planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation (Section 10, para 125).

Local planning authorities must take account of the conservation of protected species when determining planning applications. The presence of protected species is a material consideration when assessing a development proposal that, if carried out, would be likely to result in harm to the species or its habitat. This requirement has important implications for bat surveys as it means that, where there is reasonable likelihood of bats being present and being affected by the development, surveys must be carried out before planning permission is considered' (BCR 2012). In order for the Local Planning Authority to adequately assess a development proposal against National and Local Planning Policy, full comprehensive ecological surveys need to be carried out and suitable mitigation strategies compiled prior to the submission of any planning application. This information will be reviewed by the Local Planning Authority in consultation with the relevant countryside agency and other conservation bodies.

Any developer should, in the first instance, consult the relevant Local Plans to assess the suitability of their proposal (refer to NPPF Section 10 paras 113 to 117).

## Natural Environment and Rural Communities Act 2006 (NERC)

Part 3, Section 40 of 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 of principal importance for the purpose of conserving biodiversity. This list is based on those species listed in the UK Biodiversity Action Plan (BAP) as priority species. The S41 list replaces the list published under Section 74 of the Countryside and Rights of Way (CRoW) Act 2000.

## Biodiversity Action Plan

Biodiversity Action Plans (BAPs) set out actions for the conservation and enhancement of biological diversity at national, regional and local level. They consist of both Habitat Action Plans (HAPs) and Species Action Plans (SAPs) and species and habitats listed within these are defined as being of Principal Importance for the Conservation of Biodiversity under Section 41 of the NERC Act 2006. Local authorities must consider these species and habitats when determining planning applications.

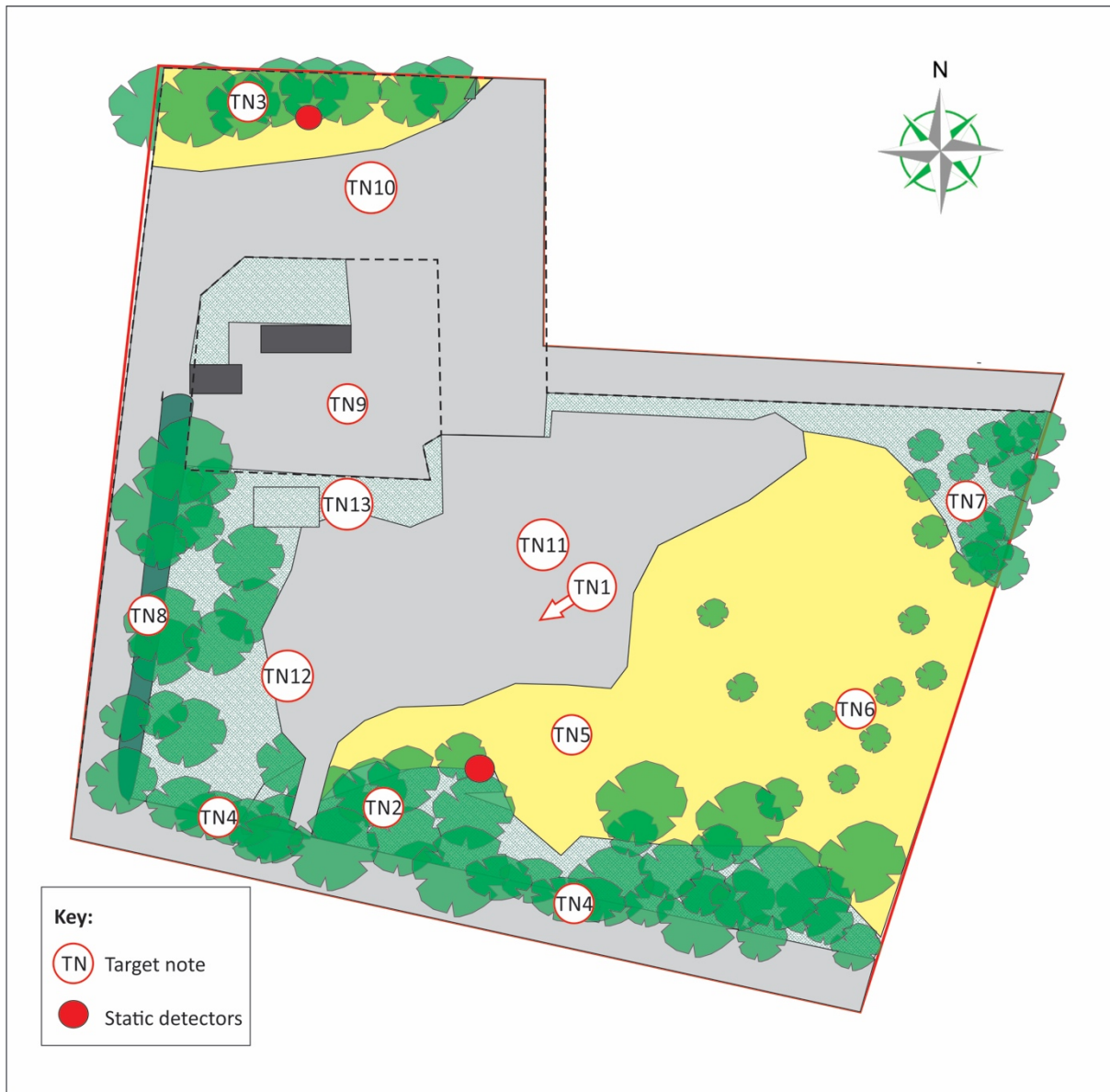
## A2: PLANS

Plan 1: Aerial view of the site



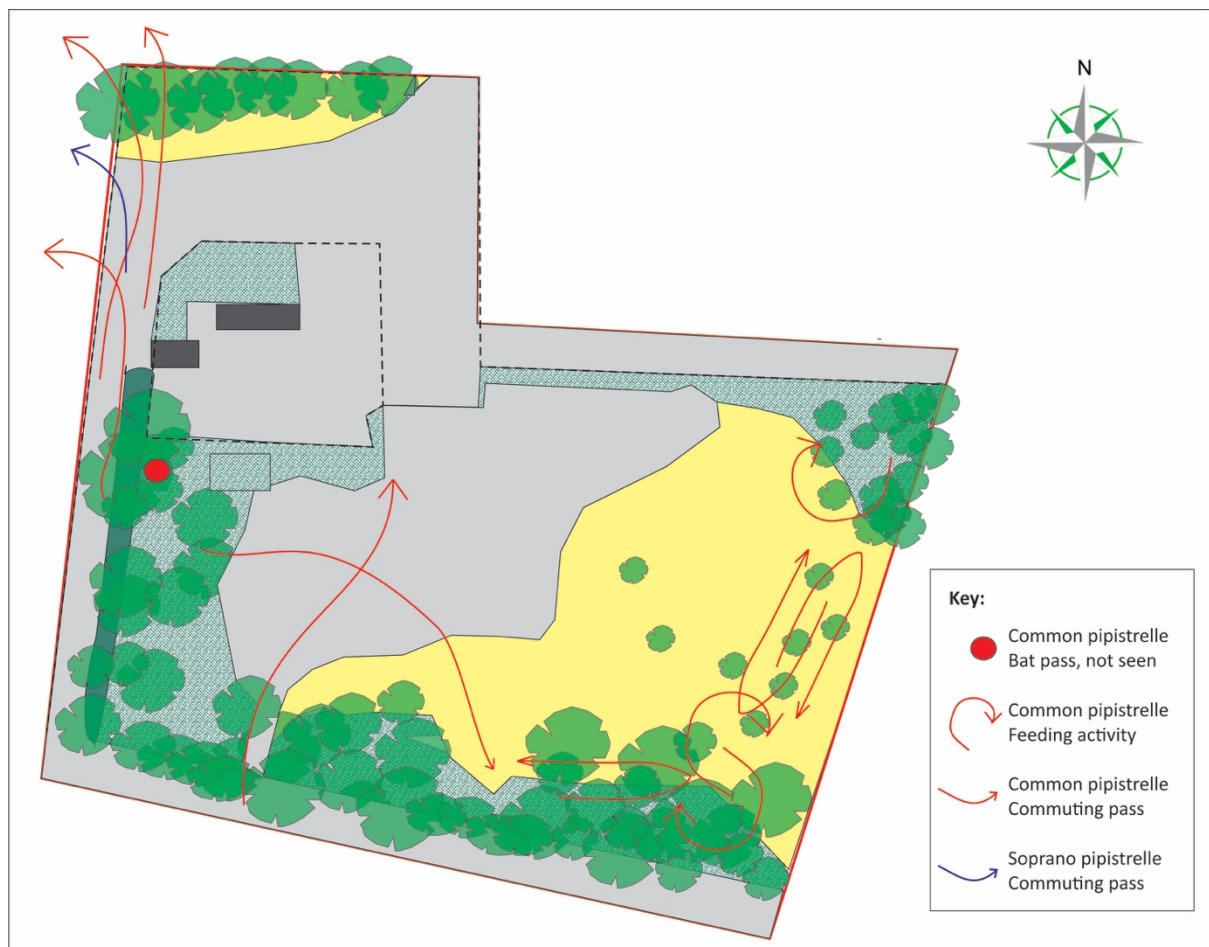


Plan 2: Site plan showing the location of Target Notes (TN) and deployment of static detectors.





Plan 3: Results of the evening bat emergence and activity survey on 19<sup>th</sup> May 2016



## A3: PHOTOGRAPHS



**Photograph 1 (TN1):** Mixed woodland copse at the boundary with Honor Oak Park and the access road to Honor Oak Park Sports Ground



**Photograph 2 (TN2):** Ivy clad ash and sycamore offered low potential roost habitat. A static detector was deployed here.





**Photograph 3 (TN3):** Tree line at the north-west boundary. A static detector was deployed here.



**Photograph 4 (TN4):** Two tree lines of Leyland Cypress occur along the southern boundary.



**Photograph 5 (TN5):** Semi-improved neutral grassland.



**Photograph 6 (TN6):** Young scattered tree and shrub planting along the embankment in the east of the site.





**Photograph 7 (TN7):** Willow at the north-east corner and along the eastern boundary provided sheltering from the prevailing wind



**Photograph 8 (TN8):** Cherry Laurel hedge along the access track



**Photograph 9 (TN11):** Area of hard surfacing at the centre of the site.



**Photograph 10 (T12):** Earth mounds in the west of the site which have become colonised by ruderal plants.





**Photograph 11 (TN13):** Brambles have colonised around parts of the security fencing



## A4: BAT SURVEY DATA

## KEY:

Code	Species (common name)	Species (Scientific name)
Ppip	Common pipistrelle	<i>Pipistrellus pipistrellus</i>
Ppyg	Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>
Nn	Noctule	<i>Nyctalus noctula</i>
NI	Leisler's bat	<i>Nyctalus leisleri</i>

**Dusk emergence and activity survey on 16<sup>th</sup> May 2016****Sunset:** 20:53**Start time:** 20:30**End Time:** 22:35**Weather conditions:** 15 °C, dry, calm with 60% cloud cover**Surveyor 1 – Transect around the main area of the site**

<b>Time</b>	<b>Species</b>	<b>Comments</b>	<b>Time after sunset</b>
21:16	Ppip	Bat seen flying towards the southern tree line	23 minutes
21:23	Ppip	Bat pass, not seen at the north west corner of the site by the contractors	30 minutes
21:50	Ppip	Bat feeding along the treeline at the southern boundary	57 minutes
21:52-22:02	Ppip	Bat foraging in the south-eastern corner of the site	
22:12 – 22:13	Ppip	Bat feeding along the southern treeline	
22:21	Ppip	Bat feeding along the southern tree line	

**Surveyor 2 – Transect around the main area of the site**

<b>Time</b>	<b>Species</b>	<b>Comments</b>	<b>Time after sunset</b>
21:20-21:24	Ppip	Bat feeding in the southeast corner of the site	27 minutes
21:29	Ppip	Bat pass northwards across the site	36 minutes
21:47-21:48	Ppip	1-2 bats feeding along the southern boundary	
21:48-21:51	Ppip	1-3 bats feeding at the south-east corner and over the grassland along the eastern part of the site	
21:57	Ppip	Bat feeding pass along the western end of the southern boundary	
21:59	Ppip	Faint bat record in the south-eastern corner of the site	

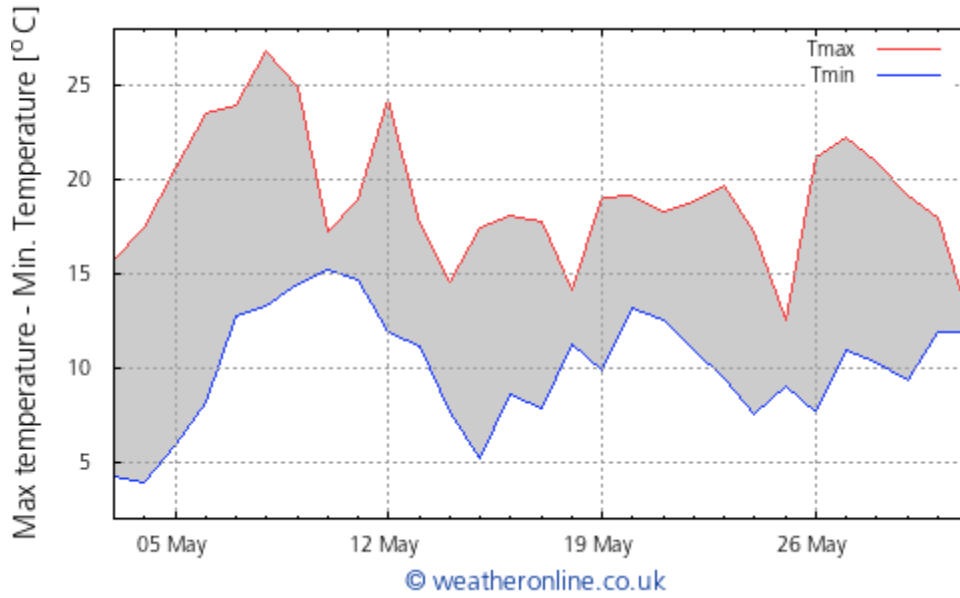
**Surveyor 3 – located along the north-western boundary of the application site**

<b>Time</b>	<b>Species</b>	<b>Comments</b>	<b>Time after sunset</b>
21:15	Ppip	Bat pass along the western boundary, passed north-west towards the allotments	23 minutes
21:18	Ppip	Bat pass along the western boundary from south to north-west	25 minutes
21:21	Ppip	Bat pass at the north-west corner of the site	28 minutes
22:07	Ppyg	Bat pass at the north-west corner of the site	

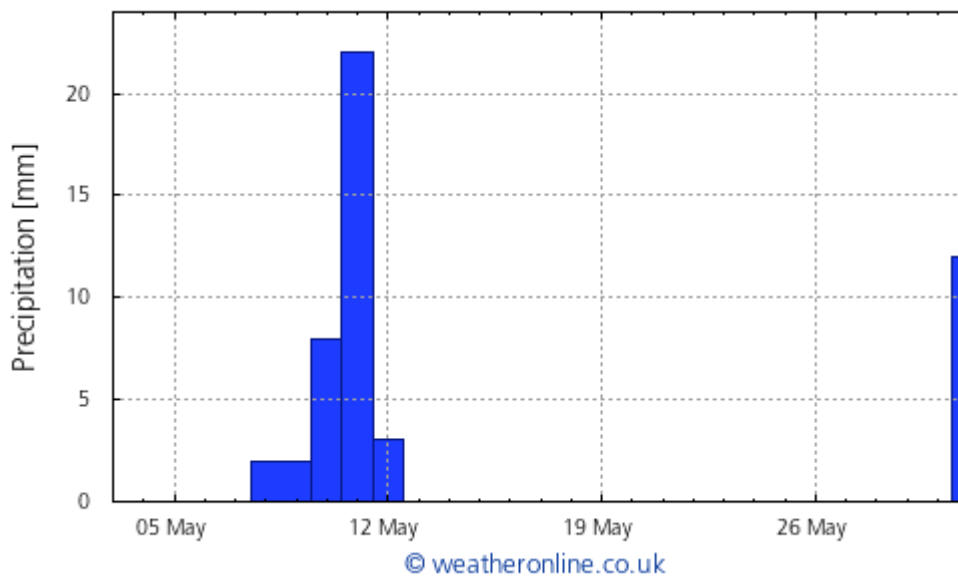
**Static detector surveys 12<sup>th</sup> to 16<sup>th</sup> May 2016**

Graphs showing the weather conditions reported during the survey period (Taken from Weatheronline.co.uk for the London Area)

- *Maximum/Minimum temperature*



- *Rainfall*



**Detector 1:** Located along the treeline at the northern edge of the car park

Date	Time	Species	Minutes after sunset/before sunrise
11/05/2016  SS = 20:41  SR = 05:10	21:42- 21:43	Ppip	+61 minutes
	22:17	Ppip	
	22:26	Ppyg	
	22:40 - 22:44	Ppip	
	22:46	Ppip	
	22:49- 22:51	Ppip	
	22:53 - 22:54	Ppip	
	22:57	Ppip	
	22:59	Ppip	
	23:05 - 23:08	Ppip	
	23:11	Ppip	
	23:13	Ppip	
	23:19 - 23:20	Ppip	
	23:22	Ppip	
	23:29	Ppip	
	23:41 - 23:43	Ppip	
	23:48	Ppip	
	00:17	Ppip	
	00:24	Ppip	
	00:28	Ppip	
	00:30 - 00:33	Ppip	
	00:37	Ppip	
	00:43	Ppip	
	00:46 - 00:47	Ppip	
	00:56	Ppip	
	01:40	Ppip	
	01:44 - 01:46	Ppip	
	01:48- 01:49	Ppip	
	02:05	Ppip	
	02:16- 02:17	Ppip	
	02:37- 02:38	Ppip	
	02:40 - 02:42	Ppip	
	03:06	Ppip	
	03:19	Ppip	
03:25	Ppip		
03:38 - 03:39	Ppip		
03:43-03:44	Nn		
03:46	Nn		
03:47	Ppip		

Date	Time	Species	Minutes after sunset/before sunrise
	03:53 - 03:54	Nn	
	03:56 - 03:59	Ppip	
	04:00	Nn	
	04:04	Ppip	
	04:09	Nn	
	04:21 - 04:22	Ppip	-48 minutes
12/05/2016	20:53	Nn	+11 minutes
SS = 20:42	21:08 - 21:10	Ppip	+26 minutes
SR = 05:08	21:15	Ppip	
	21:18	Ppip	
	21:33 - 21:34	Ppip	
	21:50	Ppip	
	21:54 - 21:56	Ppip	
	22:06	Ppip	
	22:14	Ppip	
	22:32	Ppip	
	22:42	Ppip	
	22:44 - 22:49	Ppip	
	22:49- 22:51	Nn	
	22:51	Nn	
	22:52 - 22:58	Ppip	1-3 bats
	22:54	Nl	
	22:56 - 22:58	Nn	
	22:58	Ppip	
	23:00	Nn	
	23:01	Ppip	
	23:03 - 23:04	Ppip	
	23:06	Ppip, Nn	
	23:09	Nn	
	23:12	Nn	
	23:18	Ppip	
	23:19	Nn	
	23:25	Ppip	
	23:28	Ppip	
	23:35	Nn	
	23:36	Ppip	
	23:38	Ppip	
	23:38	Nn	
	23:40	Ppip	
	23:41	Nn	
	23:41	Ppip	

Date	Time	Species	Minutes after sunset/before sunrise
	23:46 - 23:47	Nn	
	23:50 - 23:51	Ppip	
	00:03	Nn	
	00:23	Ppip	
	00:36	Ppip	
	00:59	Ppip	
	01:39	Ppip	
	01:46-01:47	Ppip	
	02:04 - 02:05	Ppip	
	02:09	Ppip	
	02:49	Ppip	
	02:54	Ppip	
	03:01	Nn	
	03:08	Ppip	
	03:11	Ppip	
	03:13	Ppip	
	03:30	Nn	
	03:32- 03:34	Ppip	
	03:35	Nn	
	03:43 - 03:44	Ppip	
	03:51	Nn	
	03:59	Ppip	
	04:23	Ppip	
	13/05/2016  SS = 20:44 SR = 05:07	21:04	Ppip
21:07 - 21:13		Ppip	+23 minutes
21:19		Ppip	1-2 bats
21:21		Ppip	
21:24 - 21:25		Ppip	
21:27 - 21:28		Ppip	
21:30 - 21:32		Ppip	1-3 bats
21:34		Ppip	
21:37 - 21:39		Ppip	
21:41		Ppip	
21:44		Ppip	
23:29		Ppip	
23:52		Ppip	
02:20		Ppip	
03:35		Ppip	
03:53		Nn	
04:05	Ppip		
04:28	Ppip		

Date	Time	Species	Minutes after sunset/before sunrise
14/05/2016 SS = 20:45 SR = 05:05	21:05	Ppip	+20 minutes
	21:08 - 21:09	Ppip	+23 minutes
	21:11	Nl	+26 minutes
	21:11 - 21:12	Ppip	
	21:17	Ppip	
	21:26	Ppip	
	21:37 - 21:39 21:53 - 21:54	Ppip	
15/05/2016 SS = 20:47 SR = 05:04	21:01	Nn	+14 minutes
	21:03	Nn	+16 minutes
	21:08-21:11	Ppip	+21 minutes
	21:13	Ppip	+26 minutes
	21:34	Ppip	
	22:07	Ppip	
	22:36	Ppip	
	22:47	Ppip	
	23:26	Ppip	
	00:59	Ppip	
	02:10	Ppip	
03:07	Ppip		
16/05/2016 SS = 20:48 SR = 05:02	21:04	Nn	+16 minutes
	21:13 - 21:15	Ppip	+25 minutes
	21:17	Ppip	+29 minutes
	21:22	Ppip	
	21:27 - 21:28	Ppip	
	22:56	Ppip	
	23:03	Ppip	
	23:12	Ppip, Ppyg	
	23:18	Ppip	
	23:23	Ppip	
	23:28	Ppip	
	23:34	Ppip	
	23:54 - 23:55	Ppip	
	00:19	Ppip	
	00:24	Ppip	
	00:26 - 00:27	Ppip	
01:06	Ppip		
02:44	Ppip		
03:14	Nn		
17/05/2016	21:16	Ppip	+26 minutes

Date	Time	Species	Minutes after sunset/before sunrise
SS = 20:50 SR = 05:01	21:26	Ppip	
	21:28	Ppip	
	21:30	Ppip	
	21:42 - 21:43	Ppip	
	22:20	Ppip	
	23:40	Ppyg	
	03:37	Ppip	
	03:41	Ppip	
	04:25	Ppip	
18/05/2016 SS = 20:51 SR = 05:00	21:13	Ppip	+22 minutes
	21:24 - 21:25	Ppip	
	23:20	Ppip	
	00:04	Ppip	
	00:25	Ppip	
	00:43	Ppip	
	02:02	Ppip	
	02:42	Ppip	
	03:37	Ppip	
03:59	Ppip	-61 minutes	

**Detector 2:** Located along the southern boundary

Date	Time	Species	Comments
11/05/2016 SS = 20:41 SR = 05:10	21:10	Ppip	+29 minutes
	22:55	Ppip	
	22:58	Ppip	
	23:03	Ppip	
	23:36	Ppip	
	00:23 - 00:24	Ppip	
	00:27	Ppip	
	00:33- 00:34	Ppip	
	00:57	Ppip	
	03:09	Ppyg	
	03:54 - 03:55	Nn	
	03:37	Nn	
12/05/2016 SS = 20:42 SR = 05:08	No bats recorded		
13/05/2016 SS = 20:44 SR = 05:07	21:30	Ppip	+46 minutes



14/05/2016 SS = 20:45 SR = 05:05	02:17	Nn	
	02:44	Nn	
15/05/2016 SS = 20:47 SR = 05:04	21:01	Nn	+14 minutes
	22:53	Ppip	
	23:27	Ppip	
16/05/2016 SS = 20:49 SR = 05:02	21:16	Ppip	+27 minutes
	21:31	Nn	
	23:08	Ppip	
	23:52	Nn	
	00:23	Ppip	
	02:25	Ppyg	
	02:33	Ppip	
	02:55	Ppip	
17/05/2016 SS = 20:50 SR = 05:01	22:05	Ppip	
	22:21	Ppip	
	00:33 - 00:34	Ppip	
	04:13	Ppip	
	04:21 - 04:22	Ppip	
18/05/2016 SS = 20:51 SR = 05:00	21:17	Ppip	+26 minutes
	23:00	Ppip	
	23:20	Ppyg	
	00:42	Ppyg	
	03:59	Nn	

## A5: DEVELOPMENT PROPOSAL OPTIONS 1-3

**Option 1:**



**Option 2:**



**Option 3:**

