

# St Michael's Convent, 354 London Road, Waterlooville, PO7 7TF

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Method Statement to accompany Natural  
England EPS licence application in respect of  
bats

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## Document 1 – Background and Supporting Information

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July 2012

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**Method Statement to accompany Natural England EPS licence application in respect of  
bats**

**Document 1 – Background and Supporting Information  
St Michael's Convent, 354 London Road, Waterlooville, PO7 7TF  
for  
Linden Homes**

| Reference: St Michaels Convent, Waterlooville |          |                                                                                   |          |                                                                                    |          |
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This report represents sound industry practice; reports and recommends correctly, truthfully and objectively; is appropriate given the local site conditions, scope of works proposed and resources allocated to us by the client; and avoids invalid, biased, and exaggerated statements.

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## CONTENTS

|          |                                                                                                                                               |           |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>A</b> | <b>EXECUTIVE SUMMARY .....</b>                                                                                                                | <b>5</b>  |
| <b>B</b> | <b>INTRODUCTION .....</b>                                                                                                                     | <b>7</b>  |
| B.1      | BACKGROUND TO ACTIVITY/ DEVELOPMENT .....                                                                                                     | 7         |
| B.2      | FULL DETAILS OF PROPOSED WORKS ON SITE THAT ARE TO BE COVERED BY THE LICENCE<br>(INCLUDING CONSIDERATION OF THE THREE DEROGATION TESTS) ..... | 7         |
| <b>C</b> | <b>SURVEY AND SITE ASSESSMENT .....</b>                                                                                                       | <b>8</b>  |
| C.1      | PRE-EXISTING INFORMATION ON THE BAT SPECIES AT THE SURVEY SITE .....                                                                          | 8         |
| C.2      | STATUS OF SPECIES.....                                                                                                                        | 8         |
| C.3      | OBJECTIVES OF THE SURVEY .....                                                                                                                | 9         |
| C.4      | SCALED PLAN/ MAP OF SURVEY AREA .....                                                                                                         | 10        |
| C.5      | SITE/ HABITAT DESCRIPTION .....                                                                                                               | 12        |
| C.6      | FIELD SURVEYS .....                                                                                                                           | 13        |
| C.6.1    | DATES, TIMES AND PERSONNEL.....                                                                                                               | 13        |
| C.6.2    | VISUAL INSPECTION .....                                                                                                                       | 14        |
| C.6.3    | EMERGENCE SURVEYS.....                                                                                                                        | 14        |
| C.6.4    | CONSTRAINTS .....                                                                                                                             | 15        |
| C.7      | SURVEY RESULTS .....                                                                                                                          | 15        |
| C.7.1    | VISUAL INSPECTION .....                                                                                                                       | 15        |
| C.7.2    | EMERGENCE SURVEYS.....                                                                                                                        | 44        |
| C.8      | INTERPRETATION/ EVALUATION OF SURVEY RESULTS.....                                                                                             | 74        |
| C.8.1    | HABITAT SUITABILITY.....                                                                                                                      | 74        |
| C.8.2    | BAT ROOST POTENTIAL .....                                                                                                                     | 75        |
| C.8.3    | EVIDENCE OF BATS.....                                                                                                                         | 75        |
| <b>D</b> | <b>IMPACT ASSESSMENT IN ABSENCE OF MITIGATION .....</b>                                                                                       | <b>77</b> |
| D.1      | SHORT TERM IMPACTS: DISTURBANCE .....                                                                                                         | 77        |
| D.2      | LONG TERM IMPACTS: MODIFICATION.....                                                                                                          | 77        |
| D.3      | LONG TERM IMPACTS: LOSS .....                                                                                                                 | 78        |
| D.4      | LONG TERM IMPACTS: FRAGMENTATION AND ISOLATION.....                                                                                           | 78        |
| D.5      | POST DEVELOPMENT INTERFERENCE IMPACTS .....                                                                                                   | 78        |
| D.6      | PREDICTED SCALE OF IMPACT .....                                                                                                               | 78        |
| <b>E</b> | <b>LAND OWNERSHIP .....</b>                                                                                                                   | <b>79</b> |
| E.1      | MITIGATION SITE OWNERSHIP .....                                                                                                               | 79        |
| <b>F</b> | <b>REFERENCES .....</b>                                                                                                                       | <b>80</b> |

|          |                                   |           |
|----------|-----------------------------------|-----------|
| <b>G</b> | <b>ANNEXES.....</b>               | <b>81</b> |
| G.1      | PRE-EXISTING SURVEY REPORTS ..... | 81        |
| G.2      | RAW SURVEY DATA.....              | 81        |

## **A EXECUTIVE SUMMARY**

1. Linden Homes own the site at St Michaels Convent, 354 London Road, Waterlooville, Hampshire, PO7 7TF (approximate Ordnance Survey Grid Reference SU686096). The site consists of the existing convent buildings, a chapel, workshops, buildings used for storage and two garages (Buildings A-O). The convent buildings consist of several interconnected buildings some with several separate roof voids. All the buildings are currently unoccupied with the exception of Buildings A and L which are used by the caretaker and Building J which is used for storage. The site location is shown in *Figures C.4.1. and C.4.2.*; and a site plan showing the various buildings is given in *Figure C.4.3.* (see *Section C.4.*).
2. The site lies in central Waterlooville, off the A3, London Road. It is surrounded by housing with Hermitage Stream along its eastern boundary. The B2150 is located to the south, separated from the site by a single row of houses in Brookdale Close. The surrounding area is the urban and sub-urban area of Waterlooville with the A3(M) motorway to the east. Beyond Waterlooville to the west there is farmland.
3. There are large grounds associated with the convent that provide suitable habitat for foraging bats, particularly the grassland, orchard and woodland strip to the east of the buildings. These are adjacent to Hermitage Stream which, together with the trees and bushes along its bank, provides good quality foraging. The woodland strip connects to Hermitage Stream and provides a potential flight-line from the convent buildings down to the stream. Hermitage Stream runs along the eastern boundary of the site and to the north connects to the high quality foraging habitat of the large woodland of Queen's Inclosure and Park Wood SINC (ancient semi-natural woodland).
4. An internal and external inspection of the buildings was carried out during the daytime on the 27<sup>th</sup> March 2012 by licensed bat ecologist Victoria Russell MIEEM and Joseph Jenkins MSc GradIEEM from Hampshire Ecological Services Ltd.
5. Buildings A, G and H had high bat roost potential. This was confirmed by the presence of bat droppings (brown long-eared bat) in the roof voids of Buildings G and H and on the floor of Building A.
6. Buildings B, C, D, E, F, I and J were considered to have moderate bat roost potential and Building K was considered to have low to moderate bat roost potential.

Buildings L, M, N and O were considered to have low to negligible bat roost potential and there was no evidence of bats using these buildings.

7. Each building with moderate or high bat roost potential was subject to a minimum of two emergence surveys to obtain sufficient information on which bat species were present and the nature of the bat occupancy in order to apply for a European Protected Species Licence.
8. A desk study found records of four bat species, three of which regularly roost in buildings, in the 10km grid square (SU60) according to the National Biodiversity Network website (accessed 25/04/12).
9. Emergence surveys were carried out on the 7<sup>th</sup>, 22<sup>nd</sup>, 23<sup>rd</sup>, 24<sup>th</sup>, 28<sup>th</sup>, 29<sup>th</sup> & 30<sup>th</sup> May and the 6<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup>, 20<sup>th</sup>, 26<sup>th</sup> & 27<sup>th</sup> June 2012. During these Buildings Ba, Bb, E & F were identified as bat roosts for common pipistrelles. Bat activity maps showing the locations of emerging bats are given in *Figures C.7.2.1. - C.7.2.13.*
10. The maximum number of bats emerging from each building is as follows.
  - Building Ba - two common pipistrelles emerging from under a ridge tile in the centre of the southern side; under a tile on the southern roof; and under a tile on the northern roof.
  - Building Bb - two common pipistrelles emerging from the top of the western gable end (two); under a tile on the north side; and under the south-east eave (one).
  - Building E - one common pipistrelle emerging from the top of the window on the south gable end.
  - Building F - one common pipistrelle emerging from under hip tiles on the south-east corner.
  - Building H - two common pipistrelles emerging from by a dormer window on the east side.
11. Based on evidence from bat droppings and emergence surveys, Buildings Ba, Bb, E, F & H are active bat roosts for low numbers of non-breeding common pipistrelles and Buildings A, G & H are roosts for brown long-eared bats (at least in the recent past). There were also common pipistrelles, serotines and noctules foraging around the buildings and grounds. The bat emergence data is tabulated in *Table C.7.2.1.*
12. Despite thorough survey effort, there was no evidence of bats using Buildings C, D, I, J, K & M. Buildings L, N & O were not surveyed as they had negligible bat roost potential.
13. Without mitigation, impacts of the proposed development on bat species would be low.

## **B INTRODUCTION**

### **B.1 Background to activity/ development**

An initial bat survey consisting of an internal and external inspection of the buildings was carried out during the daytime on the 27<sup>th</sup> of March 2012 by licensed bat ecologist Victoria Russell MIEEM and Joseph Jenkins MSc GradIEEM from Hampshire Ecological Services Ltd. Bat emergence surveys were subsequently completed on the 7<sup>th</sup>, 22<sup>nd</sup>, 23<sup>rd</sup>, 24<sup>th</sup>, 28<sup>th</sup>, 29<sup>th</sup> & 30<sup>th</sup> May and the 6<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup>, 20<sup>th</sup>, 26<sup>th</sup> & 27<sup>th</sup> June 2012 to obtain sufficient information on which bat species were present and the nature of the bat occupancy in order to apply for an EPS Licence. The aim was to obtain sufficient information on which bat species were present and the nature of the bat occupancy in order to apply for a European Protected Species Licence.

The surveys were carried out in connection with a proposal to renovate and convert parts of existing convent buildings and the chapel (Buildings E, H & I); demolish the remainder; and to build new dwellings in the grounds.

### **B.2 Full details of proposed works on site that are to be covered by the licence**

The development proposes to:

- renovate and convert parts of existing convent buildings (Buildings E & H) to use as dwellings;
- convert the chapel (Building I) for use by light industry; and
- demolish Buildings A, Ba, Bb, C, D, G, J, K, L, M, N, O and part of F (and build new dwellings on the site).

As part of the renovation of Buildings E & H it will be necessary to remove the roofs to inspect and (if necessary) repair the beams. The roofs will then be re-roofed.

See *Figures C.4.1-3* for the location of the site and buildings.

## C SURVEY AND SITE ASSESSMENT

### C.1 Pre-existing information on the bat species at the survey site

Apart from survey data obtained for the purpose of the planning application and for this licence, the only records available have been from the National Biodiversity Network website ([www.nbn.org.uk](http://www.nbn.org.uk)), accessed on the 25<sup>th</sup> April 2012. These are given in Table C.1.1 below. Only the most recent records for any given location are listed.

Table C.1.1. Results of data search for bat records within the grid square SU60.

| Date     | Scientific name                                | Common name           | Grid reference | Precision (m) |
|----------|------------------------------------------------|-----------------------|----------------|---------------|
| 24/08/09 | <i>Myotis daubentonii</i>                      | Daubenton's bat       | SU6509         | 1000          |
| 31/12/84 | <i>Nyctalus noctula</i>                        | Noctule bat           | SU6604         | 1000          |
| 29/06/07 | <i>Pipistrellus</i> species                    | Pipistrelle bat       | SU631097       | 100           |
| 29/06/07 | <i>Pipistrellus</i> species                    | Pipistrelle bat       | SU634098       | 100           |
| 31/12/84 | <i>Pipistrellus pipistrellus</i> sensu lato    | Pipistrelle bat       | SU6809         | 1000          |
| 29/06/07 | <i>Pipistrellus pipistrellus</i> sensu stricto | Common pipistrelle    | SU607092       | 100           |
| 29/06/07 | <i>Pipistrellus pipistrellus</i> sensu stricto | Common pipistrelle    | SU608095       | 100           |
| 29/06/07 | <i>Pipistrellus pipistrellus</i> sensu stricto | Common pipistrelle    | SU609095       | 100           |
| 29/06/07 | <i>Pipistrellus pipistrellus</i> sensu stricto | Common pipistrelle    | SU633098       | 100           |
| 29/06/07 | <i>Pipistrellus pipistrellus</i> sensu stricto | Common pipistrelle    | SU635098       | 100           |
| 29/06/07 | <i>Pipistrellus pipistrellus</i> sensu stricto | Common pipistrelle    | SU635098       | 100           |
| 31/12/00 | <i>Rhinolophus ferrumequinum</i>               | Greater horseshoe bat | SU60           | 10000         |

### C.2 Status of species

Common pipistrelles were seen emerging and foraging on site. Brown long-eared bat droppings were found in Buildings A, G & H. In addition, serotines and noctules were seen foraging on site.

Pipistrelles (*Pipistrellus pipistrellus* sensu lato, *Pipistrellus pipistrellus* sensu stricto and *Pipistrellus pygmaeus*) are the most common bats in the UK and are widespread across Hampshire. They are not listed on the IUCN Red List of threatened species. No records for the soprano pipistrelle (*Pipistrellus pygmaeus*) exist prior to 1998 because the common pipistrelle (*P. pipistrellus*) and soprano pipistrelle were considered to be the same species. The soprano pipistrelle is a UK BAP Priority Species.

Brown long-eared bat (*Plecotus auritus*) is the second most common bat species in the UK and widespread across Hampshire. The commoner brown long-eared bat (*Plecotus auritus*) is difficult to

distinguish from the very rare grey long-eared bat (*Plecotus austriacus*), which is only found in southern England. Populations of long-eared bats have declined in Britain due to changing land use and agricultural intensification resulting in the loss of suitable feeding habitats and roosting locations. The long-eared bat is particularly susceptible to pesticides, including those used on exposed timbers in roofs. They are listed on the IUCN Red List of threatened species. Both species are known to use buildings for roosting, with brown long-eared bats also utilising trees. The brown long-eared bat is a UK BAP Priority Species.

Serotine (*Eptesicus serotinus*) is an uncommon species in the UK. They are restricted to the south of England and are scarce across Hampshire. Decline in serotine numbers is likely to be a result of the loss of feeding habitat where large insects, on which they prey (such as chafers), can be found. Serotine roosts are almost entirely within buildings so the species are vulnerable to the effects of building works and the use of toxic chemicals in remedial timber treatment.

Noctule (*Nyctalus noctula*) is a relatively common species and is particularly widespread in wooded areas across England, as well as Hampshire, but populations have declined as a result of the loss of suitable feeding habitat due to modern intensive agricultural practices. They are listed on the IUCN Red List of threatened species. Although primarily tree dwellers, this species is known to rarely roost in buildings. The noctule is a UK BAP Priority Species.

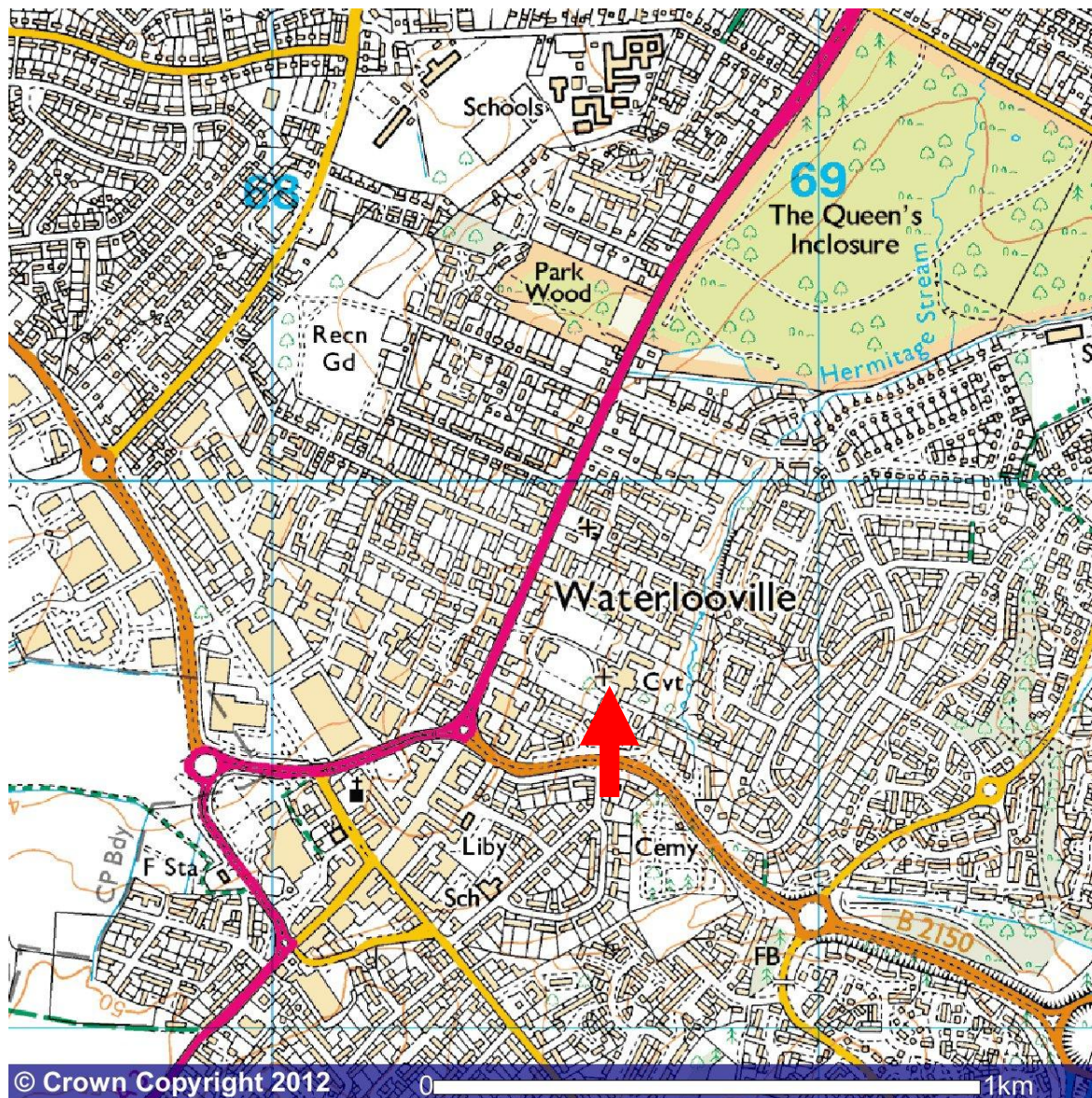
### **C.3 Objectives of the survey**

The initial site assessment aimed to establish if the buildings were suitable for roosting bats and if the surrounding habitat was suitable for foraging and roosting. It also aimed to determine the current and past bat usage of the affected buildings, such as for maternity roosts or hibernation. This entailed internal and external inspections of the structures.

Dusk emergence surveys were carried out on the buildings to determine if bats were emerging from the buildings, and if so, what species were present. The conservation importance of each species status on site was assessed. This information will be used to impose suitable working practices, including timings, to minimise impact on bats during the development, and to provide appropriate and proportional compensatory roosts for bats during and after the development, as proposed in this Method Statement.

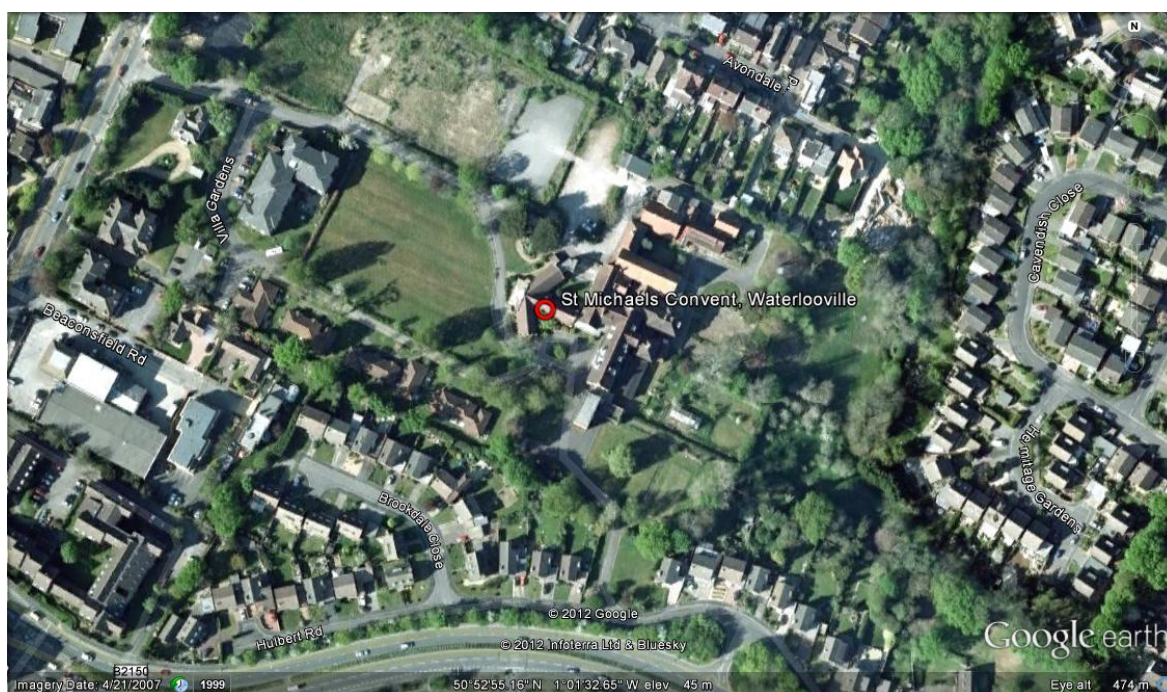
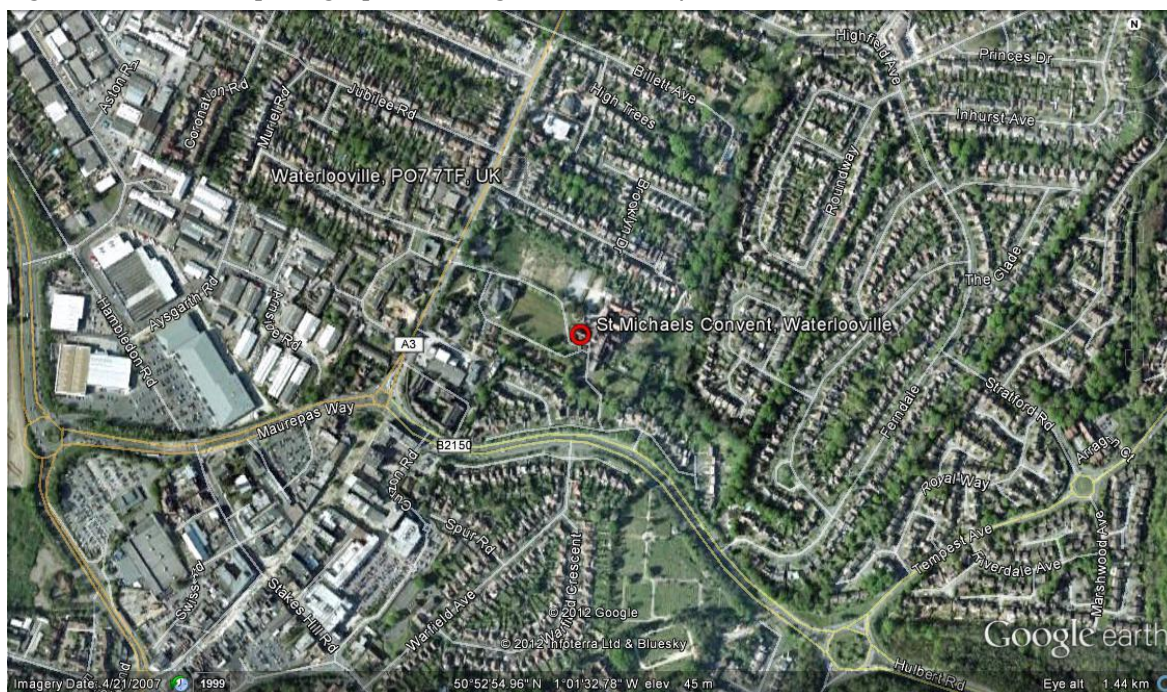
## C.4 Scaled plan/ map of survey area

Figure C.4.1. Site location indicated by red arrow.



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Figure C.4.2. Aerial photographs showing the location of the site.



*Figure C.4.3. Site plan showing the existing buildings (outlined in red).*



### **C.5 Site/ habitat description**

The site consists of a chapel and the buildings and grounds of the former St Michael's convent. The buildings and extensions date from the Victorian period to the 1960's.

The convent and its outbuildings are located in the centre of the site surrounded by hardstanding and paving. The majority of the site is lawns, flowerbeds and ornamental planting. There is also an orchard and a strip of woodland along part of the southern boundary. Woodland connects to

Hermitage Stream which runs along the eastern boundary. To the north this connects to the woodland of Queen's Inclosure and Park Wood SINC (on the opposite side of the A3 to Queen's Inclosure).

The site lies in central Waterlooville, off the A3, London Road. It is surrounded by housing with Hermitage Stream along its eastern boundary. The B2150 is located to the south, separated from the site by a single row of houses in Brookdale Close. The surrounding area is the urban and sub-urban area of Waterlooville with the A3(M) motorway to the east. Beyond Waterlooville to the west there is farmland.

## **C.6 Field surveys**

### **C.6.1 Dates, times and personnel**

The external and internal inspections were conducted during the daytime on the 27<sup>th</sup> March 2012 by licensed bat ecologist Victoria Russell MIEEM who has over 14 years experience in ecological consultancy and is a full member of the Institute of Ecology and Environmental Management (IEEM). She holds a Natural England licence allowing the disturbance and handling of bats for the purposes of survey in all counties of England (current survey licence number 20113626). She was accompanied by a second ecologist Joseph Jenkins MSc GradIEEM who is experienced in carrying out bat surveys using detectors as well as undertaking roost surveys with licensed bat ecologists.

Subsequently, emergence surveys were carried out on Buildings A-M on the 7<sup>th</sup>, 22<sup>nd</sup>, 23<sup>rd</sup>, 24<sup>th</sup>, 28<sup>th</sup>, 29<sup>th</sup> & 30<sup>th</sup> May and the 6<sup>th</sup>, 12<sup>th</sup>, 13<sup>th</sup>, 20<sup>th</sup>, 26<sup>th</sup> & 27<sup>th</sup> June 2012. The surveys commenced at least fifteen minutes before sunset and continued for at least an hour and a half after sunset (long after bats would have exited). The weather was suitable conditions for bat emergence and foraging on all occasions. Details of the weather, air temperature and times are given in *Table C.7.2.1*.

The emergence surveys were led by John Poland CEnv MIEEM CBiol MSB and Victoria Russell MIEEM. John Poland CEnv MIEEM CBiol MSB is a full member of IEEM, a Chartered Environmentalist (CEnv) and a Chartered Biologist (CBiol) with 12 years experience in ecological consultancy and has held a Natural England licence allowing the disturbance and handling of bats for the purposes of survey in all counties of England since 2004 (current survey licence number 20121144).

They were accompanied by up to five additional Hampshire Ecological Services Ltd ecologists on each survey (Phil Budd, Lyndsey De Valmency, Louise Fairless, Claire Ford, Ed Faherty, Ruth Kernohan, Kirsty Pearman and Hannah Robinson). All are trained in carrying out bat surveys using detectors.

All staff adhere to IEEM's *Code of Professional Conduct*.

This Method Statement was written by Victoria Russell MIEEM and reviewed by John Poland CEnv MIEEM CBiol MSB (who is the proposed Licensee Ecologist). John Poland has been responsible for 19 other bat EPS licences as the licensee ecologist in the past three years.

### *C.6.2 Visual inspection*

The buildings were subjected to a thorough inspection for evidence of bat roosts. Access and inspection equipment including binoculars and a powerful torch and a fibrescope were available as necessary.

The buildings were examined outside using the high-powered torch to illuminate all areas. It involved looking for bat droppings on the ground or adhering to walls and potential bat entry and exit points.

Signs of the principal species of bat that habitually roost and breed in buildings were searched for. These are pipistrelle species, long-eared bat species and serotine bats. Previous records show that one of these bat species (pipistrelle) have been sighted within the 10km grid square in which the site lies, indicating that they might be roosting within the buildings.

In addition, details of the buildings' construction were also noted and these are summarised in *Section C.7.1*.

### *C.6.3 Emergence surveys*

Surveyors were equipped with ultrasonic frequency-division and heterodyne bat detectors (BatBox Duet™) and observed the buildings for emerging bats. Bat detectors are used so that surveyors can identify most bat species in the field, using the heterodyne output in combination with bat shape, flight pattern and behaviour. In addition, solid-state recorders (Tascam® DR-O7 and Roland™ R-05) were employed to record bat calls for later sonogram analysis using BatSound™ (v4.0) computer software. Frequency-division (BatBox Duet™), whereby the ultrasound is divided by 10 into an audible range, has a considerable advantage over time-expansion for survey work as it allows recordings to be taken in real time. This ensures that all bat activity is recorded.

The surveyors were located on sides of the buildings with good views of potential bat access points identified during the initial site visit. The timing of the visits, from early evening until after dark, was aimed at detecting active bats in the vicinity. When it became too dark for visual observation, electronic bat detectors were used to listen for the ultrasonic sounds produced by bats either flying in the vicinity or emerging from within the buildings.

The surveyors recorded all bat activity encountered but particular attention was focussed on bats emerging from the buildings. The results were documented by noting the time, bat species and

behaviour (*e.g.* commuting, foraging, social interaction *etc.*). Surveyors were in constant contact via hand held radios so that information could be easily exchanged regarding bat emergences and activity. The building had good lines of sight for bat surveying, so it is unlikely that even quietly echolocating bats were missed.

#### **C.6.4 Constraints**

Evidence for some crevice-dwelling bats can be difficult to find and evidence for bats could exist hidden under roof panels and frames, therefore emergence surveys would have been necessary regardless. Emergence surveys, covering all potential access points is considered reasonable survey effort for a summer roost licence application.

### **C.7 Survey results**

#### **C.7.1 Visual inspection**

The results of the building inspection including construction details, potential bat access points, and any bat evidence observed are summarised in *Table C.7.1.1.* overleaf. The location of potential bat access points are shown in *Figures C.7.1.1.-C.7.1.*

*Table C.7.1.1. Summary of building construction details, bat roost potential and any evidence of bats observed.*

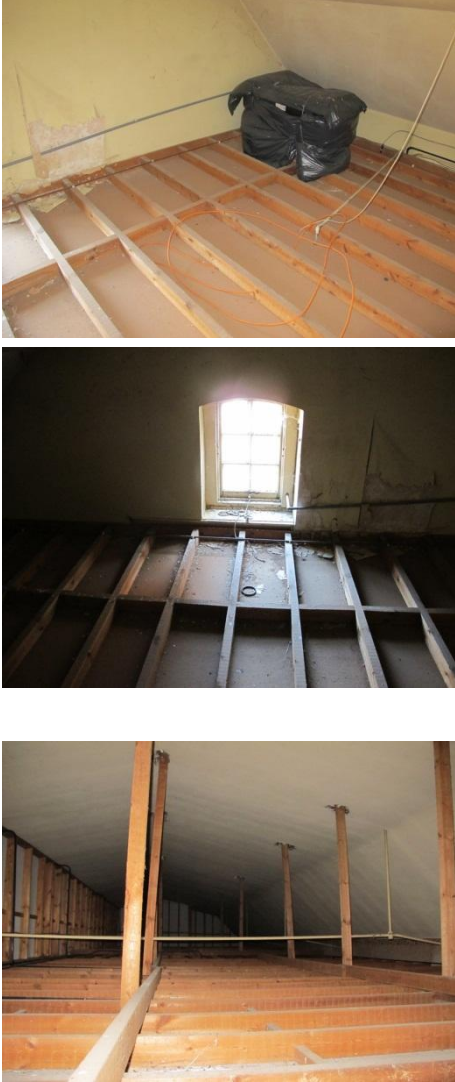
| Building | Photograph                                                                         | Bat Roost Potential                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A        |  | <p>Building A is a one-storey brick and breezeblock building with a pitched asbestos sheet roof. There is no internal lining or insulation. A small area of wooden cladding is present on the western elevation. There is an annex on the eastern end, which is constructed from bricks and breezeblocks, with a pitched, tiled roof on timber beams. The roof within the annex is lined with wooden boards.</p> <p>Bargeboards are present around the exterior of the building, and there are several gaps into the interior. A lifted tile on the annex provides entry to the interior of the roof void, whilst the asbestos roof of the main part of the building is raised. There are several loose or missing tiles on the annex (front and side). The interior of the main building is well lit to the roof (approximately 10m high). Mouse droppings are scattered throughout. This building has <b>high bat roost potential</b> which was confirmed by the presence of bat droppings on the floor of the annex. Therefore, <b>this building is a bat roost.</b></p> |

|                 |                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p><b>B</b></p> |  | <p>A large two-storey brick outbuilding with a pitched tiled roof. There are two voids both of which are lined with wooden boards. The interior has a suspended ceiling. The main void above the suspended ceiling has a row of windows running along the north and south elevations making the interior void very well lit. The frame within the voids is wood with ridge beams present at the apex. There were very few cobwebs within the voids, although no evidence of bats was found. Mouse and rat droppings were scattered throughout the voids and the ground floor of the building. It has several loose or missing tiles that could provide access to bats, as well as a hole in the brickwork on the western elevation. However, the high levels of light in the roof voids means that bats may be disturbed. Therefore, it has <b>moderate bat roost potential</b>.</p> |

|   |                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| C |  | <p>Building C is a two-storey brick house with a hipped, pitched tiled roof. The roof void is lined with roofing felt and is insulated with fiberglass. The frame is wooden with a wooden ridge beam. The void has a maximum height of approximately 3m. Light enters the void through four large tears in the felt lining. Rodent droppings were found throughout. There were few cobwebs within the void, but no evidence of bats. Bargeboards and a chimney with lead-flashing present on the exterior of the building. There are several lifted tiles on the roof, and an area of lifted lead-flashing on the southern elevation of the chimney. This building has <b>moderate bat roost potential</b>.</p> |

|                 |                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| <p><b>D</b></p> |  | <p>A three-storey brick building with a pitched tiled roof. There is an extension with wooden cladding on the east side. Two roof voids are present, one small void containing a water tank on the east and a larger void on the west. The smaller of the two voids is lined with wooden boards. It contains few cobwebs and is well-sealed. The void is filled with pigeon droppings. The larger of the voids has wooden beams, contains fiberglass insulation, and is lined with plasterboard. No evidence of bats was visible at the time of survey, although some rodent droppings were present. There are gaps into the roof void via a hole to the right of the red drain pipe on the west side and via several slipped tiles. Lead-flashing and a porch are present on the exterior of the structure. There are climbing plants including <i>Hedera helix</i> (Ivy) on the northern elevation. This building has <b>moderate bat roost potential</b>.</p> |

|   |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|   |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| E |  | <p>A two-storey brick building with a pitched tiled roof. The interior of the void is lined with plaster and devoid of cobwebs. A small area of the north end of the roof void is partitioned off, with an access hole into the main part of the roof void. It has a large window, ensuring much of this area is well lit. Rodent droppings were scattered throughout the void, but no evidence of bats was found. There are several raised tiles on the roof and a gap in the soffits in which birds were nesting at the time of survey. There are bargeboards and soffit boxes around the exterior of the roof, and a chimney with lifted lead-flashing. This building has <b>moderate bat roost potential</b>.</p> |

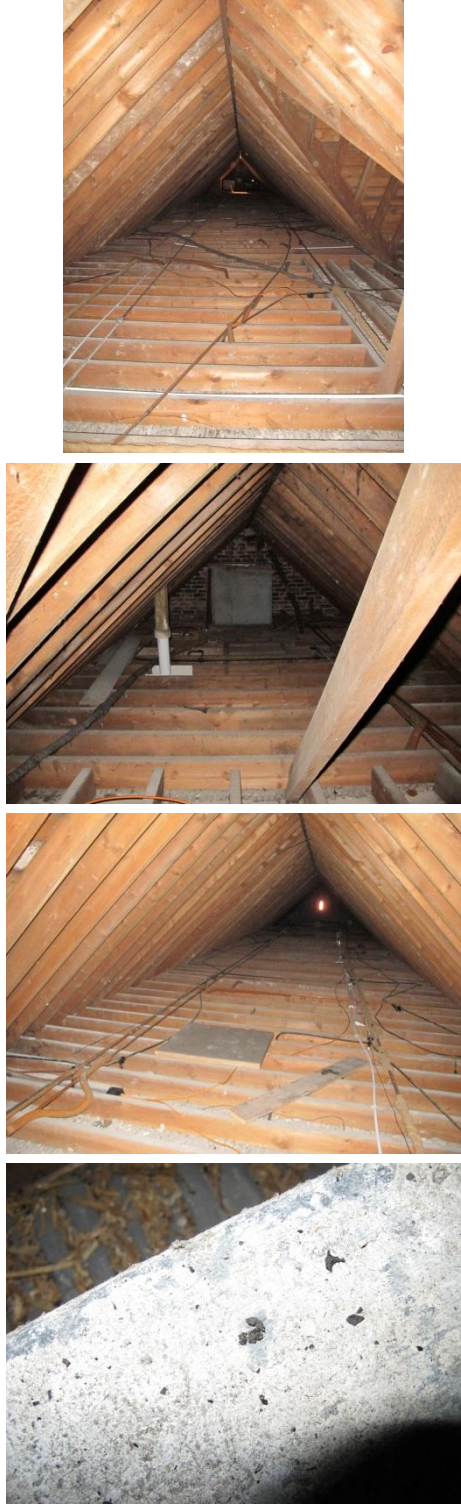
|          |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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|          |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>F</b> |  | <p>Building F is an extension to the east of Building E. It is a brick building with a pitched, hipped, tiled roof. The roof void is lined with wooden boards and has a wooden and metal frame. There were few cobwebs within the void. Rodent droppings were scattered throughout but no evidence of bats was found. On the eastern end of the building several hip tiles have and missing and slipped. In addition, there are missing and lifted tiles on the roof and lifted lead-flashing and gaps either side of dormer windows. There is a small area of hanging tiles on the northern side. Bargeboards, soffit boxes, dormers windows, a chimney and</p> |



lead-flashing are present on the exterior of the building. This building has **moderate bat roost potential**.

|          |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          |                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>G</b> |    | <p>A brick built two-storey building with a pitched, hipped, tiled roof. The roof void is open and lined with wooden boards. There are very few cobwebs. Rodent droppings from rodents were scattered throughout. There are missing and slipped hip tiles on the north and south elevations, slipped and missing tiles on the main slope of the roof and lifted lead-flashing. Bargeboards, soffit boxes and a chimney with lead-flashing are present on the exterior. This building has <b>high bat roost potential</b>. This was confirmed by the presence of bat droppings. Therefore, <b>this building is a bat roost</b>.</p> |

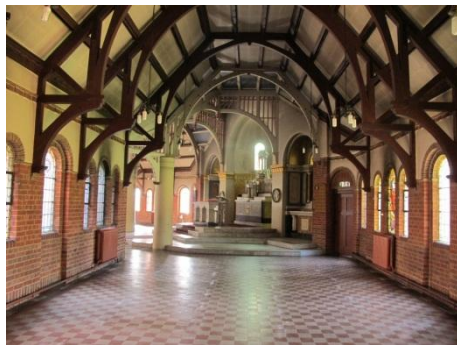
|          |                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|          |                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>H</b> |    | <p>A brick built two-storey building with a pitched tiled roof. Its roof is constructed from wooden beams with a wooden ridge and is lined with wooden boards. It has an open roof void with no insulation between the joists. Light is visible at the northern end of the void, through a large gap in the bricks (covered in wire). There are few cobwebs within the void. Rodent droppings were scattered throughout. There are several lifted and missing tiles that could provide bat access into the roof void. Also, there are two raised ridge tiles on the southern apex of the building. In addition, there is lifted lead-flashing around the northern dormer on the western elevation and a raised tile on the inner valley of the connection between buildings H and I. There are gaps into the soffits either side of the southern gable end. This building has <b>high bat roost potential</b>. This was confirmed by the presence of bat droppings. Therefore, <b>this building is a bat roost</b>.</p> |

|  |                                                                                    |  |
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|  |  |  |
|--|------------------------------------------------------------------------------------|--|

I



Building I is a brick-built Victorian chapel with a pitched, tiled roof. It was not possible to access the roof void between the roof and the interior plaster of the chapel's ceiling. The exterior is well-sealed, with the exception of gaps under lead-flashing on the gable ends on the north, south and west elevations; and where a connection to the convent has been demolished (northern elevation) and there are multiple gaps into the structure (partially covered by roofing felt). There are also raised tiles on a small lean-to building attached to the chapel. This building has **moderate bat roost potential**.



|                 |                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p><b>J</b></p> |    | <p>Building J is brick-built with a pitched, tiled roof. The interior is open to the ceiling, which has a wooden ridge and is paneled with wood. Rodent droppings were scattered throughout. There are several raised tiles including ones at both gable ends where the mortar is missing beneath them. There is a small tiled porch on the western elevation with raised tiles; and bargeboards on the northern and southern elevations. This building has <b>moderate bat roost potential</b>.</p> |

|                 |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>K</b></p> |   | <p>Building K is a three-storey extension built circa 1960. The building is made from brick, with a flat roof and lead-flashing. The climber <i>Hedera helix</i> (Ivy) covers the eastern elevation on the ground floor. Some of the brickwork on the western elevation has crumbled and created a gap behind the lead-flashing. This building has <b>low to moderate bat roost potential</b>.</p> |
| <p><b>L</b></p> |  | <p>Building L is a single-storey, flat roofed garage. It is brick-built with a sheet metal roof. It appears well-sealed. It has <b>negligible bat roost potential</b>.</p>                                                                                                                                                                                                                         |

|          |                                                                                    |                                                                                                                                                                                                                                                   |
|----------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>M</b> |   | <p>Building M is a single-storey, flat roofed extension to building H. It is constructed of wood and glass, with a felt roof. The exterior is wooden cladded, although this appears to be well-sealed. It has <b>low bat roost potential</b>.</p> |
| <b>N</b> |   | <p>Building N is a single-storey disused greenhouse. Several of the glass panes are broken, and the interior is filled with <i>Rubus fruticosus</i> agg. (Bramble). It has <b>negligible bat roost potential</b>.</p>                             |
| <b>O</b> |  | <p>Building O is a single-storey brick garage with a flat roof covered in roofing felt. It has <b>negligible bat roost potential</b>.</p>                                                                                                         |

*Figure C.7.1.1. Location of potential bat access points on Building A.*



*Figure C.7.1.2. Location of potential bat access points on Building A.*



*Figure C.7.1.3. Location of potential bat access points on Building A.*



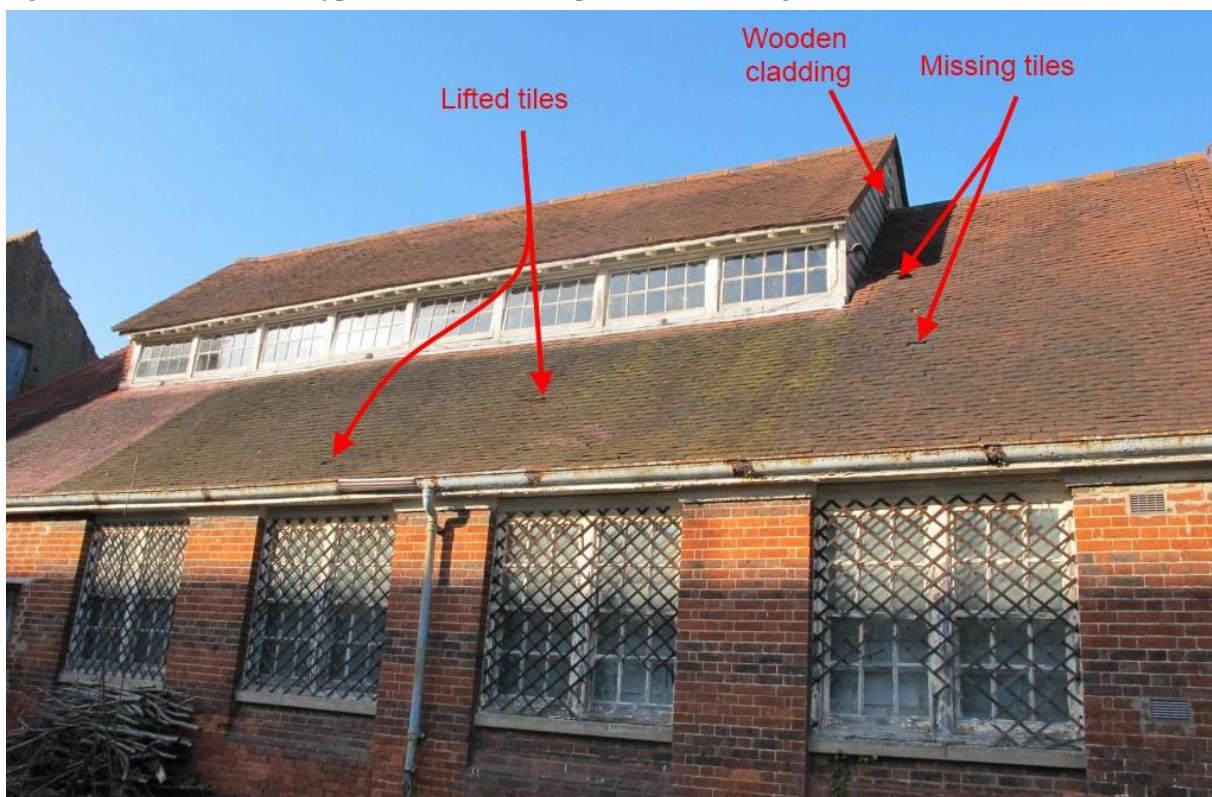
*Figure C.7.1.4. Location of potential bat access points on Building B.*



*Figure C.7.1.5. Location of potential bat access points on Building B.*



*Figure C.7.1.6. Location of potential bat access points on Building B.*



*Figure C.7.1.7. Location of potential bat access points on Building B.*



*Figure C.7.1.8. Location of potential bat access points on Building C.*



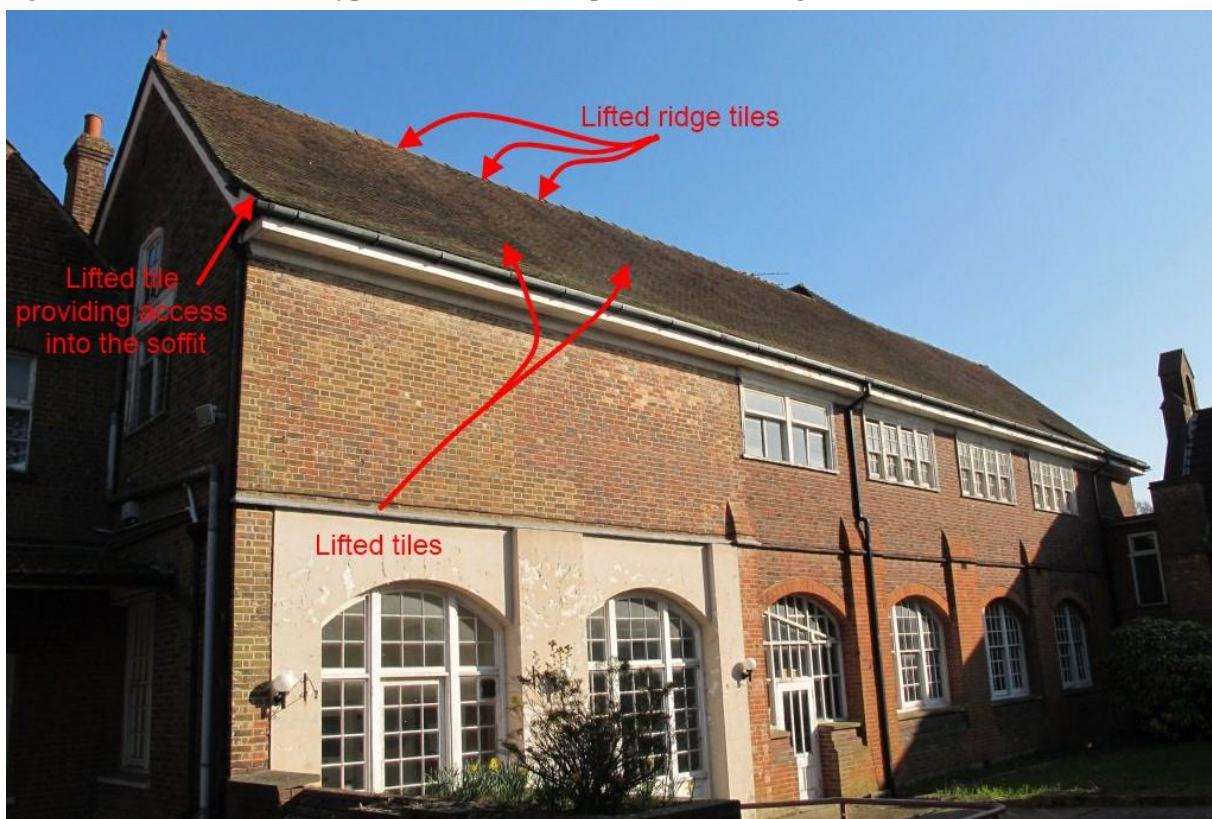
*Figure C.7.1.9. Location of potential bat access points on Building E.*



Figure C.7.1.10. Location of potential bat access points on Buildings E and H.



Figure C.7.1.11. Location of potential bat access points on Building E.



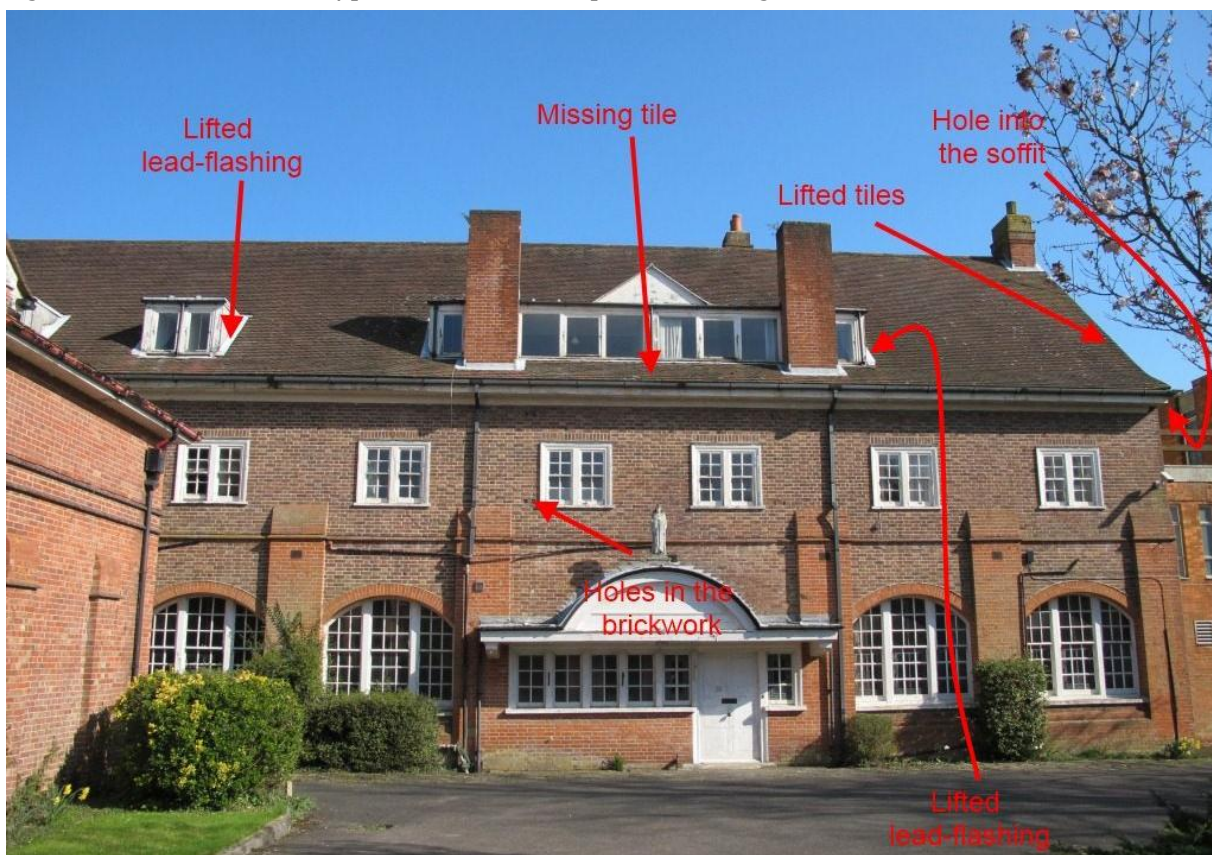
*Figure C.7.1.12. Location of potential bat access points on Building F.*



*Figure C.7.1.13. Location of potential bat access points Building G.*



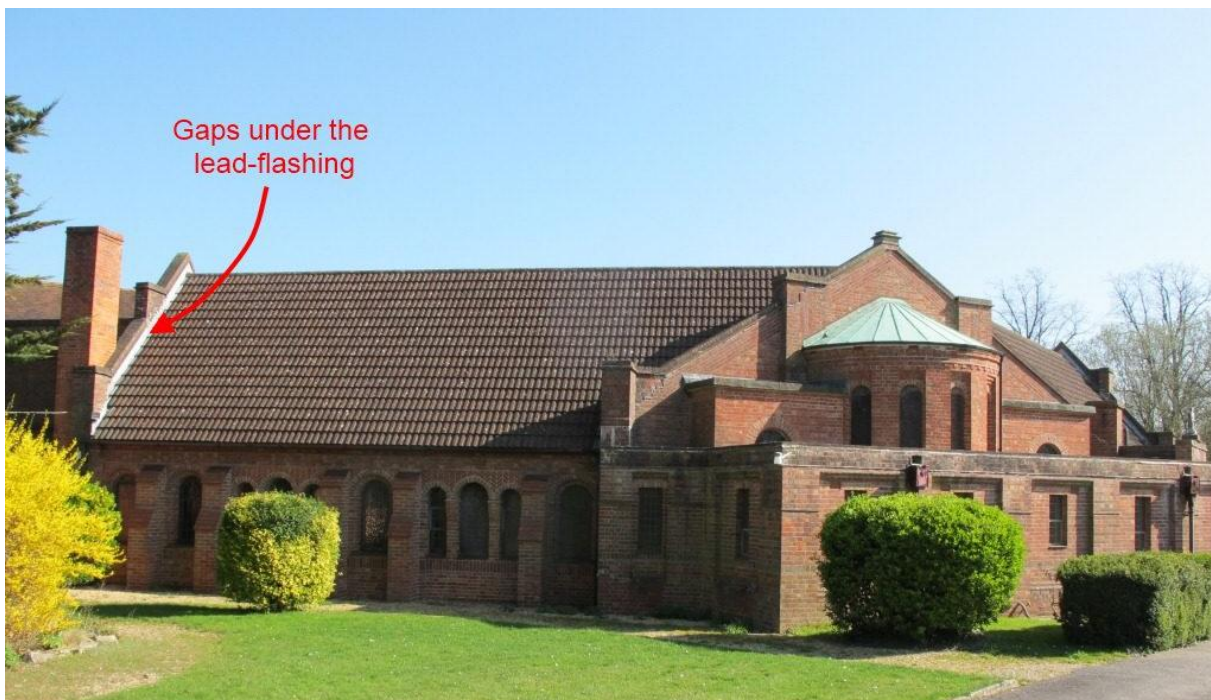
*Figure C.7.1.14. Location of potential bat access points Building H.*



*Figure C.7.1.15. Location of potential bat access points Building H.*



*Figure C.7.1.16. Location of potential bat access points on Building I.*



*Figure C.7.1.17. Location of potential bat access points on Building I.*



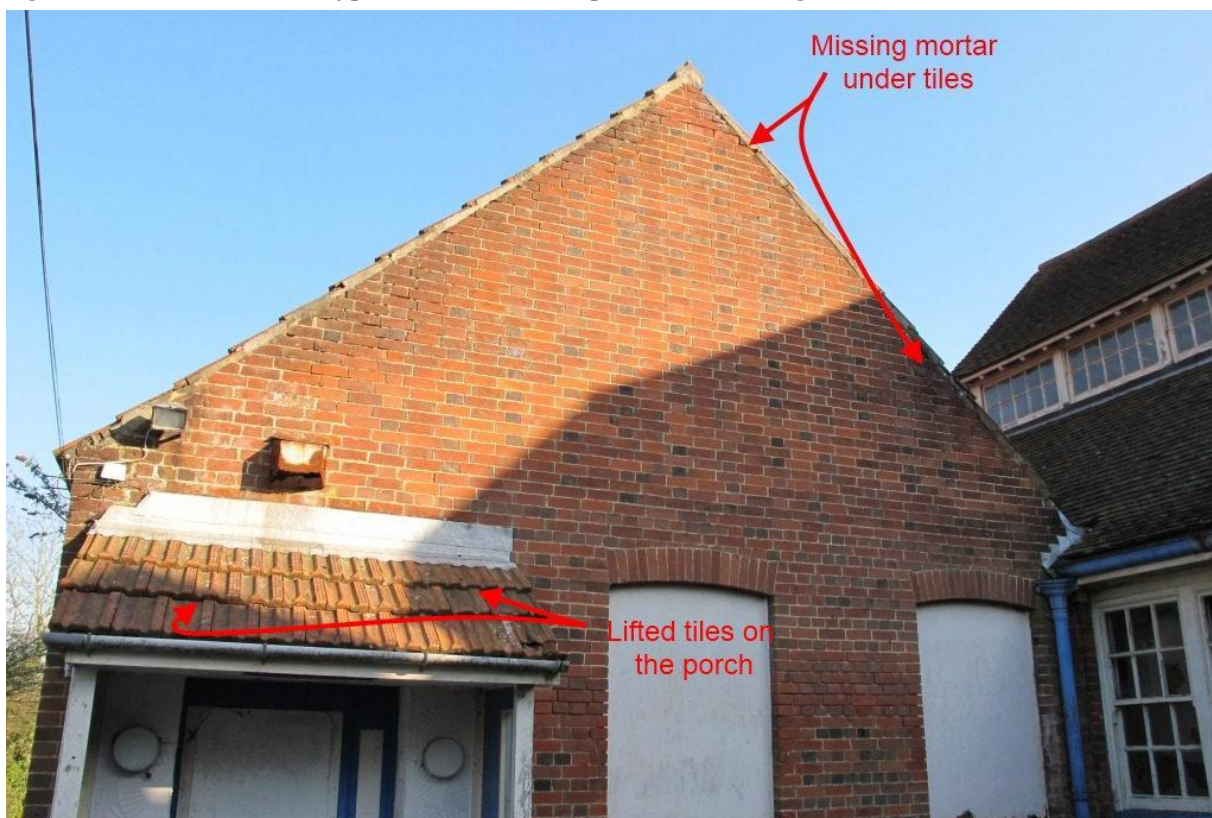
*Figure C.7.1.18. Location of potential bat access points on Building I.*



*Figure C.7.1.19. Location of potential bat access points on Building I.*



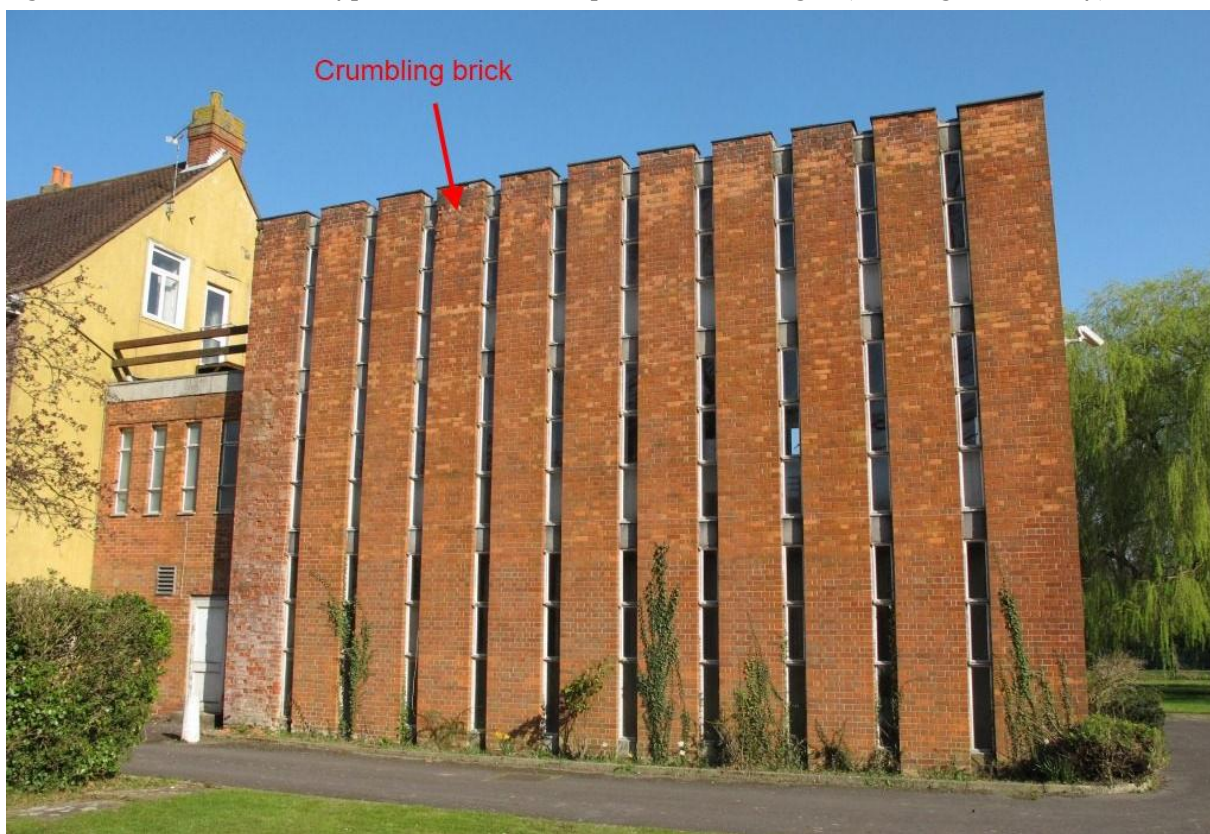
*Figure C.7.1.20. Location of potential bat access points on Building J.*



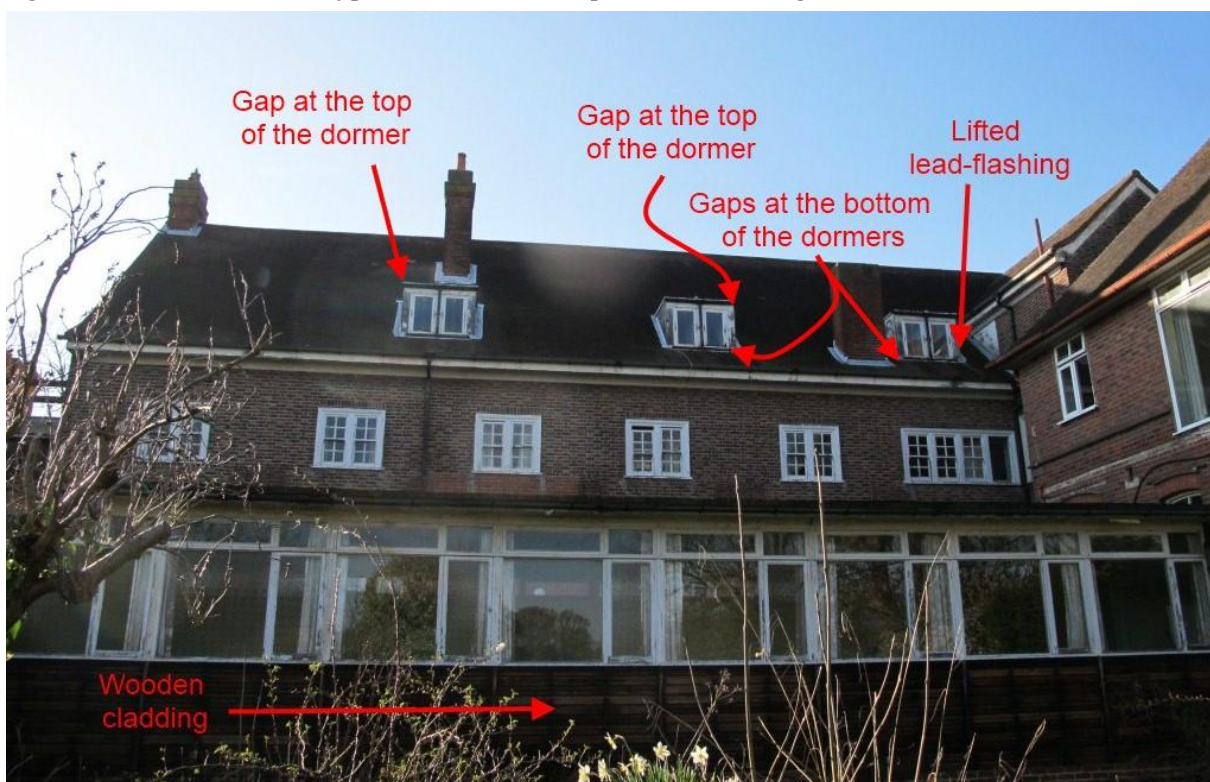
*Figure C.7.1.21. Location of potential bat access points on Buildings B and J.*



*Figure C.7.1.22. Location of potential bat access points on Building K (Building H to the left).*



*Figure C.7.1.23. Location of potential bat access points on Buildings H and M.*



### C.7.2 Emergence surveys

The maximum number of bats emerging from each building is as follows.

- Building Ba - **two common pipistrelles** emerging from under a ridge tile in the centre of the southern side; under a tile on the southern roof; and under a tile on the northern roof.
- Building Bb - **two common pipistrelles** emerging from the top of the western gable end (two); under a tile on the north side; and under the south-east eave (one).
- Building E - **one common pipistrelle** emerging from the top of the window on the south gable end.
- Building F - **one common pipistrelle** emerging from under hip tiles on the south-east corner.
- Building H - **two common pipistrelles** emerging from by a dormer window on the east side.

No bats were observed emerging from Buildings A, C, D, G, I, J, K & M. However, Building A had brown long-eared droppings on the interior floor in one corner and Building G had brown long-eared droppings in the roof void.

On five emergence surveys (the 7<sup>th</sup>, 22<sup>nd</sup>, 28<sup>th</sup> & 29<sup>th</sup> May and the 6<sup>th</sup> June 2012) no bats were observed emerging from the observed buildings.

Emergence surveys were not carried out on Buildings L, N & O as they have negligible bat roost potential.

The dates each building was observed and whether bats were seen emerging is tabulated in *Table C.7.2.1.* below.

*Table C.7.2.1. Observed building (bold) and number and species of bats observed emerging. Buildings highlighted in red had bats emerging on that survey date.*

| Date     | Building                                                        | Emerging bats                                                                        |
|----------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------|
| 07/05/12 | <b>A</b> B C <b>D</b> E F <b>G</b> <b>H</b> I J K               | No emerging bats                                                                     |
| 22/05/12 | A B C D E <b>F</b> <b>G</b> <b>H</b> <b>I</b> J K               | No emerging bats                                                                     |
| 23/05/12 | <b>A</b> <b>B</b> <b>C</b> <b>D</b> E F G H I <b>J</b> K        | P45 emerging from under a ridge tile in the centre of the south side of Building Ba  |
| 24/05/12 | <b>A</b> <b>B</b> <b>C</b> <b>D</b> E <b>F</b> <b>G</b> H I J K | P45 emerging from under slipped hip ridge tiles on the south-east side of Building F |
| 28/05/12 | A B C D E F G <b>H</b> <b>I</b> J K                             | No emerging bats                                                                     |
| 29/05/12 | A B C D E <b>F</b> <b>G</b> <b>H</b> I J <b>K</b> <b>M</b>      | No emerging bats                                                                     |

|          |                                |                                                                                                                                                                                                                                                                                                       |
|----------|--------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 30/05/12 | <b>A B C D E F G H I J K</b>   | 2 P45 emerging from Building Bb - one from the north side, one from under the south-east eave.                                                                                                                                                                                                        |
| 06/06/12 | <b>A B C D E F G H I J K</b>   | No emerging bats                                                                                                                                                                                                                                                                                      |
| 12/06/12 | <b>A B C D E F G H I J K</b>   | P45 emerging from under slipped hip ridge tiles on south-east side of Building F                                                                                                                                                                                                                      |
| 13/06/12 | <b>A B C D E F G H I J K M</b> | P45 emerging from Building B. P45 emerging from east side of Building H then commuting west                                                                                                                                                                                                           |
| 20/06/12 | <b>A B C D E F G H I J K M</b> | 2 P45 emerging from by dormer window on the east side of Building H & 2 P45 subsequently seen re-entering the east side of Building H. P45 emerging from the top of the south-west facing window on the south gable end of Building E.                                                                |
| 26/06/12 | <b>A B C D E F G H I J K M</b> | P45 emerging from under slipped hip ridge tile near from apex on the south-east side of Building F                                                                                                                                                                                                    |
| 27/06/12 | <b>A B C D E F G H I J K M</b> | P45 emerging from under slipped hip ridge tile approx 1.5m from apex on the south-east side of Building F. 2 P45 emerging from the top of the west gable end on Building Bb. P45 emerging from the north side of Building Ba. P45 emerging from half way up the roof on the south side of Building Ba |

The data from the emergence surveys is tabulated in *Table C.7.2.2.* and the bat activity maps are shown in *Figures C.7.2.1. - C.7.2.13.*

Table C.7.2.2. Bat activity results.

|                   |                                                                             |                    |                                                                               |
|-------------------|-----------------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------|
| <b>Date</b>       | <b>07/05/2012</b>                                                           |                    |                                                                               |
| <b>Temp</b>       | <b>11°C</b>                                                                 |                    |                                                                               |
| <b>Weather</b>    | <b>Overcast with rain prior to the start of the survey</b>                  |                    |                                                                               |
| <b>Ecologists</b> | <b>John Poland, Victoria Russell, Ruth Kernohan and Lyndsey de Valmency</b> |                    |                                                                               |
| <b>Observer</b>   | <b>Time</b>                                                                 | <b>Species</b>     | <b>Observation</b>                                                            |
| -                 | 20:23                                                                       | -                  | Ecologists commenced observations                                             |
| -                 | 20:37                                                                       | -                  | Sunset                                                                        |
| JP                | 20:59                                                                       | Common pipistrelle | Heard but not seen                                                            |
| JP                | 20:57                                                                       | Common pipistrelle | Commuting west from Building D                                                |
| JP                | 21:44                                                                       | Brown long-eared   | Seen foraging low in front of Building E but not heard                        |
| VR                | 21:26                                                                       | Pipistrelle        | Heard but not seen                                                            |
| LDV               | 20:57                                                                       | Pipistrelle        | Commuting south-west between Buildings A & J                                  |
| LDV               | 21:53                                                                       | Noctule            | Heard but not seen                                                            |
| LDV               | 21:56                                                                       | Common pipistrelle | Heard but not seen                                                            |
| RK                | 21:37                                                                       | Common pipistrelle | Heard but not seen                                                            |
| VR                | 21:53                                                                       | Noctule            | Heard but not seen                                                            |
| -                 | 22:07                                                                       | -                  | Ecologists ceased observations                                                |
| <b>Date</b>       | <b>22/05/2012</b>                                                           |                    |                                                                               |
| <b>Temp</b>       | <b>19°C</b>                                                                 |                    |                                                                               |
| <b>Weather</b>    | <b>Hot &amp; sunny prior to sunset. Gusts of wind after sunset.</b>         |                    |                                                                               |
| <b>Ecologists</b> | <b>John Poland, Victoria Russell, Ruth Kernohan and Philip Budd</b>         |                    |                                                                               |
| <b>Observer</b>   | <b>Time</b>                                                                 | <b>Species</b>     | <b>Observation</b>                                                            |
| -                 | 20:44                                                                       | -                  | Ecologists commenced observations                                             |
| -                 | 20:59                                                                       | -                  | Sunset                                                                        |
| JP & PB           | 21:13                                                                       | Two noctules       | Commuting from north-east and then foraging over Building H                   |
| VR & RK           | 21:14                                                                       | Two noctules       | Foraging over Building I                                                      |
| PB                | 21:15                                                                       | Noctule            | Commuting north                                                               |
| VR                | 21:16                                                                       | Noctule            | Foraging over buildings                                                       |
| VR                | 21:16                                                                       | Noctule            | Foraging over buildings and grounds                                           |
| RK                | 21:16                                                                       | Common pipistrelle | Commuting south on the west side of Building H                                |
| RK                | 21:18                                                                       | Common pipistrelle | Commuting east and then south along the west side of Buildings H & K          |
| PB                | 21:22                                                                       | Common pipistrelle | Heard but not seen                                                            |
| JP                | 21:25                                                                       | Common pipistrelle | Heard but not seen                                                            |
| PB                | 21:25                                                                       | Common pipistrelle | Heard but not seen                                                            |
| VR                | 21:26                                                                       | Common pipistrelle | Foraging around roundabout on the south side of Buildings E & I               |
| RK                | 21:28                                                                       | Common pipistrelle | Foraging & feeding around the roundabout on the south side of Buildings E & I |

|    |       |                         |                                                                         |
|----|-------|-------------------------|-------------------------------------------------------------------------|
| PB | 21:30 | Common pipistrelle      | Heard but not seen. Feeding buzzes                                      |
| PB | 21:32 | Common pipistrelle      | Commuting east low down over the roof of Building E                     |
| VR | 21:33 | Common pipistrelle      | Foraging & feeding to south of Building I                               |
| VR | 21:33 | Brown long-eared        | Seen but not heard                                                      |
| JP | 21:34 | Common pipistrelle      | Foraging around courtyard between Buildings E & I                       |
| RK | 21:34 | Common pipistrelle      | Feeding on the south side of Buildings E & I                            |
| JP | 21:37 | Common pipistrelle      | Foraging around courtyard between Buildings E & I                       |
| PB | 21:37 | Common pipistrelle      | Heard but not seen                                                      |
| JP | 21:38 | Common pipistrelle      | Foraging around courtyard between Buildings E & I                       |
| RK | 21:38 | Common pipistrelle      | Commuting east and then south along the west side of Buildings H & K    |
| VR | 21:39 | Common pipistrelle      | Foraging & feeding to south of Building I & east and west of Building H |
| JP | 21:39 | Common pipistrelle      | Foraging around north side of Building I                                |
| VR | 21:41 | Common pipistrelle      | Foraging & feeding south of Building I going east and then west         |
| VR | 21:41 | Common pipistrelle      | Foraging going west                                                     |
| PB | 21:41 | Common pipistrelle      | Heard but not seen                                                      |
| JP | 21:42 | Common pipistrelle      | Foraging around north side of Building I                                |
| PB | 21:43 | Common pipistrelle      | Feeding close to to ground on east side of Building M                   |
| PB | 21:44 | Common pipistrelle      | Foraging & feeding on east side of Building M until 22:13               |
| JP | 21:45 | Common pipistrelle      | Foraging around north side of Building I                                |
| JP | 21:48 | Common pipistrelle      | Foraging around north side of Building I                                |
| VR | 21:49 | Common pipistrelle      | Foraging west past the south end of Buildings E & I                     |
| RK | 21:49 | Common pipistrelle      | Foraging on the south side of Building I                                |
| VR | 21:52 | Common pipistrelle      | Foraging to the south of Buildings E & I                                |
| RK | 21:53 | Common pipistrelle      | Commuting east and then south along the west side of Buildings H & K    |
| JP | 21:54 | Common pipistrelle      | Foraging near Buildings E & I                                           |
| RK | 21:56 | Common pipistrelle      | Foraging south on the west side of Building H                           |
| JP | 21:58 | Common pipistrelle      | Foraging near Buildings E & I                                           |
| JP | 22:00 | Common pipistrelle      | Heard but not seen                                                      |
| RK | 22:00 | Common pipistrelle      | Heard but not seen                                                      |
| JP | 22:02 | Common pipistrelle      | Foraging near Buildings E & I                                           |
| JP | 22:08 | Common pipistrelle      | Heard but not seen                                                      |
| RK | 22:08 | Common pipistrelle      | Heard but not seen                                                      |
| VR | 22:09 | Common pipistrelle      | Heard but not seen                                                      |
| JP | 22:11 | Two common pipistrelles | Heard but not seen. Social calls heard                                  |
| RK | 22:11 | Common pipistrelle      | Heard but not seen                                                      |
| VR | 22:12 | Common pipistrelle      | Heard but not seen                                                      |

|                   |                                                                        |                    |                                                                                              |
|-------------------|------------------------------------------------------------------------|--------------------|----------------------------------------------------------------------------------------------|
| RK                | 22:12                                                                  | Common pipistrelle | Commuting east and then south along the west side of Buildings H & K                         |
| VR                | 22:13                                                                  | Common pipistrelle | Heard but not seen                                                                           |
| JP                | 22:14                                                                  | Common pipistrelle | Heard but not seen                                                                           |
| JP                | 22:16                                                                  | Common pipistrelle | Heard but not seen                                                                           |
| PB                | 22:18                                                                  | Common pipistrelle | Heard but not seen                                                                           |
| JP                | 22:19                                                                  | Common pipistrelle | Heard but not seen                                                                           |
| RK                | 22:19                                                                  | Common pipistrelle | Heard but not seen                                                                           |
| JP                | 22:26                                                                  | Common pipistrelle | Heard but not seen                                                                           |
| RK                | 22:26                                                                  | Common pipistrelle | Heard but not seen                                                                           |
| VR                | 22:27                                                                  | Noctule            | Heard but not seen                                                                           |
| JP                | 22:27                                                                  | Noctule            | Heard but not seen                                                                           |
| RK                | 22:27                                                                  | Noctule            | Heard but not seen                                                                           |
| -                 | 22:29                                                                  | -                  | Ecologists ceased observations                                                               |
| <b>Date</b>       | <b>24/05/2012</b>                                                      |                    |                                                                                              |
| <b>Temp</b>       | <b>16°C</b>                                                            |                    |                                                                                              |
| <b>Weather</b>    | <b>Hot &amp; sunny prior to sunset. Clear sky, still after sunset.</b> |                    |                                                                                              |
| <b>Ecologists</b> | <b>Victoria Russell, Philip Budd, Ruth Kernohan and Ed Faherty</b>     |                    |                                                                                              |
| <b>Observer</b>   | <b>Time</b>                                                            | <b>Species</b>     | <b>Observation</b>                                                                           |
| -                 | 20:54                                                                  | -                  | Ecologists commenced observations                                                            |
| -                 | 21:02                                                                  | -                  | Sunset                                                                                       |
| PB                | 21:21                                                                  | Common pipistrelle | Seen but not heard                                                                           |
| PB                | 21:21                                                                  | Common pipistrelle | Heard but not seen                                                                           |
| PB                | 21:22                                                                  | Pipistrelle        | Seen but not heard. Commuting west                                                           |
| RK                | <b>21:22</b>                                                           | <b>Pipistrelle</b> | <b>Seen but not heard. Emergence from south-east side of Building F then commuting south</b> |
| RK                | 21:25                                                                  | Common pipistrelle | Heard but not seen                                                                           |
| EF                | 21:25                                                                  | Common pipistrelle | Commuting north-west along the south side of Building B                                      |
| PB                | 21:26                                                                  | Common pipistrelle | Feeding                                                                                      |
| VR                | 21:27                                                                  | Pipistrelle        | Heard but not seen                                                                           |
| EF                | 21:27                                                                  | Common pipistrelle | Commuting north-west along the south side of Building B                                      |
| RK                | 21:27                                                                  | Common pipistrelle | Heard but not seen                                                                           |
| PB                | 21:29                                                                  | Common pipistrelle | Foraging until 21:38 around the south-east side of Buildings G & F                           |
| VR                | 21:31                                                                  | Common pipistrelle | Commuting along hedge around car-park                                                        |
| RK                | 21:31                                                                  | Common pipistrelle | Heard but not seen                                                                           |
| VR                | 21:33                                                                  | Common pipistrelle | Heard but not seen. Feeding buzzes                                                           |
| RK                | 21:34                                                                  | Common pipistrelle | Heard but not seen                                                                           |
| VR                | 21:37                                                                  | Pipistrelle        | Foraging to west of Building E                                                               |
| VR                | 21:37                                                                  | Common pipistrelle | Foraging in the car-park                                                                     |

|    |       |                    |                                                                 |
|----|-------|--------------------|-----------------------------------------------------------------|
| RK | 21:40 | Noctule            | Heard but not seen                                              |
| VR | 21:40 | Common pipistrelle | Heard but not seen                                              |
| VR | 21:41 | Noctule            | Heard but not seen                                              |
| RK | 21:42 | Common pipistrelle | Heard but not seen                                              |
| EF | 21:43 | Noctule            | Heard but not seen                                              |
| PB | 21:43 | Common pipistrelle | Heard but not seen                                              |
| EF | 21:44 | Noctule            | Heard but not seen                                              |
| PB | 21:45 | Common pipistrelle | Foraging until 22.32, some feeding calls                        |
| VR | 21:45 | Common pipistrelle | Heard but not seen                                              |
| EF | 21:46 | Common pipistrelle | Heard but not seen                                              |
| RK | 21:47 | Common pipistrelle | Heard but not seen                                              |
| RK | 21:50 | Common pipistrelle | Commuting north-west along the west side of Buildings F & E     |
| RK | 21:52 | Common pipistrelle | Foraging north on the south-east side of Building D             |
| VR | 21:52 | Common pipistrelle | Heard but not seen                                              |
| VR | 21:52 | Common pipistrelle | Foraging in front of Building A                                 |
| VR | 21:53 | Common pipistrelle | Heard but not seen                                              |
| VR | 21:53 | Common pipistrelle | Heard but not seen                                              |
| EF | 21:56 | Common pipistrelle | Heard but not seen                                              |
| EF | 21:56 | Noctule            | Commuting south-east along the north side of Building D         |
| RK | 21:56 | Common pipistrelle | Foraging south on the south-east side of Building D             |
| RK | 21:57 | Noctule            | Heard but not seen                                              |
| VR | 21:58 | Common pipistrelle | Heard but not seen                                              |
| EF | 21:59 | Common pipistrelle | Commuting north-west along the south side of Building B         |
| RK | 21:59 | Common pipistrelle | Heard but not seen                                              |
| VR | 22:00 | Common pipistrelle | Heard but not seen                                              |
| EF | 22:01 | Common pipistrelle | Heard but not seen                                              |
| RK | 22:01 | Common pipistrelle | Heard but not seen                                              |
| VR | 22:04 | Common pipistrelle | Heard but not seen                                              |
| EF | 22:05 | Noctule            | Commuting east and then south along the west side of Building F |
| RK | 22:05 | Common pipistrelle | Foraging north-east along the east side of Buildings D & B      |
| RK | 22:07 | Common pipistrelle | Foraging near trees east of the south-east side of Building F   |
| EF | 22:10 | Noctule            | Heard but not seen                                              |
| VR | 22:13 | Common pipistrelle | Heard but not seen. Feeding buzzes                              |
| RK | 22:14 | Common pipistrelle | Foraging near trees east of the south-east side of Building F   |
| VR | 22:15 | Common pipistrelle | Heard but not seen                                              |
| EF | 22:15 | Common pipistrelle | Heard but not seen                                              |

|                   |                                                                                      |                    |                                                                                       |
|-------------------|--------------------------------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------|
| RK                | 22:17                                                                                | Noctule            | Heard but not seen                                                                    |
| VR                | 22:18                                                                                | Noctule            | Heard but not seen                                                                    |
| EF                | 22:20                                                                                | Common pipistrelle | Heard but not seen                                                                    |
| EF                | 22:25                                                                                | Common pipistrelle | Heard but not seen                                                                    |
| RK                | 22:26                                                                                | Common pipistrelle | Heard but not seen                                                                    |
| EF                | 22:31                                                                                | Common pipistrelle | Heard but not seen                                                                    |
| RK                | 22:32                                                                                | Common pipistrelle | Heard but not seen                                                                    |
| RK                | 22:32                                                                                | Noctule            | Heard but not seen                                                                    |
| -                 | 22:32                                                                                | -                  | Ecologists ceased observations                                                        |
| <b>Date</b>       | <b>28/05/2012</b>                                                                    |                    |                                                                                       |
| <b>Temp</b>       | <b>16°C</b>                                                                          |                    |                                                                                       |
| <b>Weather</b>    | <b>Warm and sunny earlier, clear</b>                                                 |                    |                                                                                       |
| <b>Ecologists</b> | <b>John Poland, Victoria Russell, Philip Budd, Louise Fairless and Ruth Kernohan</b> |                    |                                                                                       |
| <b>Observer</b>   | <b>Time</b>                                                                          | <b>Species</b>     | <b>Observation</b>                                                                    |
| -                 | 20:50                                                                                | -                  | Ecologists commenced observations                                                     |
| -                 | 21:05                                                                                | -                  | Sunset                                                                                |
| JP                | 21:25                                                                                | Common pipistrelle | Heard but not seen                                                                    |
| VR                | 21:26                                                                                | Common pipistrelle | Commuting past south side of Buildings I & E                                          |
| VR & JP           | 21:28                                                                                | Common pipistrelle | Foraging west side of Building H                                                      |
| VR                | 21:32                                                                                | Common pipistrelle | Commuting above west side of roof of Building H                                       |
| JP                | 21:32                                                                                | Common pipistrelle | Commuting west over Buildings H & E. Probable emergence from east side of Building H  |
| VR                | 21:38                                                                                | Common pipistrelle | Foraging south of Buildings I & E and west of Building H                              |
| JP                | 21:39                                                                                | Common pipistrelle | Commuting south-west over Building H. Probable emergence from east side of Building H |
| JP                | 21:45                                                                                | Common pipistrelle | Foraging west of Building H                                                           |
| LF                | 21:46                                                                                | Common pipistrelle | Foraging near Buildings E & I                                                         |
| LF                | 21:47                                                                                | Common pipistrelle | Foraging north over ridge of Building I                                               |
| JP                | 21:47                                                                                | Common pipistrelle | Two commuting west past south side of Buildings I & E and over Building H             |
| RK                | 21:47                                                                                | Common pipistrelle | Heard but not seen                                                                    |
| JP                | 21:48                                                                                | Common pipistrelle | Heard but not seen                                                                    |
| PB                | 21:48                                                                                | Common pipistrelle | Heard but not seen                                                                    |
| LF                | 21:49                                                                                | Common pipistrelle | Foraging until 21.54                                                                  |
| VR                | 21:49                                                                                | Common pipistrelle | Foraging and feeding west of Building H                                               |
| RK                | 21:51                                                                                | Common pipistrelle | Foraging and feeding north of Building I                                              |
| VR                | 21:54                                                                                | Common pipistrelle | Foraging east towards Building H then north on west side of Building H                |
| JP                | 21:54                                                                                | Common pipistrelle | Foraging east of Building H                                                           |
| PB                | 21:54                                                                                | Common pipistrelle | Heard but not seen. Foraging until 21.57                                              |
| RK                | 21:55                                                                                | Common pipistrelle | Heard but not seen                                                                    |

|                   |                                                                       |                    |                                                                                                              |
|-------------------|-----------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------------------------------|
| JP                | 21:56                                                                 | Common pipistrelle | Heard but not seen. Foraging and feeding                                                                     |
| JP                | 21:57                                                                 | Common pipistrelle | Heard but not seen. Foraging                                                                                 |
| VR                | 21:58                                                                 | Common pipistrelle | Foraging west on south side of Building I then east and foraging over roof of Building H. Social calls heard |
| JP                | 21:58                                                                 | Common pipistrelle | Heard but not seen. Social calls                                                                             |
| PB                | 21:58                                                                 | Common pipistrelle | Commuting south-east past Building I                                                                         |
| VR, PB, LF & RK   | 22:01                                                                 | Noctule            | Heard but not seen                                                                                           |
| PB                | 22:05                                                                 | Common pipistrelle | Heard but not seen. Foraging until 22.18                                                                     |
| JP                | 22:06                                                                 | Brown Long-eared   | Heard but not seen                                                                                           |
| LF                | 22:09                                                                 | Common pipistrelle | Heard but not seen                                                                                           |
| VR                | 22:09                                                                 | Common pipistrelle | Heard but not seen                                                                                           |
| RK                | 22:09                                                                 | Common pipistrelle | Heard but not seen                                                                                           |
| LF                | 22:10                                                                 | Common pipistrelle | Heard but not seen                                                                                           |
| VR                | 22:10                                                                 | Common pipistrelle | Foraging and feeding south of Building I                                                                     |
| JP                | 22:10                                                                 | Common pipistrelle | Commuting north over Building I                                                                              |
| VR                | 22:11                                                                 | Common pipistrelle | Heard but not seen                                                                                           |
| VR                | 22:16                                                                 | Common pipistrelle | Foraging south of Building I                                                                                 |
| JP                | 22:16                                                                 | Common pipistrelle | Heard but not seen                                                                                           |
| JP                | 22:19                                                                 | Common pipistrelle | Heard but not seen                                                                                           |
| JP                | 22:22                                                                 | Common pipistrelle | Heard but not seen. Foraging and feeding                                                                     |
| LF                | 22:23                                                                 | Common pipistrelle | Foraging south over ridge of Building I                                                                      |
| VR                | 22:23                                                                 | Common pipistrelle | Heard but not seen                                                                                           |
| VR                | 22:28                                                                 | Common pipistrelle | Foraging and feeding south of Building I                                                                     |
| JP                | 22:28                                                                 | Common pipistrelle | Heard but not seen                                                                                           |
| LF                | 22:30                                                                 | Common pipistrelle | Heard but not seen                                                                                           |
| RK                | 22:30                                                                 | Serotine           | Heard but not seen                                                                                           |
| JP                | 22:35                                                                 | Common pipistrelle | Heard but not seen                                                                                           |
| -                 | 22:35                                                                 | -                  | Ecologists ceased observations                                                                               |
| <b>Date</b>       | <b>29/05/2012</b>                                                     |                    |                                                                                                              |
| <b>Temp</b>       | <b>19°C</b>                                                           |                    |                                                                                                              |
| <b>Weather</b>    | <b>Warm &amp; dry prior to sunset. Clear sky, still after sunset.</b> |                    |                                                                                                              |
| <b>Ecologists</b> | <b>Victoria Russell, Ruth Kernohan, Claire Ford and Ed Faherty</b>    |                    |                                                                                                              |
| <b>Observer</b>   | <b>Time</b>                                                           | <b>Species</b>     | <b>Observation</b>                                                                                           |
| -                 | 21:00                                                                 | -                  | Ecologists commenced observations                                                                            |
| -                 | 21:06                                                                 | -                  | Sunset                                                                                                       |
| EF                | 21:20                                                                 | Common pipistrelle | Heard but not seen                                                                                           |
| EF                | 21:25                                                                 | Common pipistrelle | Commuting north and then west along the west side of Building K                                              |
| RK                | 21:26                                                                 | Common pipistrelle | Commuting west over Buildings H & E. Possible emergence from east side of Building E                         |

|         |       |                    |                                                                                |
|---------|-------|--------------------|--------------------------------------------------------------------------------|
| CF      | 21:28 | Common pipistrelle | Commuting west over Building M & K                                             |
| VR      | 21:28 | Common pipistrelle | Foraging on east of Building G and over Building M                             |
| EF      | 21:29 | Common pipistrelle | Commuting east and then north between Buildings H & I                          |
| EF      | 21:29 | Common pipistrelle | Commuting east and then south along Buildings H & K                            |
| EF      | 21:30 | Common pipistrelle | Commuting east and then south along Buildings H & K                            |
| CF & RK | 21:31 | Common pipistrelle | Commuting west over Buildings G & M                                            |
| RK      | 21:37 | Common pipistrelle | Foraging and feeding east of Buildings F & G                                   |
| EF      | 21:40 | Common pipistrelle | Commuting north over Building I                                                |
| VR      | 21:41 | Noctule            | Heard but not seen                                                             |
| CF      | 21:42 | Common pipistrelle | Foraging around Building M                                                     |
| RK      | 21:42 | Common pipistrelle | Foraging and feeding east of Buildings F & G                                   |
| VR      | 21:42 | Common pipistrelle | Heard but not seen                                                             |
| CF      | 21:45 | Common pipistrelle | Foraging around Building M                                                     |
| VR & RK | 21:45 | Common pipistrelle | Foraging and feeding east of Buildings F & G                                   |
| CF      | 21:53 | Common pipistrelle | Foraging around Building M                                                     |
| VR      | 21:53 | Common pipistrelle | Foraging east of Building H                                                    |
| RK      | 21:54 | Common pipistrelle | Foraging and feeding east of Buildings F & G                                   |
| VR      | 21:54 | Common pipistrelle | Foraging and feeding east of Building H                                        |
| CF      | 21:55 | Common pipistrelle | Commuting south east from behind Building M                                    |
| VR      | 21:56 | Common pipistrelle | Heard but not seen                                                             |
| RK      | 22:03 | Common pipistrelle | Foraging and feeding east of Buildings F & G                                   |
| CF      | 22:04 | Common pipistrelle | Heard but not seen                                                             |
| VR      | 22:04 | Common pipistrelle | Foraging in garden east of Building H                                          |
| EF      | 22:05 | Common pipistrelle | Commuting north-east between Buildings E & H                                   |
| CF      | 22:10 | Serotine           | Commuting west and then north on the east side of Building M                   |
| EF      | 22:10 | Serotine           | Commuting east and then south along Building K                                 |
| RK      | 22:11 | Serotine           | Commuting south west near trees east of the south east side of Buildings F & G |
| VR      | 22:11 | Serotine           | Foraging south around east side of Buildings G & M                             |
| CF      | 22:12 | Common pipistrelle | Heard but not seen                                                             |
| RK      | 22:13 | Common pipistrelle | Foraging and feeding east of Buildings F & G                                   |
| VR      | 22:13 | Common pipistrelle | Heard but not seen                                                             |
| EF      | 22:15 | Common pipistrelle | Commuting north-east between Buildings E & H                                   |
| EF      | 22:16 | Common pipistrelle | Heard but not seen                                                             |
| RK      | 22:18 | Noctule            | Heard but not seen                                                             |
| RK      | 22:18 | Common pipistrelle | Heard but not seen                                                             |
| VR      | 22:18 | Noctule            | Heard but not seen                                                             |
| RK      | 22:21 | Common pipistrelle | Heard but not seen                                                             |
| VR      | 22:27 | Common pipistrelle | Heard but not seen                                                             |
| RK      | 22:28 | Common pipistrelle | Heard but not seen                                                             |

|                   |                                                      |                           |                                                                                       |
|-------------------|------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------|
| -                 | 22:36                                                | -                         | Ecologists ceased observations                                                        |
| <b>Date</b>       | <b>30/05/2012</b>                                    |                           |                                                                                       |
| <b>Temp</b>       | <b>15°C</b>                                          |                           |                                                                                       |
| <b>Weather</b>    | <b>Warm and sunny earlier. Clear and still.</b>      |                           |                                                                                       |
| <b>Ecologists</b> | <b>John Poland, Victoria Russell and Claire Ford</b> |                           |                                                                                       |
| <b>Observer</b>   | <b>Time</b>                                          | <b>Species</b>            | <b>Observation</b>                                                                    |
| -                 | 20:53                                                | -                         | Ecologists commenced observations                                                     |
| -                 | 21:07                                                | -                         | Sunset                                                                                |
| CF                | 21:32                                                | Common pipistrelle        | Commuting north-west along Buildings A & J                                            |
| CF                | 21:33                                                | Common pipistrelle        | Foraging near east corner of Building J                                               |
| VR                | <b>21:34</b>                                         | <b>Common pipistrelle</b> | <b>Emerging from Building B and commuting between Buildings A &amp; B</b>             |
| JP                | 21:36                                                | Common pipistrelle        | Heard but not seen                                                                    |
| CF                | 21:36                                                | Common pipistrelle        | Foraging near east corner of Building J                                               |
| CF                | 21:37                                                | Common pipistrelle        | Heard but not seen. Foraging                                                          |
| JP                | <b>21:38</b>                                         | <b>Common pipistrelle</b> | <b>Emerged from wooden soffit south-east eave of Building B, commuting south-east</b> |
| VR                | 21:39                                                | Common pipistrelle        | Heard but not seen                                                                    |
| CF                | 21:39                                                | Common pipistrelle        | Foraging north of Building A then commuting north-west towards Building L             |
| JP                | 21:41                                                | Common pipistrelle        | Commuting south over Buildings B & D                                                  |
| CF                | 21:42                                                | Common pipistrelle        | Foraging and feeding near east corner of Building J                                   |
| JP                | 21:44                                                | Common pipistrelle        | Heard but not seen                                                                    |
| VR                | 21:47                                                | Noctule                   | Heard but not seen                                                                    |
| JP                | 21:47                                                | Noctule                   | Heard but not seen                                                                    |
| JP                | 21:47                                                | Common pipistrelle        | Heard but not seen                                                                    |
| JP & CF           | 21:50                                                | Common pipistrelle        | Heard but not seen                                                                    |
| JP                | 21:52                                                | Common pipistrelle        | Heard but not seen                                                                    |
| JP                | 21:53                                                | Noctule                   | Heard but not seen                                                                    |
| VR                | 21:54                                                | Noctule                   | Heard but not seen                                                                    |
| CF                | 21:55                                                | Common pipistrelle        | Heard but not seen                                                                    |
| CF                | 21:55                                                | Common pipistrelle        | Foraging and feeding south-east along Buildings A & J                                 |
| JP                | 21:57                                                | Common pipistrelle        | Heard but not seen                                                                    |
| CF                | 21:57                                                | Common pipistrelle        | Foraging near east corner of Building J                                               |
| VR                | 21:59                                                | Common pipistrelle        | Heard but not seen                                                                    |
| JP                | 21:59                                                | Common pipistrelle        | Heard but not seen                                                                    |
| JP                | 22:00                                                | Common pipistrelle        | Two foraging around the east side of Buildings D & B                                  |
| CF                | 22:00                                                | Common pipistrelle        | Commuting west along Buildings A & J                                                  |
| VR                | 22:03                                                | Common pipistrelle        | Foraging east towards Building A from car park                                        |
| VR                | 22:03                                                | Noctule                   | Heard but not seen                                                                    |
| CF                | 22:03                                                | Common pipistrelle        | Commuting west along Buildings A & J                                                  |
| JP                | 22:04                                                | Noctule                   | Heard but not seen                                                                    |

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|-------------------|----------------------------------------------------------------------|--------------------|-------------------------------------------------------------------------------|
| VR                | 22:05                                                                | Noctule            | Heard but not seen                                                            |
| CF                | 22:06                                                                | Common pipistrelle | Foraging near east corner of Building J heading north-west towards Building L |
| CF                | 22:07                                                                | Common pipistrelle | Heard but not seen                                                            |
| JP                | 22:08                                                                | Common pipistrelle | Heard but not seen                                                            |
| CF                | 22:09                                                                | Common pipistrelle | Heard but not seen. Foraging and feeding                                      |
| VR                | 22:10                                                                | Common pipistrelle | Foraging and feeding east towards Building A from car park                    |
| JP                | 22:10                                                                | Common pipistrelle | Heard but not seen                                                            |
| VR                | 22:11                                                                | Common pipistrelle | Foraging and feeding west past Buildings A & L                                |
| CF                | 22:11                                                                | Common pipistrelle | Heard but not seen                                                            |
| VR                | 22:12                                                                | Common pipistrelle | Heard but not seen                                                            |
| JP                | 22:14                                                                | Common pipistrelle | Heard but not seen                                                            |
| CF                | 22:14                                                                | Common pipistrelle | Foraging north-west along Buildings A & J                                     |
| CF                | 22:21                                                                | Common pipistrelle | Heard but not seen. Foraging                                                  |
| VR                | 22:25                                                                | Common pipistrelle | Heard but not seen                                                            |
| CF                | 22:25                                                                | Common pipistrelle | Commuting north-west along Buildings A & J                                    |
| VR                | 22:26                                                                | Common pipistrelle | Heard but not seen. Foraging and feeding                                      |
| CF                | 22:28                                                                | Common pipistrelle | Commuting west along Buildings A & J                                          |
| CF                | 22:29                                                                | Common pipistrelle | Heard but not seen. Foraging and feeding                                      |
| JP                | 22:33                                                                | Common pipistrelle | Heard but not seen                                                            |
| VR                | 22:34                                                                | Common pipistrelle | Heard but not seen                                                            |
| -                 | 22:37                                                                | -                  | Ecologists ceased observations                                                |
| <b>Date</b>       | <b>06/06/2012</b>                                                    |                    |                                                                               |
| <b>Temp</b>       | <b>13°C</b>                                                          |                    |                                                                               |
| <b>Weather</b>    | <b>Rain earlier. Dry, cool, 80% cloud, moderate breeze</b>           |                    |                                                                               |
| <b>Ecologists</b> | <b>John Poland, Victoria Russell, Philip Budd and Kirsty Pearman</b> |                    |                                                                               |
| <b>Observer</b>   | <b>Time</b>                                                          | <b>Species</b>     | <b>Observation</b>                                                            |
| -                 | 21:01                                                                | -                  | Ecologists commenced observations                                             |
| -                 | 21:16                                                                | -                  | Sunset                                                                        |
| PB                | 21:27                                                                | Common pipistrelle | Heard but not seen                                                            |
| VR                | 21:27                                                                | Common pipistrelle | Foraging on south side of Building I                                          |
| VR                | 21:31                                                                | Common pipistrelle | Heard but not seen                                                            |
| PB                | 21:35                                                                | Common pipistrelle | Heard but not seen                                                            |
| VR                | 21:35                                                                | Common pipistrelle | Foraging and feeding on south side of Building I                              |
| PB                | 21:38                                                                | Common pipistrelle | Heard but not seen. Foraging and feeding until 21.54                          |
| VR                | 21:38                                                                | Common pipistrelle | Foraging on south side of Building I                                          |
| VR                | 21:39                                                                | Common pipistrelle | Heard but not seen                                                            |
| VR                | 21:40                                                                | Common pipistrelle | Foraging and feeding on south side of Building I                              |
| VR                | 21:41                                                                | Common pipistrelle | Heard but not seen                                                            |
| VR                | 21:43                                                                | Common pipistrelle | Heard but not seen                                                            |
| PB                | 21:44                                                                | Common pipistrelle | Commuting north past west side of Building I                                  |

|                   |                                                                |                           |                                                                                        |
|-------------------|----------------------------------------------------------------|---------------------------|----------------------------------------------------------------------------------------|
| VR                | 21:44                                                          | Common pipistrelle        | Foraging on south side of Building I                                                   |
| JP                | 21:46                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| KP                | 21:46                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| VR                | 21:47                                                          | Common pipistrelle        | Foraging on south side of Building I                                                   |
| VR                | 21:54                                                          | Common pipistrelle        | Foraging on south side of Building I                                                   |
| PB                | 22:00                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| VR                | 22:08                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| JP                | 22:09                                                          | Common pipistrelle        | Foraging over Building I                                                               |
| PB                | 22:09                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| VR                | 22:09                                                          | Common pipistrelle        | Foraging on south side of Building I and above                                         |
| JP                | 22:11                                                          | Noctule                   | Heard but not seen                                                                     |
| PB                | 22:11                                                          | Noctule                   | Heard but not seen                                                                     |
| VR                | 22:11                                                          | Noctule                   | Heard but not seen                                                                     |
| KP                | 22:12                                                          | Noctule                   | Heard but not seen                                                                     |
| -                 | 22:46                                                          | -                         | Ecologists ceased observations                                                         |
| <b>Date</b>       | <b>12/06/2012</b>                                              |                           |                                                                                        |
| <b>Temp</b>       | <b>10°C</b>                                                    |                           |                                                                                        |
| <b>Weather</b>    | <b>Cool, dry, 100% overcast, still. Heavy rain day before.</b> |                           |                                                                                        |
| <b>Ecologists</b> | <b>Victoria Russell, Ruth Kernohan and Ed Faherty</b>          |                           |                                                                                        |
| <b>Observer</b>   | <b>Time</b>                                                    | <b>Species</b>            | <b>Observation</b>                                                                     |
| -                 | 21:04                                                          | -                         | Ecologists commenced observations                                                      |
| -                 | 21:19                                                          | -                         | Sunset                                                                                 |
| EF & RK           | <b>21:24</b>                                                   | <b>Common pipistrelle</b> | <b>Emerging from south east side of Building F under hip ridge tile commuting east</b> |
| RK                | 21:42                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| VR                | 21:44                                                          | Common pipistrelle        | Foraging to east of Building Bb                                                        |
| RK                | 21:44                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| EF                | 21:44                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| VR                | 21:45                                                          | Common pipistrelle        | Foraging and feeding to east of Building Bb and D                                      |
| EF                | 21:45                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| RK                | 21:50                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| EF                | 21:50                                                          | Common pipistrelle        | Commuting south near trees east of the south east side of Buildings F & G              |
| RK                | 21:58                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| EF                | 21:59                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| VR                | 22:00                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| VR                | 22:01                                                          | Common pipistrelle        | Foraging west past side of Building Bb, Ba and then north past Building D              |
| EF                | 22:01                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| VR                | 22:02                                                          | Common pipistrelle        | Foraging west past north side of Building D                                            |
| VR                | 22:05                                                          | Common pipistrelle        | Heard but not seen                                                                     |
| RK                | 22:05                                                          | Common pipistrelle        | Heard but not seen. Feeding.                                                           |

|                   |                                                                                                    |                    |                                                                                                                                   |
|-------------------|----------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| EF                | 22:05                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| VR                | 22:08                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| RK & EF           | 22:10                                                                                              | Common pipistrelle | Foraging and feeding around east of Buildings G & F                                                                               |
| VR                | 22:11                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| RK                | 22:14                                                                                              | Common pipistrelle | Commuting south over Buildings F & G                                                                                              |
| VR                | 22:15                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| EF                | 22:15                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| VR                | 22:17                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| EF                | 22:44                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| VR                | 22:48                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| RK                | 22:48                                                                                              | Common pipistrelle | Heard but not seen. Feeding.                                                                                                      |
| EF                | 22:48                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| EF                | 22:49                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| VR                | 22:49                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| -                 | 22:49                                                                                              | -                  | Ecologists ceased observations                                                                                                    |
| <b>Date</b>       | <b>13/06/2012</b>                                                                                  |                    |                                                                                                                                   |
| <b>Temp</b>       | <b>11°C</b>                                                                                        |                    |                                                                                                                                   |
| <b>Weather</b>    | <b>Clear and sunny earlier. Clear, dry, still.</b>                                                 |                    |                                                                                                                                   |
| <b>Ecologists</b> | <b>John Poland, Victoria Russell, Louise Fairless, Philip Budd, Claire Ford and Kirsty Pearman</b> |                    |                                                                                                                                   |
| <b>Observer</b>   | <b>Time</b>                                                                                        | <b>Species</b>     | <b>Observation</b>                                                                                                                |
| -                 | 21:04                                                                                              | -                  | Ecologists commenced observations                                                                                                 |
| -                 | 21:09                                                                                              | -                  | Sunset                                                                                                                            |
| LF                | 21:34                                                                                              | Noctule            | Heard but not seen                                                                                                                |
| KP                | 21:40                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| LF                | 21:40                                                                                              | Common pipistrelle | Commuting east along Buildings A & J                                                                                              |
| KP                | 21:41                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| CF                | 21:41                                                                                              | Common pipistrelle | Emerging from middle of south side of Building B, commuting east                                                                  |
| LF                | 21:44                                                                                              | Common pipistrelle | Commuting north over Building J                                                                                                   |
| KP                | 21:50                                                                                              | Common pipistrelle | Commuting east from between Buildings F & G                                                                                       |
| CF                | 21:50                                                                                              | Common pipistrelle | Commuting south near trees east of the south-east side of Buildings D & F                                                         |
| VR                | 21:50                                                                                              | Common pipistrelle | Possible emergence from north side of Building H but roof not visible from position. Commuting south-east between Buildings F & G |
| LF                | 21:55                                                                                              | Brown Long-eared   | Foraging east near Building J                                                                                                     |
| KP                | 22:00                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| JP                | 22:00                                                                                              | Common pipistrelle | Commuting south-east over Buildings F & G                                                                                         |
| CF                | 22:00                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| VR                | 22:00                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |
| LF                | 22:03                                                                                              | Common pipistrelle | Heard but not seen                                                                                                                |

|                   |                                                                    |                           |                                                                                                 |
|-------------------|--------------------------------------------------------------------|---------------------------|-------------------------------------------------------------------------------------------------|
| PB                | 22:17                                                              | Noctule                   | Heard but not seen                                                                              |
| LF                | 22:22                                                              | Common pipistrelle        | Commuting east along Buildings A & J                                                            |
| JP                | 22:32                                                              | Serotine                  | Very brief call, possibly serotine                                                              |
| VR                | 22:32                                                              | Serotine                  | Heard but not seen                                                                              |
| LF                | 22:34                                                              | Serotine                  | Seen but not heard. Commuting south-east between Buildings B & D above tree height              |
| LF                | 22:42                                                              | Common pipistrelle        | Heard but not seen                                                                              |
| PB                | 22:42                                                              | Common pipistrelle        | Heard but not seen. Feeding                                                                     |
| KP                | 22:46                                                              | Common pipistrelle        | Heard but not seen                                                                              |
| LF                | 22:46                                                              | Common pipistrelle        | Heard but not seen                                                                              |
| CF                | 22:46                                                              | Common pipistrelle        | Heard but not seen                                                                              |
| JP                | 22:48                                                              | Common pipistrelle        | Heard but not seen                                                                              |
| LF                | 22:48                                                              | Common pipistrelle        | Heard but not seen                                                                              |
| VR                | 22:48                                                              | Common pipistrelle        | Heard but not seen                                                                              |
| KP                | 22:49                                                              | Common pipistrelle        | Heard but not seen                                                                              |
| JP                | 22:49                                                              | Common pipistrelle        | Heard but not seen                                                                              |
| -                 | 22:49                                                              | -                         | Ecologists ceased observations                                                                  |
| <b>Date</b>       | <b>20/06/2012</b>                                                  |                           |                                                                                                 |
| <b>Temp</b>       | <b>16°C</b>                                                        |                           |                                                                                                 |
| <b>Weather</b>    | <b>Overcast, slight breeze</b>                                     |                           |                                                                                                 |
| <b>Ecologists</b> | <b>Louise Fairless, Kirsty Pearman, Claire Ford and Ed Faherty</b> |                           |                                                                                                 |
| <b>Observer</b>   | <b>Time</b>                                                        | <b>Species</b>            | <b>Observation</b>                                                                              |
| -                 | 21:06                                                              | -                         | Ecologists commenced observations                                                               |
| -                 | 21:21                                                              | -                         | Sunset                                                                                          |
| LF                | 21:25                                                              | Common pipistrelle        | Heard but not seen                                                                              |
| LF                | 21:27                                                              | Common pipistrelle        | Heard but not seen                                                                              |
| CF                | <b>21:33</b>                                                       | <b>Common pipistrelle</b> | <b>Emerged from south-west facing window of Building E</b>                                      |
| LF                | 21:34                                                              | Common pipistrelle        | Foraging between Buildings F & G then heading south                                             |
| CF                | 21:35                                                              | Common pipistrelle        | Foraging around courtyard between Buildings E & H                                               |
| EF                | 21:35                                                              | Common pipistrelle        | Heard but not seen                                                                              |
| EF                | 21:38                                                              | Common pipistrelle        | Foraging around Building F                                                                      |
| KP                | <b>21:38</b>                                                       | <b>Common pipistrelle</b> | <b>Emerging from Building H from around south-east facing third dormer window</b>               |
| LF                | 21:38                                                              | Common pipistrelle        | Foraging over Building H and between Buildings F & G                                            |
| EF                | 21:39                                                              | Common pipistrelle        | Heard but not seen                                                                              |
| KP                | 21:39                                                              | Common pipistrelle        | Re-entering into Building H through gap in soffit beneath south-east facing third dormer window |
| CF                | 21:40                                                              | Common pipistrelle        | Heard but not seen. Foraging and feeding buzzes                                                 |
| CF                | 21:44                                                              | Common pipistrelle        | Commuting south along Building K                                                                |
| CF                | 21:45                                                              | Common pipistrelle        | Commuting south along Building K                                                                |
| CF                | 21:46                                                              | Common pipistrelle        | Heard but not seen                                                                              |

|             |       |                    |                                                                                                    |
|-------------|-------|--------------------|----------------------------------------------------------------------------------------------------|
| KP          | 21:47 | Common pipistrelle | Heard but not seen                                                                                 |
| LF          | 21:47 | Common pipistrelle | Heard but not seen                                                                                 |
| LF, KP & EF | 21:50 | Common pipistrelle | Three bats commuting south near trees east of the south-east side of Buildings F, G & M            |
| CF          | 21:52 | Common pipistrelle | Foraging and feeding near Building E                                                               |
| CF          | 21:55 | Common pipistrelle | Foraging and feeding around courtyard from south-west                                              |
| CF          | 21:57 | Common pipistrelle | Commuting north-west over Building E                                                               |
| EF          | 21:57 | Common pipistrelle | Commuting north past east side of Building D                                                       |
| LF          | 21:57 | Common pipistrelle | Heard but not seen                                                                                 |
| CF          | 21:58 | Common pipistrelle | Foraging and feeding around courtyard                                                              |
| EF          | 21:58 | Common pipistrelle | Heard but not seen                                                                                 |
| CF          | 22:00 | Common pipistrelle | Foraging and feeding south from over Building E                                                    |
| CF          | 22:01 | Common pipistrelle | Foraging and feeding south from over Building E                                                    |
| EF          | 22:01 | Common pipistrelle | Commuting east between Buildings F & G                                                             |
| LF          | 22:01 | Common pipistrelle | Heard but not seen                                                                                 |
| CF          | 22:05 | Common pipistrelle | Foraging above Buildings then commuting north over Building E                                      |
| KP          | 22:05 | Common pipistrelle | Commuting south-east towards gardens east of Building G                                            |
| LF          | 22:06 | Common pipistrelle | Foraging south near trees east of the south-east side of Buildings F, G & M                        |
| CF          | 22:07 | Common pipistrelle | Foraging and feeding above Buildings and in the courtyard                                          |
| KP          | 22:08 | Common pipistrelle | Heard but not seen                                                                                 |
| LF          | 22:08 | Common pipistrelle | Foraging east over ridge of Buildings H & G                                                        |
| CF          | 22:09 | Common pipistrelle | Commuting north along Building K                                                                   |
| EF          | 22:09 | Common pipistrelle | Heard but not seen                                                                                 |
| KP          | 22:10 | Common pipistrelle | Re-entering into Building H through south-east facing middle dormer window. Unsure entrance point. |
| CF          | 22:11 | Common pipistrelle | Heard but not seen                                                                                 |
| CF          | 22:15 | Common pipistrelle | Foraging and feeding around courtyard, heading north over Building I                               |
| CF          | 22:17 | Common pipistrelle | Commuting south from over Building I, heading south-east over Building K                           |
| CF          | 22:22 | Common pipistrelle | Heard but not seen. Foraging and feeding buzzes                                                    |
| CF          | 22:23 | Common pipistrelle | Heard but not seen                                                                                 |
| CF          | 22:24 | Common pipistrelle | Heard but not seen                                                                                 |
| CF          | 22:26 | Common pipistrelle | Heard but not seen                                                                                 |
| EF          | 22:27 | Common pipistrelle | Heard but not seen                                                                                 |
| LF          | 22:29 | Noctule            | Heard but not seen                                                                                 |
| CF          | 22:30 | Common pipistrelle | Heard but not seen                                                                                 |
| KP          | 22:31 | Common pipistrelle | Heard but not seen                                                                                 |

|                   |                                                                                                        |                           |                                                                                                   |
|-------------------|--------------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------|
| LF                | 22:32                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| CF                | 22:33                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| KP                | 22:34                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| LF                | 22:34                                                                                                  | Common pipistrelle        | Heard but not seen. Foraging and feeding buzzes                                                   |
| EF                | 22:35                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| LF                | 22:35                                                                                                  | Common pipistrelle        | Heard but not seen. Foraging                                                                      |
| -                 | 22:51                                                                                                  | -                         | Ecologists ceased observations                                                                    |
| <b>Date</b>       | <b>26/06/2012</b>                                                                                      |                           |                                                                                                   |
| <b>Temp</b>       | <b>18°C</b>                                                                                            |                           |                                                                                                   |
| <b>Weather</b>    | <b>Weather earlier humid with localised short showers during late afternoon. 100% overcast, still.</b> |                           |                                                                                                   |
| <b>Ecologists</b> | <b>Victoria Russell, Ruth Kernohan, Kirsty Pearman and Lyndsey de Valmency</b>                         |                           |                                                                                                   |
| <b>Observer</b>   | <b>Time</b>                                                                                            | <b>Species</b>            | <b>Observation</b>                                                                                |
| -                 | 21:07                                                                                                  | -                         | Ecologists commenced observations                                                                 |
| -                 | 21:22                                                                                                  | -                         | Sunset                                                                                            |
| VR                | 21:31                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| KP                | 21:36                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| LDV               | 21:36                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| VR                | 21:38                                                                                                  | Common pipistrelle        | Foraging and feeding on south side of Buildings E & I around vegetation on roundabout until 21:40 |
| KP                | 21:40                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| LDV               | 21:40                                                                                                  | Common pipistrelle        | Commuting south-west near trees east of the south-east side of Buildings F & G                    |
| VR                | 21:42                                                                                                  | Common pipistrelle        | Commuting past west side of Building H and between Buildings E & I                                |
| RK                | <b>21:42</b>                                                                                           | <b>Common pipistrelle</b> | <b>Emerging from south-east side of Building F under ridge tile, commuting east</b>               |
| VR                | 21:46                                                                                                  | Common pipistrelle        | Commuting along hedge to south of Buildings E & I                                                 |
| RK                | 21:46                                                                                                  | Noctule                   | Heard but not seen                                                                                |
| KP                | 21:47                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| LDV               | 21:47                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| VR                | 21:56                                                                                                  | Common pipistrelle        | Foraging along hedge to south of Buildings E & I and into trees                                   |
| KP                | 21:56                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| RK                | 21:56                                                                                                  | Common pipistrelle        | Foraging east of Buildings G & M                                                                  |
| VR                | 22:10                                                                                                  | Common pipistrelle        | Foraging down west side of Building H                                                             |
| RK                | 22:10                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| VR                | 22:21                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| RK                | 22:21                                                                                                  | Common pipistrelle        | Foraging and feeding around east of Building G                                                    |
| VR                | 22:23                                                                                                  | Common pipistrelle        | Heard but not seen                                                                                |
| RK                | 22:23                                                                                                  | Noctule                   | Heard but not seen                                                                                |
| VR                | 22:26                                                                                                  | Serotine                  | Heard but not seen                                                                                |

|                   |                                                                                      |                           |                                                                                                      |
|-------------------|--------------------------------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------|
| VR                | 22:28                                                                                | Common pipistrelle        | Heard but not seen                                                                                   |
| -                 | 22:52                                                                                | -                         | Ecologists ceased observations                                                                       |
| <b>Date</b>       | <b>27/06/2012</b>                                                                    |                           |                                                                                                      |
| <b>Temp</b>       | <b>10°C</b>                                                                          |                           |                                                                                                      |
| <b>Weather</b>    | <b>Overcast 100% clearing to 90%, still. Humid and warm earlier.</b>                 |                           |                                                                                                      |
| <b>Ecologists</b> | <b>Victoria Russell, Louise Fairless, Ed Faherty, Claire Ford and Kirsty Pearman</b> |                           |                                                                                                      |
| <b>Observer</b>   | <b>Time</b>                                                                          | <b>Species</b>            | <b>Observation</b>                                                                                   |
| -                 | 21:07                                                                                | -                         | Ecologists commenced observations                                                                    |
| -                 | 21:22                                                                                | -                         | Sunset                                                                                               |
| EF                | <b>21:39</b>                                                                         | <b>Common pipistrelle</b> | <b>Emerging from south-east side of Building F under hip ridge tile, then forging east</b>           |
| VR                | <b>21:45</b>                                                                         | <b>Common pipistrelle</b> | <b>Emerged from apex of gable end of Building Bb, then commuting south</b>                           |
| VR                | <b>21:46</b>                                                                         | <b>Common pipistrelle</b> | <b>Emerged from apex of gable end of Building Bb, then commuting south</b>                           |
| LF                | <b>21:47</b>                                                                         | <b>Common pipistrelle</b> | <b>Emerged from south side of Building Ba from halfway up roof</b>                                   |
| CF                | <b>21:48</b>                                                                         | <b>Common pipistrelle</b> | <b>Emergence from north-west gable end of Building Bb, commuting south over Building Ba</b>          |
| VR                | <b>21:49</b>                                                                         | <b>Common pipistrelle</b> | <b>Emerged from north side of Building Ba, then commuting north-east between Buildings A &amp; J</b> |
| EF                | 21:50                                                                                | Common pipistrelle        | Foraging east from between Buildings F & G                                                           |
| EF                | 21:55                                                                                | Common pipistrelle        | Commuting east from between Buildings F & G                                                          |
| VR                | 21:58                                                                                | Common pipistrelle        | Foraging on west side of Building A & Ba until 21:59                                                 |
| LF                | 21:58                                                                                | Common pipistrelle        | Heard but not seen                                                                                   |
| KP                | 22:00                                                                                | Common pipistrelle        | Heard but not seen                                                                                   |
| VR                | 22:01                                                                                | Common pipistrelle        | Foraging on north and west side of Building A                                                        |
| CF & KP           | 22:01                                                                                | Common pipistrelle        | Commuting south-east along Buildings A & J                                                           |
| EF                | 22:02                                                                                | Common pipistrelle        | Heard but not seen                                                                                   |
| LF                | 22:02                                                                                | Common pipistrelle        | Heard but not seen                                                                                   |
| CF                | 22:05                                                                                | Common pipistrelle        | Heard but not seen. Foraging and feeding                                                             |
| KP                | 22:06                                                                                | Common pipistrelle        | Foraging and feeding buzzes heading north along Buildings A & J                                      |
| KP & CF           | 22:07                                                                                | Common pipistrelle        | Commuting north-west along Buildings A & J                                                           |
| EF                | 22:07                                                                                | Common pipistrelle        | Heard but not seen. Foraging and feeding                                                             |
| VR                | 22:08                                                                                | Common pipistrelle        | Foraging on west side of Building A, then flying south                                               |
| VR                | 22:10                                                                                | Common pipistrelle        | Heard but not seen                                                                                   |
| VR                | 22:10                                                                                | Common pipistrelle        | Heard but not seen                                                                                   |
| EF                | 22:11                                                                                | Common pipistrelle        | Commuting from between Buildings F & G then heading north east                                       |
| LF                | 22:11                                                                                | Common pipistrelle        | Heard but not seen                                                                                   |

|         |       |                    |                                                                       |
|---------|-------|--------------------|-----------------------------------------------------------------------|
| VR      | 22:12 | Common pipistrelle | Foraging and feeding past south side of Building L towards Building A |
| VR      | 22:15 | Common pipistrelle | Heard but not seen                                                    |
| EF      | 22:15 | Common pipistrelle | Commuting south-west from gardens towards Building F                  |
| LF      | 22:15 | Common pipistrelle | Heard but not seen                                                    |
| VR      | 22:18 | Common pipistrelle | Foraging and feeding past south side of Building L towards Building A |
| LF      | 22:21 | Common pipistrelle | Heard but not seen                                                    |
| EF      | 22:22 | Common pipistrelle | Heard but not seen. Foraging and feeding                              |
| EF      | 22:25 | Common pipistrelle | Heard but not seen                                                    |
| VR      | 22:26 | Common pipistrelle | Heard but not seen. Foraging and feeding                              |
| CF      | 22:26 | Common pipistrelle | Heard but not seen. Foraging                                          |
| VR & KP | 22:27 | Common pipistrelle | Foraging and social calls on west side of Building A                  |
| VR      | 22:27 | Noctule            | Heard but not seen                                                    |
| EF      | 22:27 | Common pipistrelle | Heard but not seen                                                    |
| KP      | 22:28 | Common pipistrelle | Heard but not seen                                                    |
| LF      | 22:28 | Common pipistrelle | Heard but not seen.                                                   |
| VR      | 22:35 | Noctule            | Heard but not seen                                                    |
| KP      | 22:35 | Noctule            | Heard but not seen                                                    |
| LF      | 22:35 | Noctule            | Heard but not seen                                                    |
| CF      | 22:37 | Noctule            | Heard but not seen.                                                   |
| KP      | 22:38 | Noctule            | Heard but not seen                                                    |
| EF      | 22:47 | Noctule            | Heard but not seen                                                    |
| -       | 22:52 | -                  | Ecologists ceased observations                                        |

Figure C.7.2.1. Site plan showing bat activity including foraging and commuting for the emergence survey carried out on the 7<sup>th</sup> May 2012. Arrows show direction of flight (where known).

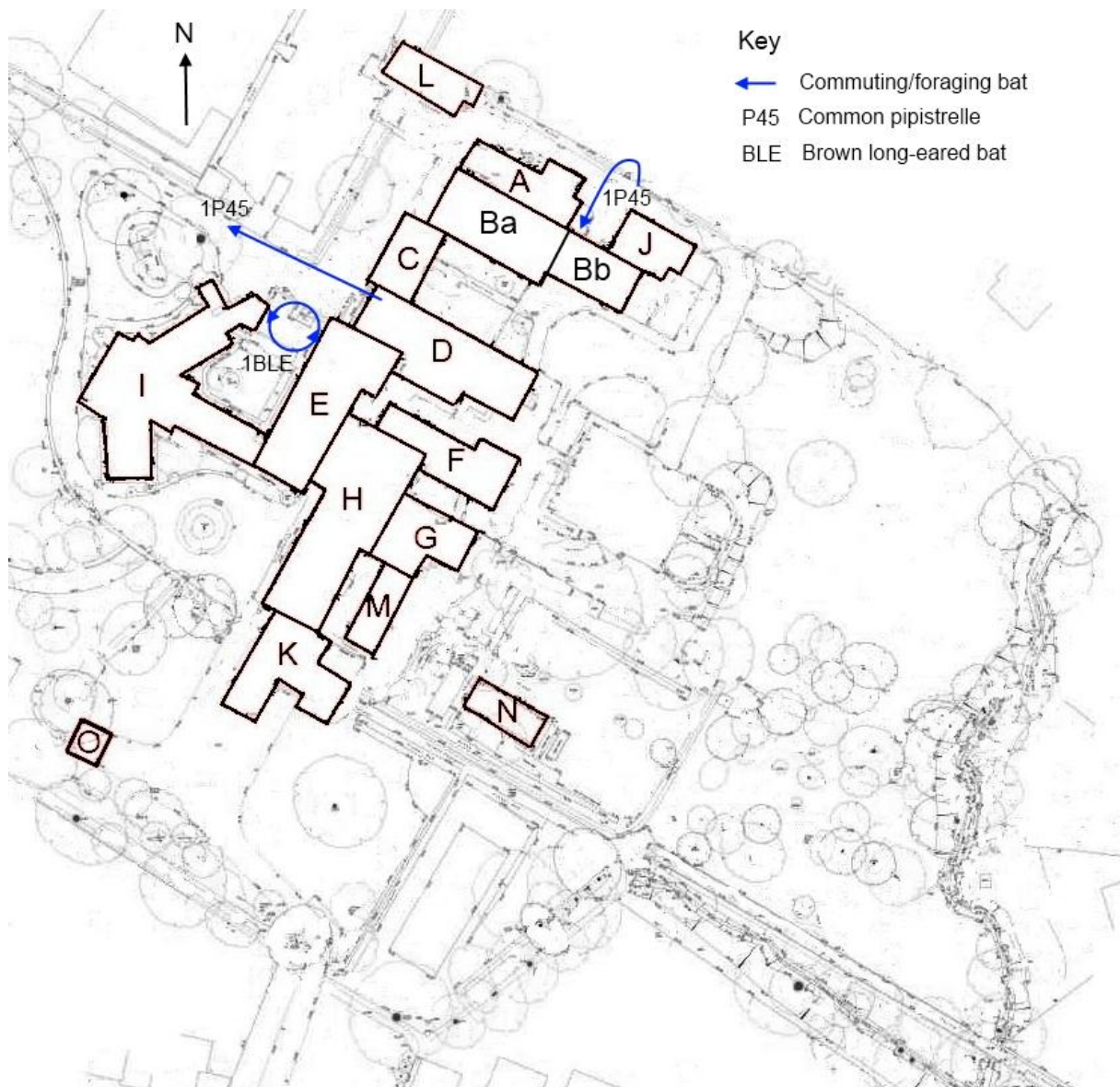


Figure C.7.2.2. Site plan showing bat activity including foraging and commuting for the emergence survey carried out on the 22<sup>nd</sup> May 2012. Arrows show direction of flight (where known).

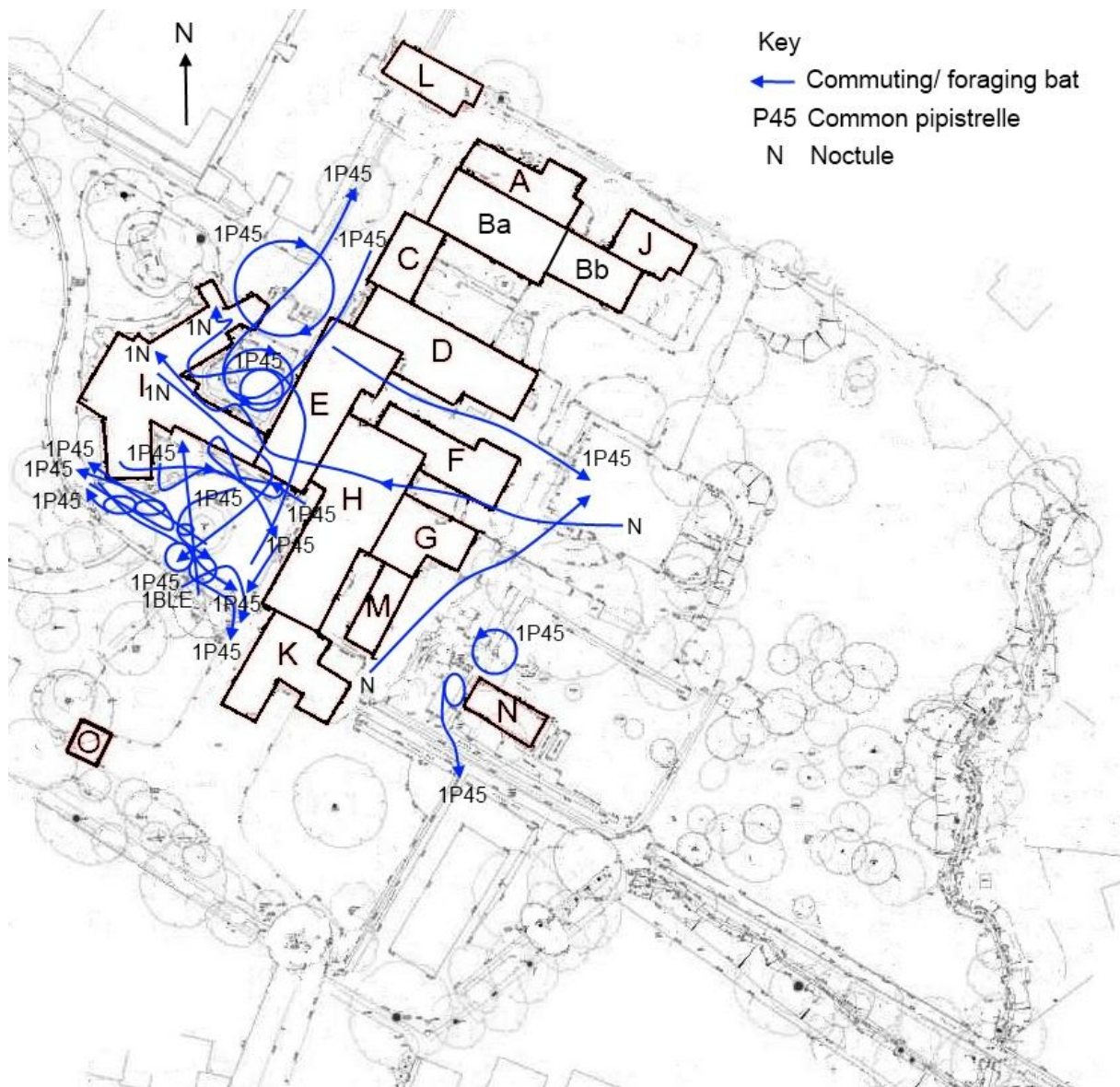


Figure C.7.2.3. Site plan showing bat emergence and bat activity including foraging and commuting for the emergence survey carried out on the 23<sup>rd</sup> May 2012. Arrows show direction of flight (where known).

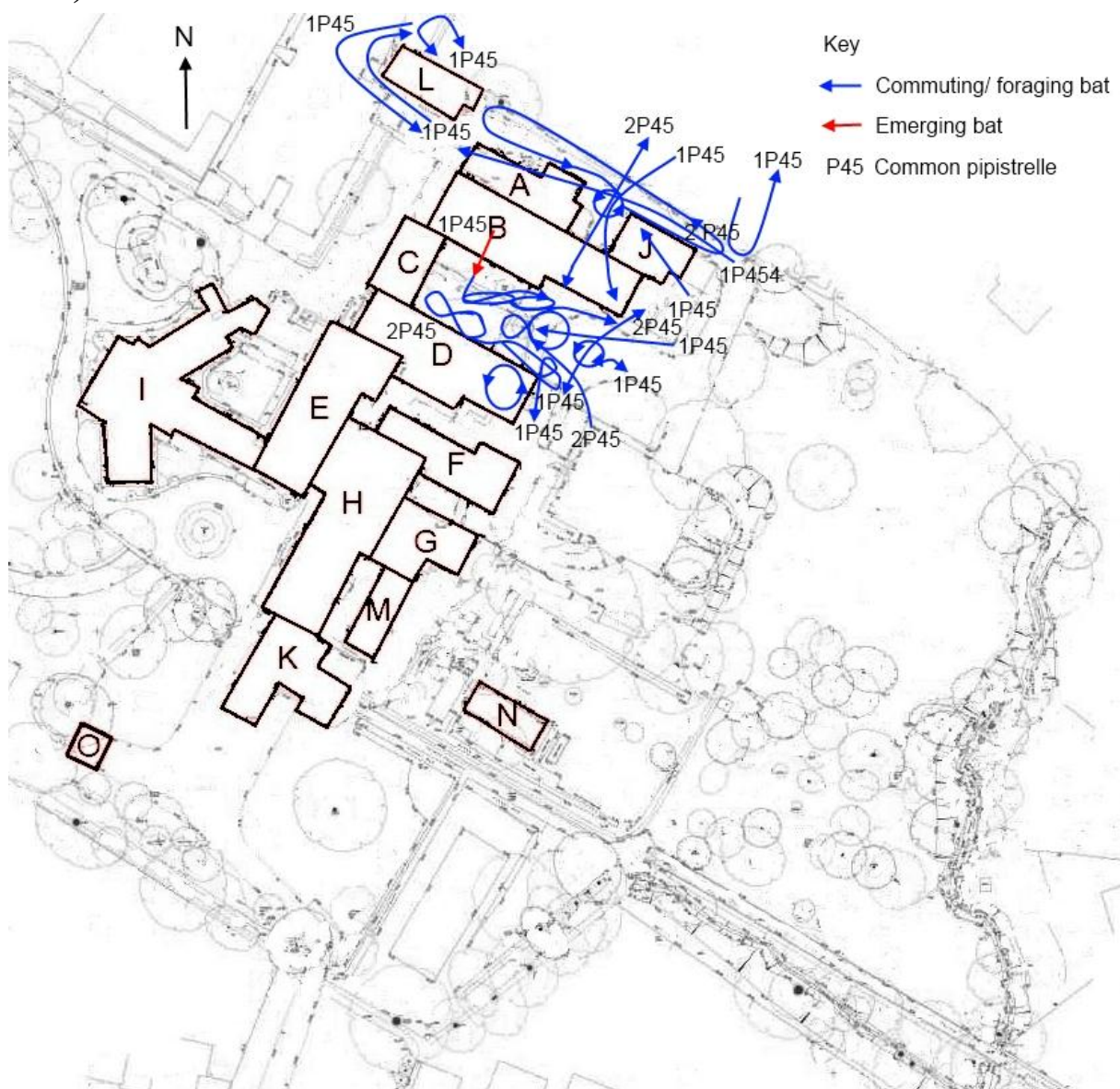


Figure C.7.2.4. Site plan showing bat emergence and bat activity including foraging and commuting for the emergence survey carried out on the 24<sup>th</sup> May 2012. Arrows show direction of flight (where known).

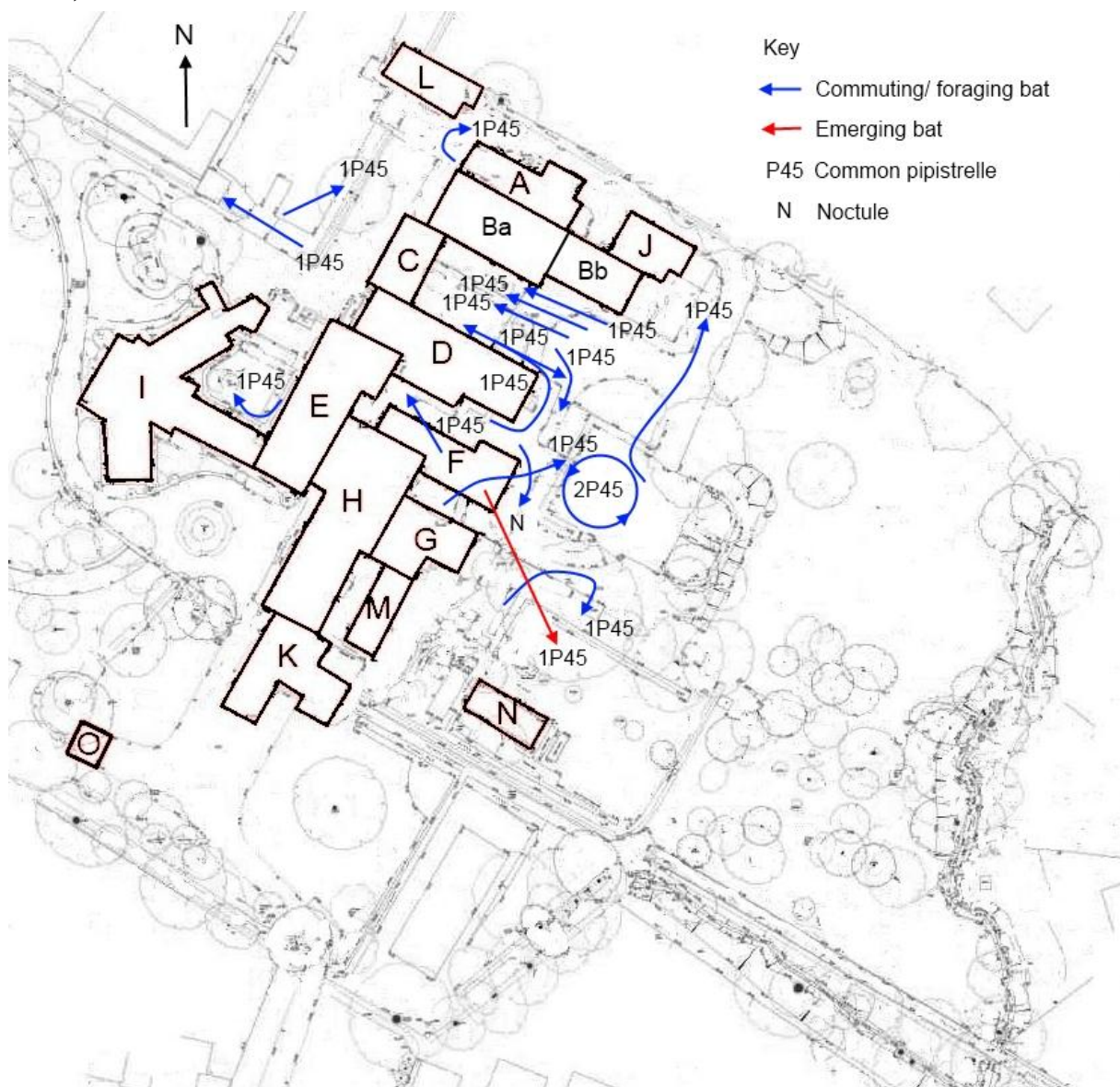


Figure C.7.2.5. Site plan showing bat activity including foraging and commuting for the emergence survey carried out on the 28<sup>th</sup> May 2012. Arrows show direction of flight (where known).

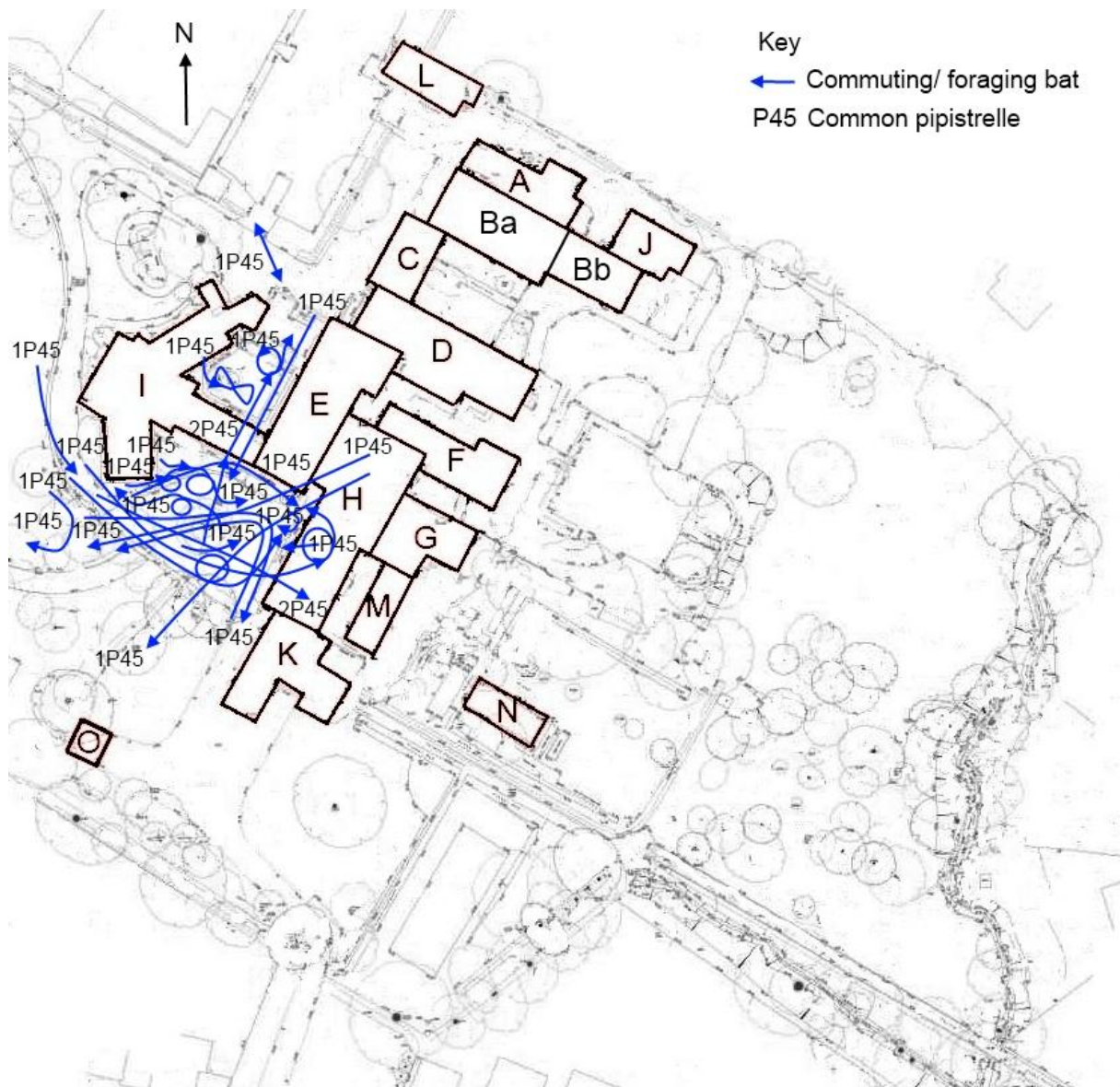


Figure C.7.2.6. Site plan showing bat activity including foraging and commuting for the emergence survey carried out on the 29<sup>th</sup> May 2012. Arrows show direction of flight (where known).

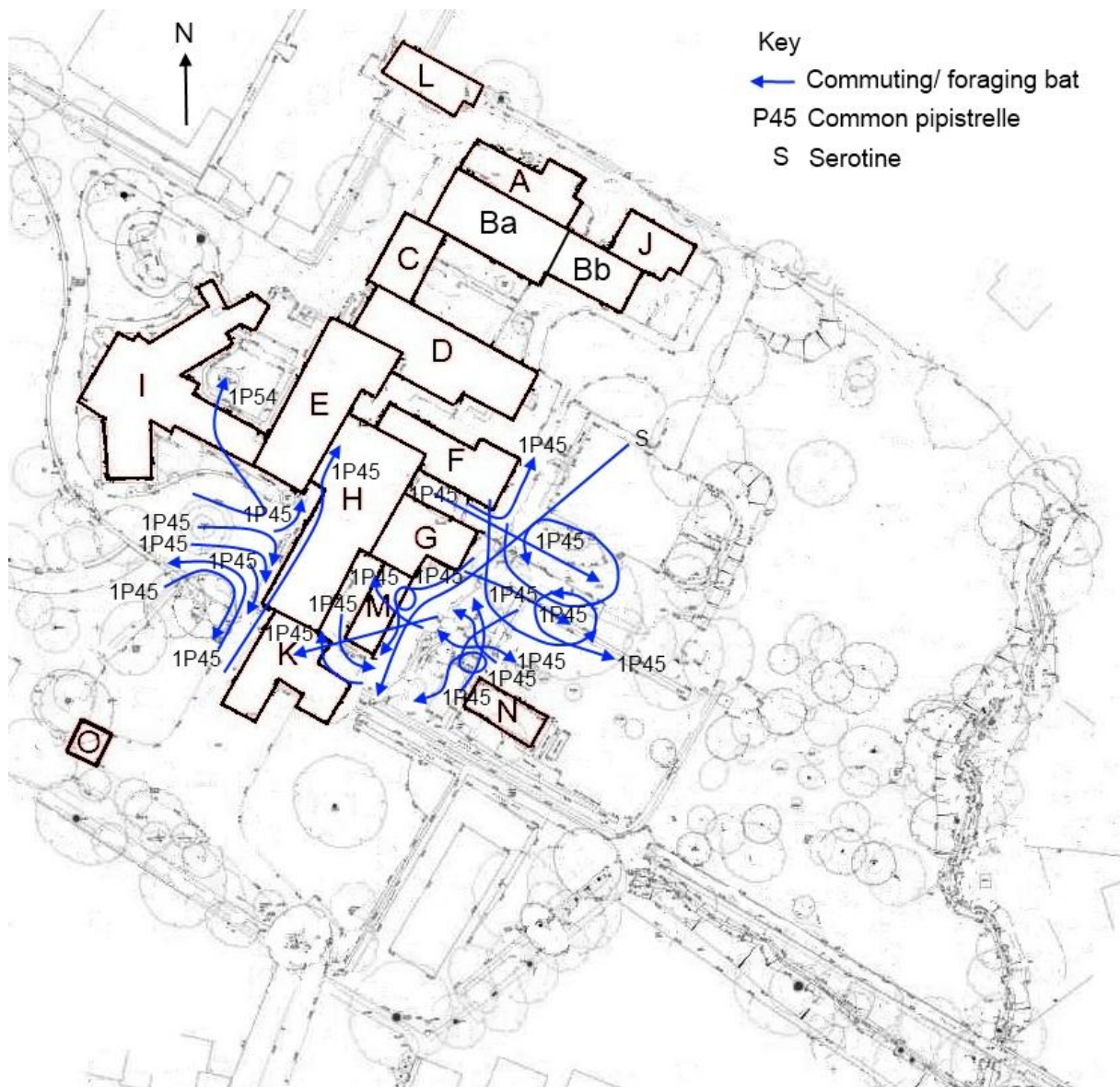


Figure C.7.2.7. Site plan showing bat emergence and bat activity including foraging and commuting for the emergence survey carried out on the 30<sup>th</sup> May 2012. Arrows show direction of flight (where known).

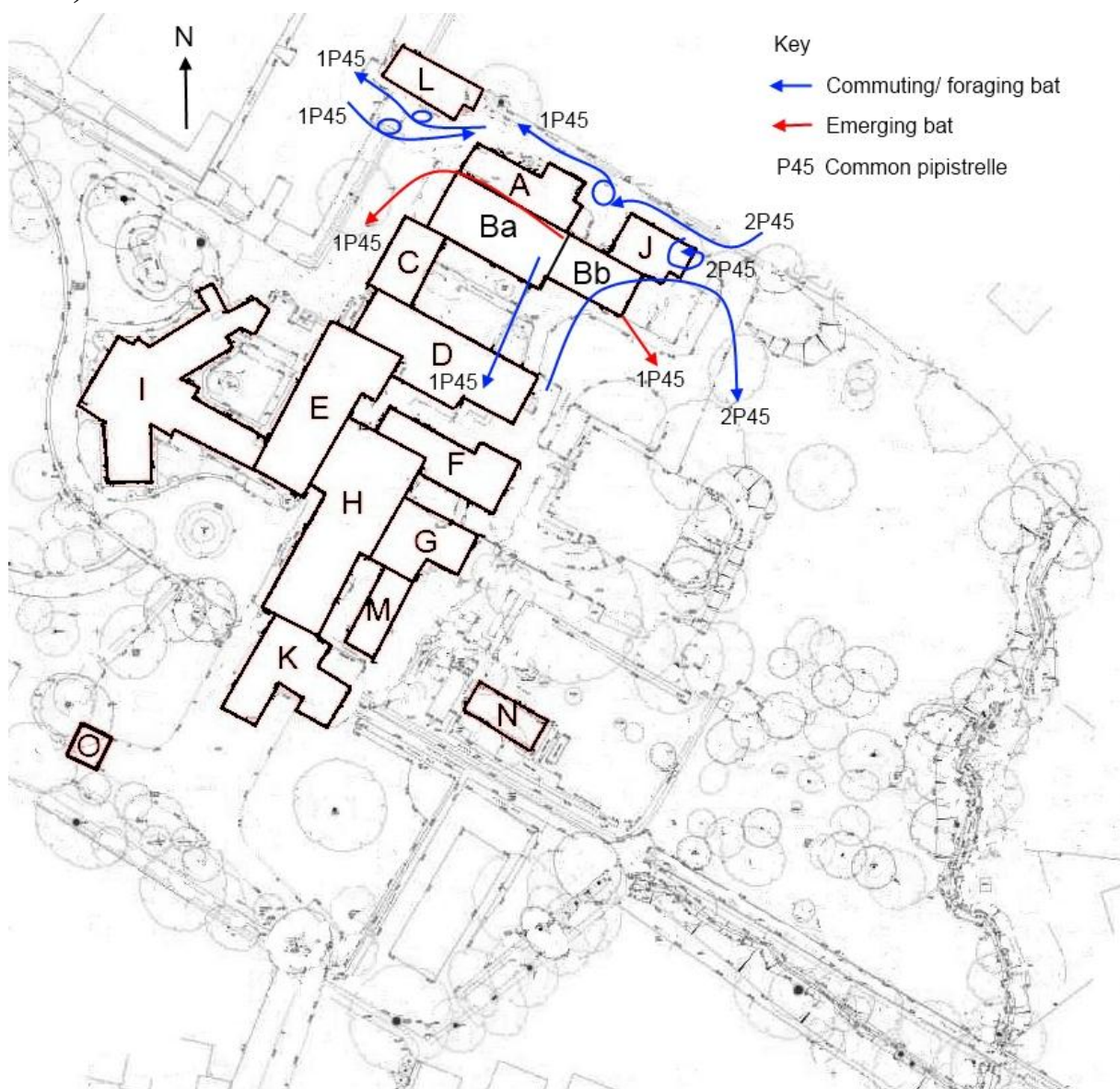


Figure C.7.2.8. Site plan showing bat activity including foraging and commuting for the emergence survey carried out on the 6<sup>th</sup> June 2012. Arrows show direction of flight (where known).

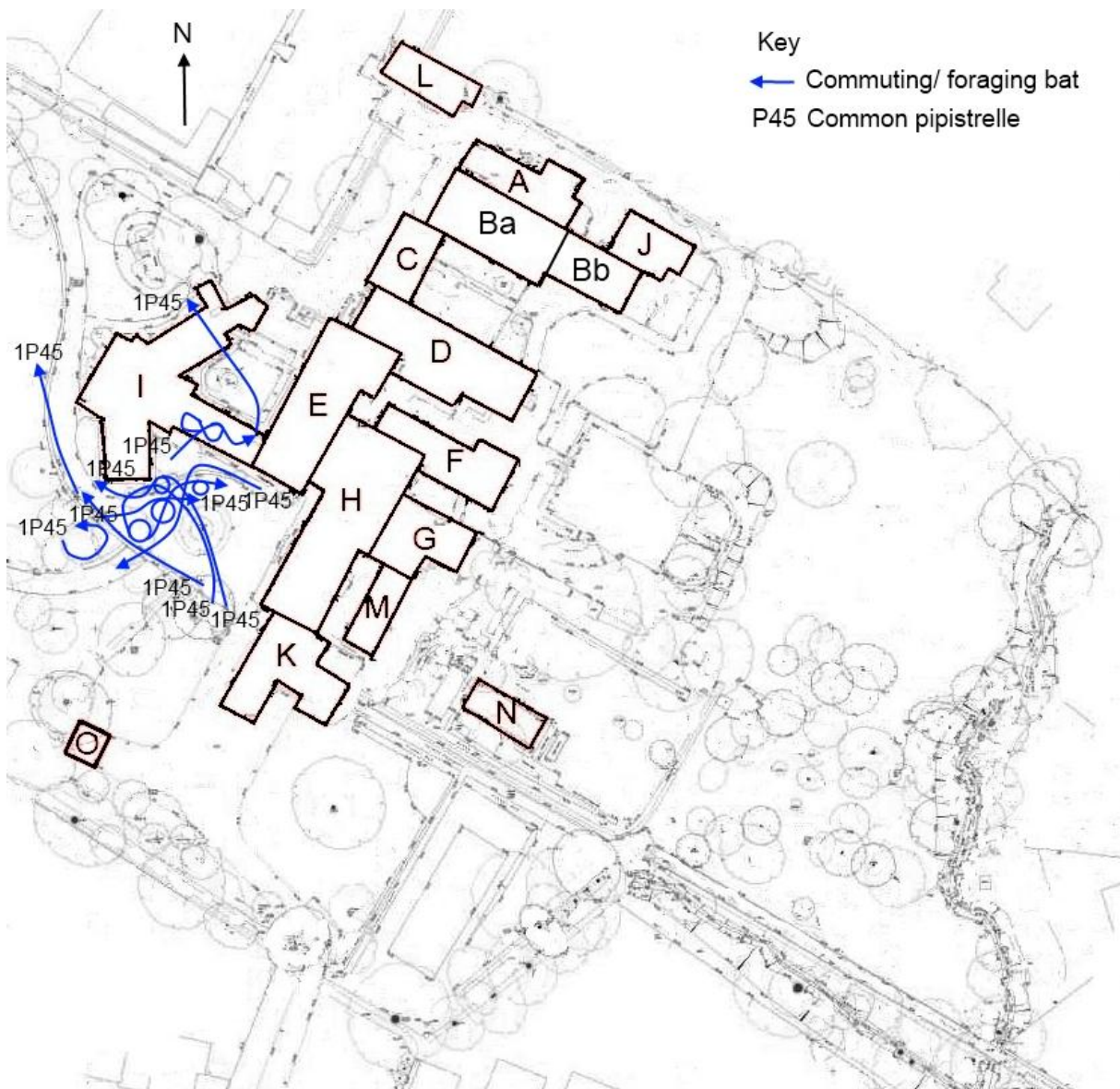


Figure C.7.2.9. Site plan showing bat emergence and bat activity including foraging and commuting for the emergence survey carried out on the 12<sup>th</sup> June 2012. Arrows show direction of flight (where known).

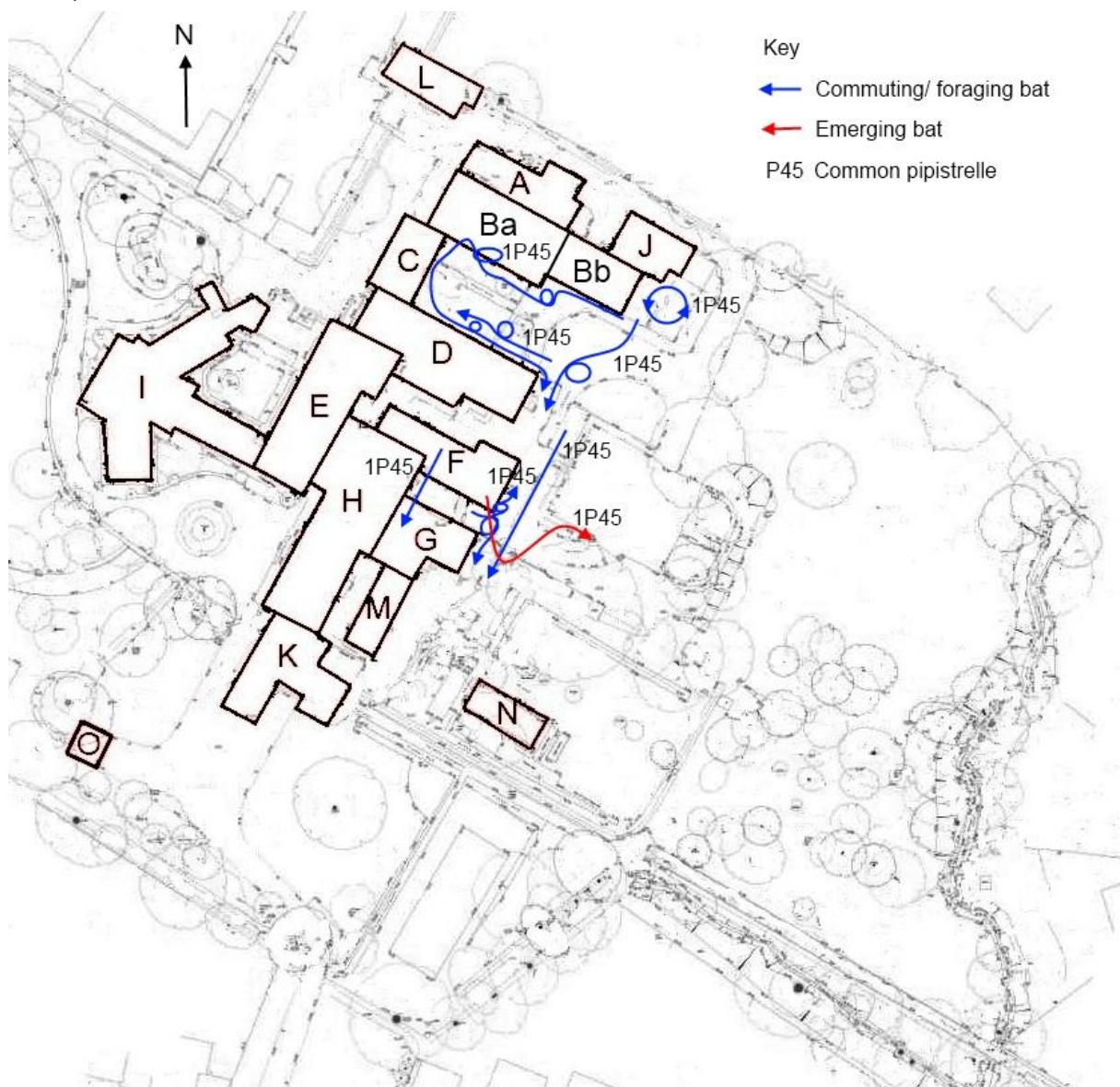


Figure C.7.2.10. Site plan showing bat emergence and bat activity including foraging and commuting for the emergence survey carried out on the 13<sup>th</sup> June 2012. Arrows show direction of flight (where known).

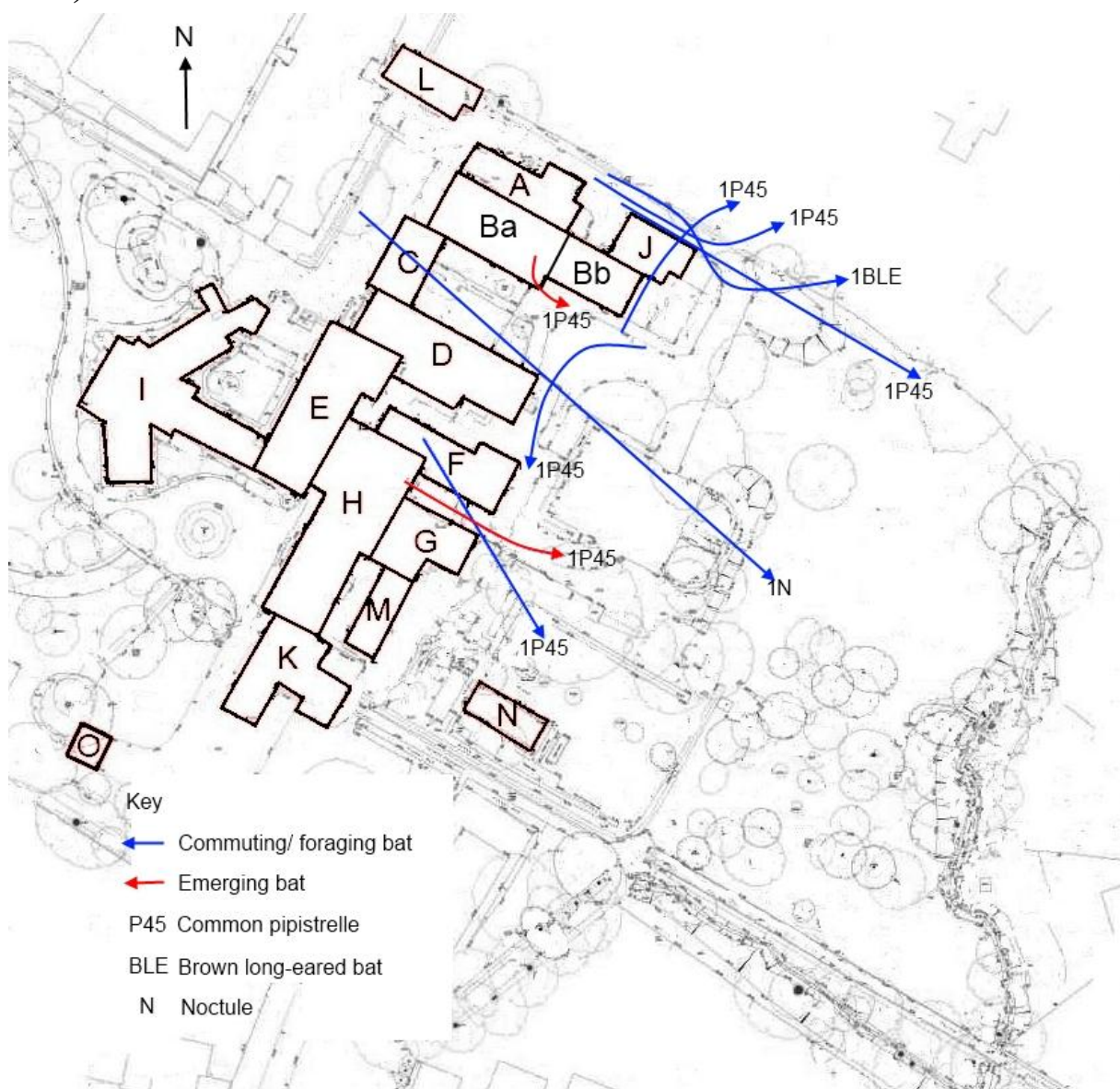


Figure C.7.2.11. Site plan showing bat emergence and bat activity including foraging and commuting for the emergence survey carried out on the 20<sup>th</sup> June 2012. Arrows show direction of flight (where known).

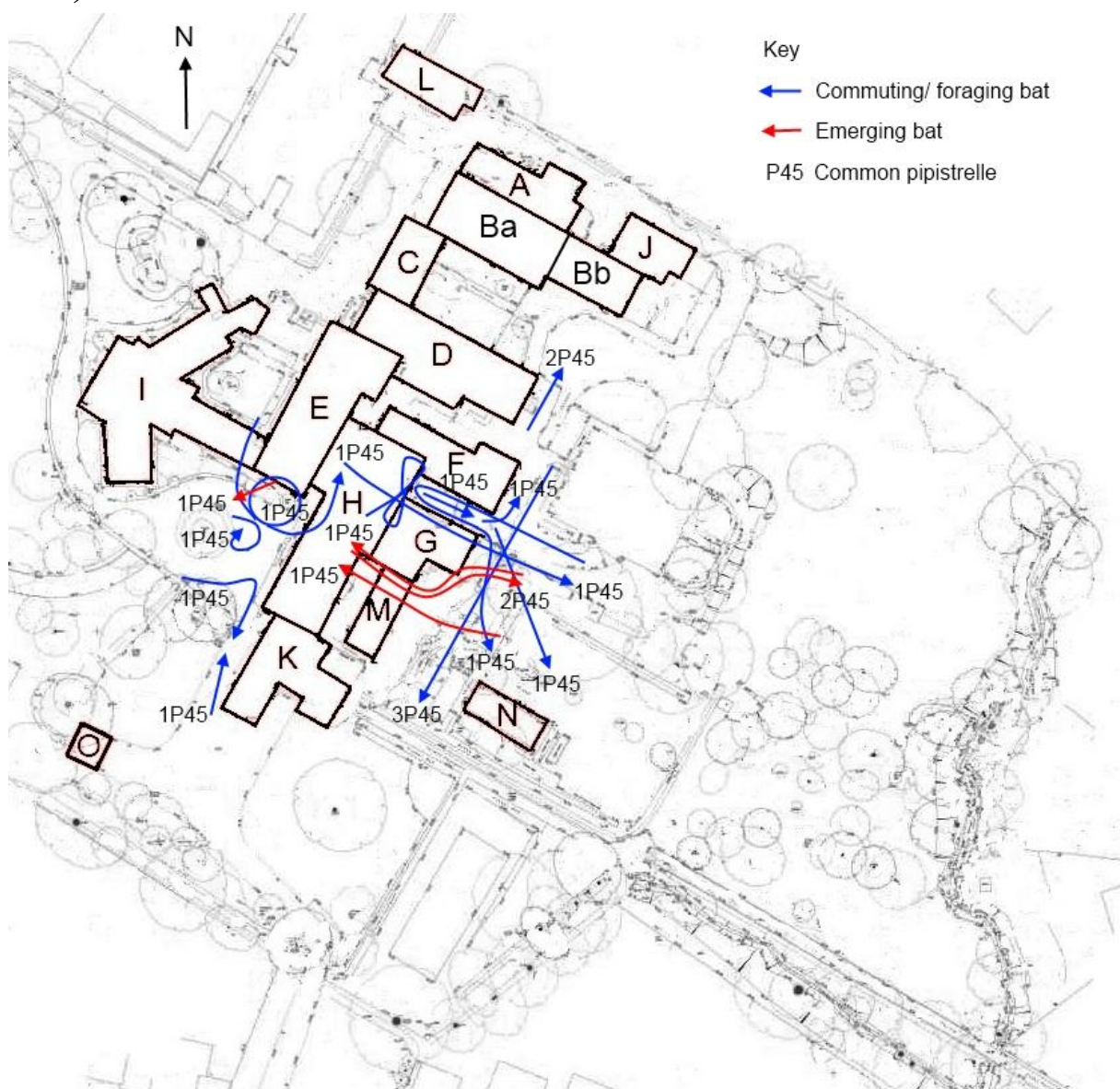


Figure C.7.2.12. Site plan showing bat emergence and bat activity including foraging and commuting for the emergence survey carried out on the 26<sup>th</sup> June 2012. Arrows show direction of flight (where known).

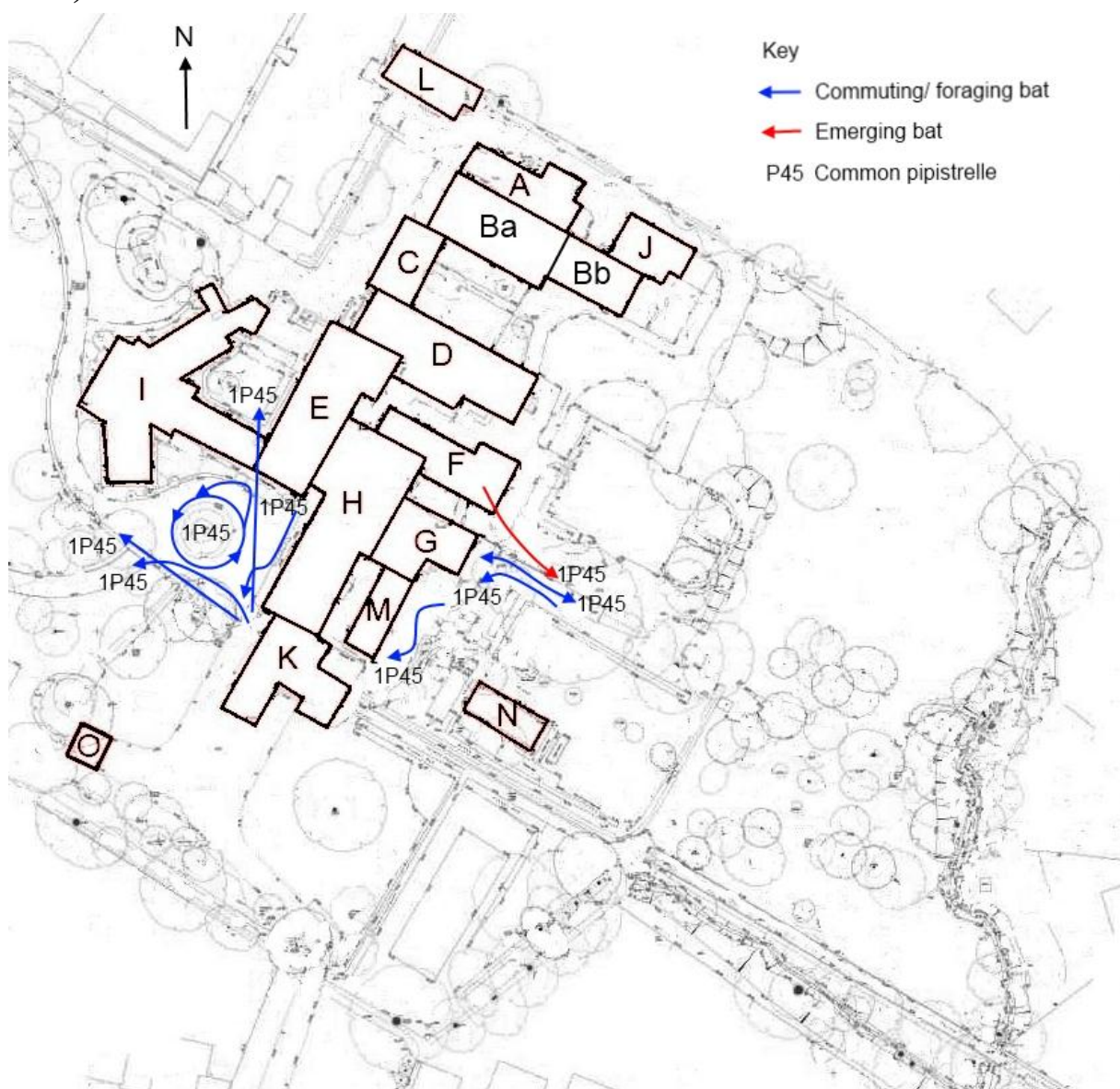
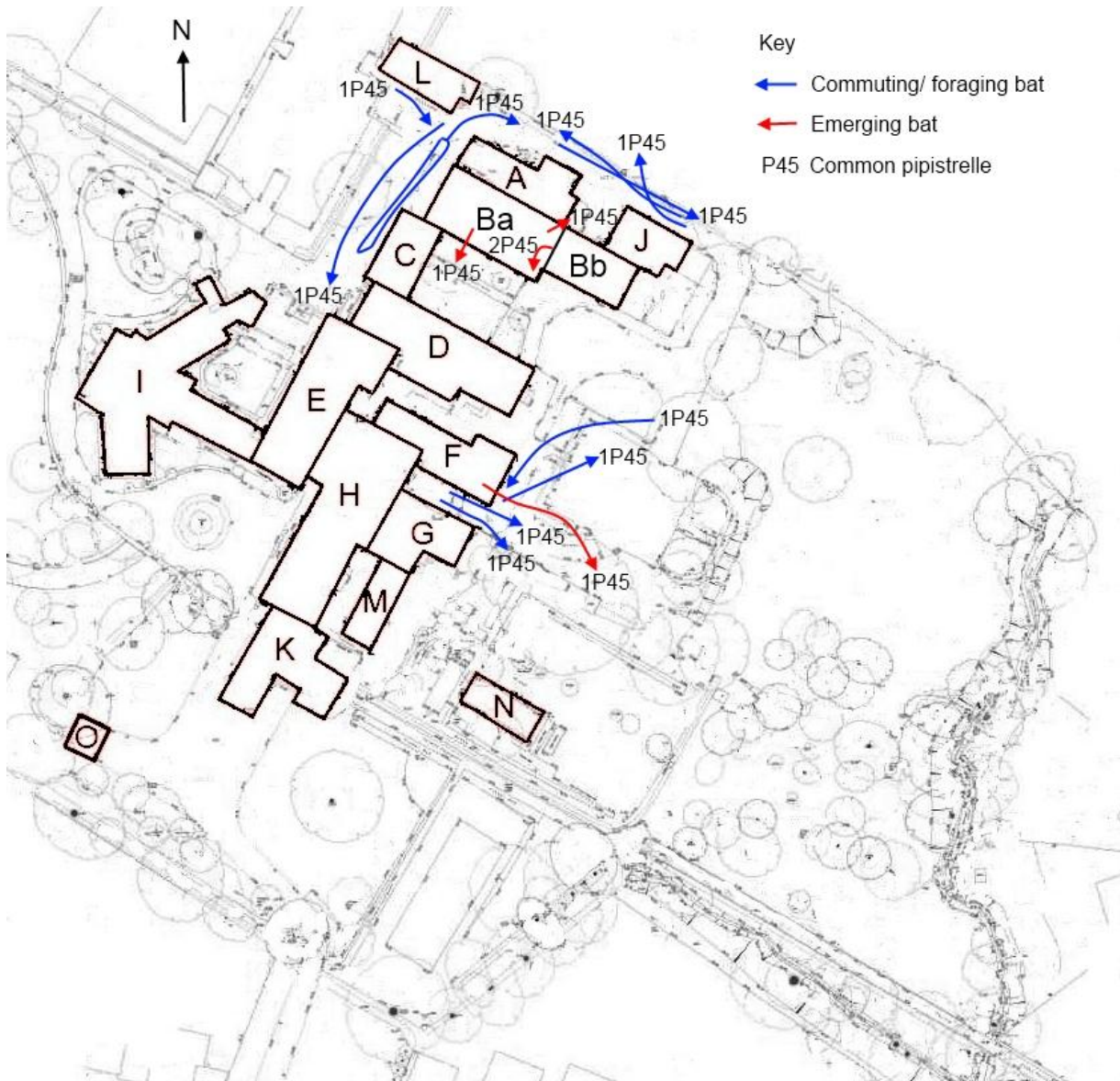


Figure C.7.2.13. Site plan showing bat emergence and bat activity including foraging and commuting for the emergence survey carried out on the 27<sup>th</sup> June 2012. Arrows show direction of flight (where known).



## C.8 Interpretation/ evaluation of survey results

### C.8.1 Habitat suitability

There are large grounds associated with the convent that provide suitable habitat for foraging bats, particularly the grassland, orchard and woodland strip to the east of the buildings. These are adjacent to Hermitage Stream which, together with the trees and bushes along its bank, provides good quality foraging. The woodland strip connects to Hermitage Stream and provides a potential flight-line from the convent buildings down to the stream. Hermitage Stream runs along the eastern boundary of the

site and to the north connects to the high quality foraging habitat of the large woodland of Queen's Inclosure and Park Wood SINC (ancient semi-natural woodland).

Bats follow linear landscape features such as lines of trees, hedges, buildings and waterways in order to commute from their roost sites to their feeding grounds. Likewise they use these features to navigate between feeding areas and alternative roosts such as nearby houses.

### *C.8.2 Bat roost potential*

Buildings A, G and H were considered to have high bat roost potential. This was confirmed by the presence of bat droppings in the roof voids of Buildings G and H and on the floor of Building A.

Buildings B, C, D, E, F, I and J were considered to have moderate bat roost potential and Building K was considered to have low to moderate bat roost potential.

Buildings L, M, N and O were considered to have low to negligible bat roost potential and there was no evidence of bats using these buildings.

The location of potential bat access points are shown in *Figures C.7. 1.1.-C.7.1.23*.

### *C.8.3 Evidence of bats*

Bat droppings were found scattered in the roof voids of Buildings G and H. The greatest concentrations were located under the ridge beams. Their size, shape and texture were consistent with those of long-eared bats.

There were also a few bat droppings scattered in the darker part of Building A (eastern end). These were also consistent with those of long-eared bats.

Emergence surveys recorded a maximum of two common pipistrelles (*Pipistrellus pipistrellus*) emerging from Buildings Ba, Bb, E F & H. They came from the following emergence points.

- Building Ba - two common pipistrelles emerging from under a ridge tile in the centre of the southern side; under a tile on the southern roof; and under a tile on the northern roof.
- Building Bb - two common pipistrelles emerging from the top of the western gable end (two); under a tile on the north side; and under the south-east eave (one).
- Building E - one common pipistrelle emerging from the top of the window on the south gable end.
- Building F - one common pipistrelle emerging from under hip tiles on the south-east corner.
- Building H - two common pipistrelles emerging from by a dormer window on the east side.

This level of use suggests Building Ba, Bb, E, F & H are being used as a summer roost for non-breeding bats.

Based on evidence from bat droppings, Buildings A, G & H are a recent roost for brown long-eared bats. There were also common pipistrelles, serotines and noctules foraging around the vicinity of the buildings.

There was no evidence of bats roosting in Buildings C, D, I, J, K & M.

## **D IMPACT ASSESSMENT IN ABSENCE OF MITIGATION**

### **D.1 Short term impacts: disturbance**

Subject to a successful EPS licence application and suitable weather conditions (night time temperature above 7°C), the works will involve the removal of the roof and hanging tiles, soffits and any other features that could be used by bats (under strict ecological supervision). The demolition of Buildings Ba, Bb & F will result in the loss of a roost used as a summer (non-breeding) roost by small numbers of common pipistrelle. The demolition of Buildings A & G will result in the loss of a summer roost for brown long-eared bats (at least in the recent past). Due to the timing of the works any bats using the buildings as a roost will not be disturbed. The impact on bats, on a local scale, is low.

Buildings E, H, I and part of F will be retained. However, it will be necessary to remove the roofs to inspect the beams and make any necessary repairs. This could result in the disturbance of a summer (non-breeding) roost for small numbers of pipistrelles and the disturbance of a summer roost for brown long-eared bats (at least in the recent past). However, due to the timing of the works any bats using the buildings as a roost will not be disturbed. The impact on bats, on a local scale, is low.

There is no evidence Buildings C, D, I, J, K & M are currently being used by bats.

### **D.2 Long term impacts: modification**

Subject to a successful EPS licence application and suitable weather conditions (night time temperature above 7°C), the works will involve the removal of the roof and hanging tiles, soffits and any other features that could be used by bats (under strict ecological supervision). The demolition of Buildings Ba, Bb & F will result in the loss of a roost used as a summer (non-breeding) roost by small numbers of common pipistrelle. The demolition of Buildings A & G will result in the loss of a summer roost for brown long-eared bats (at least in the recent past). Due to the timing of the works any bats using the buildings as a roost will not be disturbed. The impact on bats, on a local scale, is low.

Buildings E, H, I and part of F will be retained. However, it will be necessary to remove the roofs to inspect the beams and make any necessary repairs. Bat access points into the roof that were identified during the emergence surveys will be retained following reinstatement of the roof. Therefore, any bats using these buildings as a roost will continue to be able to following completion of the works. The impact on bats, on a local scale, is low.

There is no evidence Buildings C, D, I, J, K & M are currently being used by bats.

### **D.3    *Long term impacts: loss***

The demolition of Buildings Ba, Bb, F & H will result in the loss of a roost used as a summer (non-breeding) roost by small numbers of common pipistrelle. The demolition of Buildings A & G will result in the loss of a summer roost for brown long-eared bats (at least in the recent past). The impact on bats, on a local scale, is low.

Buildings E, H, I and part of F will be retained and, following repairs to the roofs, bat access points into the roofs (identified during the emergence surveys) will be reinstated. Therefore, common pipistrelle and brown long-eared bats using these buildings as a roost will continue to be able to do so following completion of the works. The impact on bats, on a local scale, is low.

There is no evidence Buildings C, D, I, J, K & M are currently being used by bats.

### **D.4    *Long term impacts: fragmentation and isolation***

It is not anticipated that the works will result in fragmentation or isolation of common pipistrelle and brown long-eared bat populations as the roosts are small roosts of low numbers of common pipistrelles and brown long-eared bats. There will be no loss of flight-lines associated with the proposal.

In addition, there are other suitable buildings near to the site which may be used by roosting bats (see *Figures C.4.1. and C.4.2.*). These include houses immediately adjacent to the site.

### **D.5    *Post development interference impacts***

The development will not make a difference to human presence in the area as it is in a suburban area with other dwellings nearby.

### **D.6    *Predicted scale of impact***

A non-breeding summer roost for small numbers of common pipistrelle and brown-long-eared bats (at least in the recent past) will be lost. Therefore, the impact level during the development without mitigation is predicted to be low.

## ***E***     ***LAND OWNERSHIP***

### ***E.1***     ***Mitigation site ownership***

Until all bat mitigation has been completed, the new buildings will be owned by Linden Homes.

Following sale, each building will be in private ownership.

## ***F*** ***REFERENCES***

National Biodiversity Network website. [www.nbn.org.uk](http://www.nbn.org.uk). Accessed on the 25<sup>th</sup> April 2012.

Hampshire Ecological Services Ltd (2012). *St Michael's Convent, 354 London Road, Waterloooville, PO7 7TF: Ecological Assessment Report*. Unpublished.

## **G ANNEXES**

### **G.1 *Pre-existing survey reports***

An earlier Ecological Assessment Report for the site was produced by Hampshire Ecological Services Ltd in April 2012 (see *Section F* for reference). All the relevant information contained in this report is included in the relevant sections of this EPS licence.

### **G.2 *Raw survey data***

Other than the data within this document there is no additional emergence data.