

Appendix D Dusk Emergence Bat Survey Report

Oriel

2019 Bat Surveys Report

Moorfields Eye Hospital NHS Foundation Trust,
Moorfields Eye Charity and UCL Institute of
Ophthalmology

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1. Executive Summary

AECOM was commissioned by Moorfields Eye Hospital NHS Foundation Trust (Moorfields), Moorfields Eye Charity and University College London (UCL) Institute of Ophthalmology to carry out bat emergence and re-entry surveys for Potential Roost Features (PRF) identified on buildings at St. Pancras Hospital, London.

St Pancras Hospital comprises 14 buildings; Ash House, Bloomsbury Building, Camley Centre, East Wing, Gate House, Huntley Centre, The Jules Thorn Building, North East Building, North Wing, Residence Building, Rivers Crisis House, South Wing, The Well and the West Wing (hereafter referred to as the 'wider hospital site'). This survey relates to the western part of the wider hospital site (hereafter referred to as 'the Site').

The Site is bounded by Granary Street to the north and the remainder of St. Pancras Hospital to the south. The Regents Canal runs to the east of the site, with mixed-use residential development situated further east of the canal, such as the Gasholder Park and Urbanest. A construction site is also directly adjacent to the eastern boundary, associated with the 101 Camley Street residential development, which will comprise 4-11 storeys for 121 residential units. The Unite Students residential accommodation and King's Cross Residence are adjacent to the western boundary of the Site. The National Grid Reference for the Site is TQ 29689 83612.

An initial external inspection of the Site for bats was undertaken by an AECOM ecologist on 24th April 2019. The ecologist assessed three buildings (referred to B1, B3 and B4) as having low suitability and one building (B2) as having moderate suitability to support roosting bats based on potential access/egress features for bats that were observed. See Appendix A for the location of the buildings.

In order to investigate whether bats are roosting in the buildings, dusk emergence and dawn emergence surveys during May to September 2019 were recommended. The surveys were carried out on the buildings on 8th, 9th, 15th and 16th of July and 3rd September under optimal weather conditions. Surveyors were positioned within view of the elevations with PRFs.

No bats were recorded emerging from or returning to the buildings and very limited bat activity was recorded around the buildings. It is therefore concluded that roosting bats are likely to be absent and no further survey work is recommended for buildings B1, B2 and B4. A Natural England European Protected Species Mitigation Licence will not be required for works associated with the proposed redevelopment of the Site.

Recommendations are provided in Section 6 as a precaution during the works. Section 6 also presents recommendations to incorporate bat boxes in the Proposed Development to mitigate the loss of suitable roosting features for bats. Section 7 identifies measures to enhance the Site to encourage bats and support the local bat populations.

2. Introduction

AECOM was commissioned by Moorfields Eye Hospital NHS Foundation Trust (Moorfields), Moorfields Eye Charity and University College London (UCL) Institute of Ophthalmology to carry out bat emergence and re-entry surveys for Potential Roost Features (PRF) identified on buildings at St. Pancras Hospital, London.

St Pancras Hospital comprises 14 buildings; Ash House, Bloomsbury Building, Camley Centre, East Wing, Gate House, Huntley Centre, The Jules Thorn Building, North East Building, North Wing, Residence Building, Rivers Crisis House, South Wing, The Well and the West Wing (hereafter referred to as the 'wider hospital site'). This survey relates to the western part of the wider hospital site (hereafter referred to as 'the Site').

The Site is bounded by Granary Street to the north and the remainder of St. Pancras Hospital to the south. The Regents Canal runs to the east of the site, with mixed-use residential development situated further east of the canal, such as the Gasholder Park and Urbanest. A construction site is also directly adjacent to the eastern boundary, associated with the 101 Camley Street residential development, which will comprise 4-11 storeys for 121 residential units. The Unite Students residential accommodation and King's Cross Residence are adjacent to the western boundary of the Site. The National Grid Reference for the Site is TQ 29689 83612.

An extended Phase 1 Habitat Survey of the Site was undertaken by AECOM on 24 April 2019. See Appendix A for the Phase 1 Habitat Survey map.

The redevelopment of the Site, to establish a new integrated facility for Moorfields Eye Hospital and the UCL Institute of Ophthalmology, necessitates demolition of all buildings on the St. Pancras Hospital site and the construction of a new facility (referred to as the 'Proposed Development'). The planning application is anticipated to be submitted in 2020.

2.1 Purpose of the Report

The purpose of the dusk emergence and dawn re-entry surveys of potential roost features was to determine the presence or likely absence of bats roosting within one or more of the buildings within the Site. This report summarises the results of the surveys and identifies any requirement for further mitigation (i.e. if works need to be carried out under ecological supervision, or if a European Protected Species (EPS) Mitigation Licence is required for works to proceed).

This report will inform the submission of a planning application for the Proposed Development.

2.2 Location

The Site is situated within an urban area in the London Borough of Camden and is bordered by Granary Street, St. Pancras Way and St. Pancras Gardens, London NW1 0PE (Grid Reference TQ 29689 83612). The Site is surrounded by buildings, over-ground rail lines and roads. However, elements of blue and green infrastructure are located close to the Site that could provide suitable habitat for bats (commuting and foraging). The closest, St. Pancras Gardens, is 75 m to the south of the Site. Similarly, part of London Canals Local Nature Reserve (St Pancras Lock) is located 100 m north-east of the Site. Camley Street Local Nature Reserve, that is known to support bats, is located 230 m south-east of the Site and connects to the canal.

The Site is well connected to valuable green spaces and waterways within the local area.

2.3 Previous Surveys

A Preliminary Ecological Appraisal¹ (PEA) of the Site, which included an external assessment of all of the buildings and trees present on the Site for bats, was undertaken by an AECOM ecologist on 24th April 2019. The external assessment of buildings and trees was conducted in line with the Bat Conservation Trust guidelines² (2016).

The results of the external assessment of the buildings for bats are as follows:

- One building (the Estates and Facilities Building, incorporating the Camley Centre – B2) was assessed as having moderate suitability for supporting roosting bats (see Appendix B for Photographs 6-9);

¹ AECOM (2019). Preliminary Ecological Appraisal. Moorfields Eye Hospital.

² Collins, J. (editor) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines. Bat Conservation Trust

- three buildings (Jules Thorn – B1, Ash House – B3, and the Bloomsbury Building – B4) were assessed as having low suitability for supporting roosting bats (see Appendix B for Photographs 1-5 for B1, Photograph B10 for B3 and Photographs 11-12 for B4); and
- one building (Mortuary and Post Room – B5) was assessed as having negligible suitability for supporting roosting bats (see Appendix B for Photographs 13-15).

No access/egress points for bats were found on trees located within the Site.

Details of the findings of the external assessment for bats can be found in the PEA report (AECOM, May 2019) and photos of the features can be seen in Appendix B of this report.

The records request from Greenspace Information for Greater London (GiGL) (May 2019) obtained for the PEA returned records of occurrences of noctule bat (*Nyctalus noctula*), Daubenton's bat (*Myotis daubentonii*), pipistrelle bats (species of *Pipistrellus*), Nathusius' pipistrelle (*Pipistrellus nathusii*) and soprano pipistrelle (*Pipistrellus pygmaeus*) within 1 km of the Site over the past ten years. The scrub and trees on site provide suitable foraging habitat for bats.

Following the PEA and in accordance with Bat Conservation Trust guidelines, a recommendation was made that presence /absence surveys should be undertaken of the buildings with low (B1, B3 and B4) and moderate suitability (B2). This report presents the results of these recommended surveys.

3. Relevant Legislation

All bat species and their roosts are legally protected in the UK under The Conservation of Habitats & Species Regulations 2017 (Habitats Regulations), which implements the EC Directive 92/43/EEC (the Habitats Directive). In addition, barbastelle (*Barbastella barbastellus*), lesser and greater horseshoe bats (*Rhinolophus hipposideros* and *Rhinolophus ferrumequinum*) and Bechstein's bat (*Myotis bechsteinii*) are listed in Annex II of the Habitats Directive, which requires sites to be designated in member states for their protection. Bats and their roosts are also protected under the Wildlife and Countryside Act 1981 (as amended) (the WCA).

Taken together, the Habitats Regulations and the WCA make it illegal to:

- Deliberately capture or intentionally take a bat;
- Deliberately or intentionally kill or injure a bat;
- Be in possession or control of any live or dead bat or any part of, or anything derived from a bat;
- Damage or destroy a breeding site or resting place of a bat;
- Intentionally or recklessly obstruct access to any place that a bat uses for shelter or protection;
- Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection; and
- Deliberately disturb bats, in particular any disturbance which is likely to (i) impair their ability to survive, breed, reproduce or to rear or nurture their young; or in the case of hibernating or migratory species, to hibernate or migrate; or (ii) to affect significantly the local distribution or abundance of the species to which they belong.

A bat roost is defined as any structure a bat uses for breeding, resting, shelter or protection. It is important to note that since bats tend to re-use the same roost sites, current legal opinion is that a bat roost is protected regardless of whether or not the bats are present at a specific point in time.

Given the above legislation, the potential presence of bats at a site represents a material consideration in the planning process. Even where planning permission is not required, there is still a legal responsibility placed on the developer to ensure that a Natural England licence is obtained to cover any works that have the potential to result in an offence under the above legislation.

Bats are a national priority species and London Biodiversity Action Plan (BAP) species.

4. Methods

4.1 Desk Study

Existing records of bats within 1 km of the Site were obtained from GiGL in May 2019 for the completion of the PEA. This data search provided records of bat species within 1 km of the Site in the past 10 years.

Additionally, to inform this current report, bat records within 1 km of the Site were requested from the London Bat Group on 16th July 2019.

4.2 Bat Emergence and Re-entry Surveys

A team of suitably experienced AECOM ecologists undertook dusk emergences and dawn re-entry surveys of buildings B1, B2, B3 and B4 at the Site during the summer of 2019. These surveys were conducted in line with the Bat Conservation Trust guidelines (2016)². Surveyors were positioned with a view of the elevations where PRFs had been identified in the external assessment for bats. Table 1 comprises a summary of suitability for roosting bats and details of the surveys carried out for each building.

Table 1. Summary of suitability for roosting bats for each building and surveys undertaken

Building	Suitability for roosting bats	Presence / absence survey	Season	Number of surveys	Number of surveyors	Proposed Date	Proposed Survey
Jules Thorn (B1)	Low	Dusk emergence	Summer	1	2	08/07/19	Dusk emergence
Estates and facilities (incorporating the Camley Centre) (B2)	Moderate	Dusk emergence and Dawn re-entry	Summer and Autumn	2	3	15/07/19	Dusk emergence
						03/09/19	Dawn re-entry
Ash House (B3)	Low	Dusk emergence	Summer	1	2	09/07/19	Dusk emergence
Bloomsbury (B4)	Low	Dusk emergence	Summer	1	2	16/07/19	Dusk emergence

The aim of the surveys was to identify bats leaving or returning to a roost that may be present on the buildings. The dusk emergence survey covered the period approximately 15 minutes before sunset to one and a half hours after sunset. The dawn re-entry survey covered the period approximately one and a half hours before sunrise to 15 minutes after sunrise.

During this time period, the ecologists observed potential access and egress points on the buildings. The survey was undertaken using echolocation detectors (BatBox Duet and Batlogger) and Edirol digital recorders to help record and determine activity around the building and identify which species were present.

The time, location, number, species (where possible) and direction of flight were recorded for each bat pass (defined as discrete burst of bat echolocation heard or bat activity seen) encountered during the survey. The echolocation calls were analysed using Bat Sound and Wavesurfer analysis software to verify bat calls, where required, and to help with species identification.

The dawn and dusk surveys were undertaken during favourable weather conditions, as summarised in Table 2.

Table 2. Survey Dates and Weather Conditions

Date of Survey	Dusk (PM) or Dawn (AM)	Sunrise/Sunset	Start / End	Start / End Times	Air Temp (°C)	Wind Speed (Beaufort*)	Cloud Cover (Okta**)	Humidity (%)	Rain During Survey?
08/07/2019	Dusk (PM)	21:16	Start	20:48	18	3	8/8	63	No
			End	22:46	17	2	8/8	65	No
09/07/2019	Dusk (PM)	21:15	Start	20:51	22	1	8/8	52	No
			End	22:45	20	1	8/8	55	No
15/07/2019	Dusk (PM)	21:10	Start	20:30	20	2 (NE)	0/8	54	No
			End	22:40	17	2 (E)	0/8	68	No
16/07/2019	Dusk (PM)	21:09	Start	20:34	23	3 (SW)	0/8	52	No
			End	22:40	21	2 (SW)	0/8	64	No
03/09/2019	Dawn (AM)	06:14	Start	04:41	16	3 (WSW)	5/8	74	No
			End	06:14	16	3 (WSW)	8/8	77	No

*The Beaufort scale is a scale for measuring wind speeds. It is based on observation rather than accurate measurement. There are twelve levels, from 1 for "light air" to 12 for "hurricane force", plus 0 for "no wind".

Okta is a unit of measurement used to describe the amount of cloud cover at any given location. Sky conditions are estimated in terms of how many eighths of the sky are covered in **cloud, ranging from 0 oktas (completely clear sky) through to 8 oktas (completely overcast).

4.3 Survey Limitations

The aim of a desk study is to help characterise the baseline context of a proposed development and provide valuable background information that would not be captured by a single site survey alone. Information obtained during the course of a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for particular habitats or species does not necessarily mean that the habitats or species do not occur in the study area. Likewise, the presence of records for species does not automatically mean that these still occur within the area of interest or are relevant in the context of the Proposed Development.

5. Results

5.1 Desk Study

The desk study did not return any records of bats from within the Site.

The data record request from Greenspace Information for Greater London (GiGL) (May 2019) for the PEA returned records of occurrences of noctule bat (*Nyctalus noctula*), Daubenton's bat (*Myotis daubentonii*), pipistrelle bats (species of *Pipistrellus*), Nathusius' pipistrelle (*Pipistrellus nathusii*) and soprano pipistrelle (*Pipistrellus pygmaeus*) within 1 km of the Site over the last ten years.

A total of fifty-six bat records were returned from the London Bat Group since 1985. Among these records, three were roosts. The closest roost is 600 m from the Site.

Sixteen field records were returned from a single location within 200 m of the Site. Among the bat species recorded were common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), and unknown species of *Pipistrellus*. Good foraging habitat was present at St Pancras Gardens, to the south of the Site, as such these records could be from St Pancras Gardens.

5.2 Emergence Survey

Surveys were undertaken by AECOM ecologists and the surveyors had a good view of those features with potential to support roosting bats.

A summary of the dusk emergence and dawn re-entry surveys is presented below with the full results provided in Appendix C.

5.2.1 Jules Thorn (B1)

Survey 1 – Dusk emergence – 08/07/2019

No bats emerged from the building during the dusk emergence survey.

Four passes of common pipistrelle were recorded by one surveyor during the survey. The first two passes were at sunset. The bats were seen flying north from the Psychodynamic Building or St Pancras Gardens. It is likely that it was an emergence from the gardens, and outside of the boundary of the Site. The two other records were common pipistrelle foraging briefly around one hour after sunset.

5.2.2 Estates and facilities (B2)

Survey 1 – Dusk Emergence – 15/07/2019

No bats emerged from the building during the dusk emergence survey.

Three brief passes of common pipistrelle were recorded during the survey. All were more than one hour after sunset.

Survey 2 – Dawn Re-entry – 03/09/2019

No bats were recorded entering the building during the dawn re-entry survey.

Nine passes of soprano pipistrelle were recorded by two surveyors from one hour before sunrise to 10 minutes to sunrise.

5.2.3 Ash House (B3)

Survey 1 – Dusk Emergence – 09/07/2019

No bats emerged from the building during the dusk emergence survey.

Seven common pipistrelle bats were recorded during the survey. The first pass was recorded 18 minutes after sunset commuting next to the building from west to east.

5.2.4 Bloomsbury (B4)

Survey 1 – Dusk Emergence – 16/07/2019

No bats emerged from the building during the dusk emergence survey.

Three common pipistrelle bats and one noctule were recorded during the survey commuting within the Site. The noctule bat was recorded one hour after sunset and the first common pipistrelle was recorded 28 minutes after sunset.

6. Discussion and Recommendations

Bats are protected under the Habitats Regulations and the WCA (see section 3 above).

The initial external bat roost suitability inspection and subsequent dusk emergence and dawn re-entry surveys did not record bats or signs of bats roosting within any of the four buildings surveyed (Jules Thorn – B1, Estates and Facilities Building – B2, Ash House – B3, and the Bloomsbury Building – B4).

No further survey work is recommended for these buildings. Although no signs of bats were recorded, the buildings continue to have suitable features for roosting bats. Common pipistrelle, soprano pipistrelle and noctule bats were observed and /or recorded commuting in the vicinity of the buildings. Furthermore, the Site is located close to St Pancras Gardens (75 m to the south of the Site), Regents Canal (100 m north-east) and Camley Street Local Nature Reserve (230 m south-east), which provide good foraging and commuting habitat for bats. Therefore, the following precautionary measures are recommended before works commence:

- Prior to works commencing, the contractors should be made aware that the buildings have potential to support roosting bats via a toolbox talk;
- Works to the features with potential to be egress and access points for bats must be carried out under the supervision of a suitably qualified ecologist.

In the event that a bat or signs of bats are found during the development, works should cease immediately, and a suitably qualified ecologist should be contacted for advice. A licence from Natural England may be required before works can continue.

The provision of bat boxes to mitigate the loss of potential roosting features would be in accordance with the Camden Local Plan and Camden Biodiversity Action Plan. It is recommended that at least one bat box per each of the three buildings with low suitability to support roosting bat and at least two bat boxes for the building with moderate suitability to support roosting bats (B2) are installed within the Proposed Development. This should be a combination of pipistrelle and noctule bat boxes: three boxes for pipistrelle bats and two boxes for noctule bats. Ideally, they would be placed at least 5 m above the ground facing between south-east and south-west. A clear flight path to the entrance of the boxes should also be maintained.

There are a number of types of bat boxes which are suitable for pipistrelle bats and other small bat species (e.g. Schwegler 1FF Bat Box, 2F Bat Box, N27 Bat Box). The box can be mounted onto the walls of the Proposed Development.

2FN Schwegler Bat Box is recommended for noctule bats and it should be mounted on trees as noctule bats roost in trees.

7. Opportunities for Enhancement

In pursuance of the objective within the National Planning Policy Framework³ (NPPF) of providing net gains in biodiversity where possible, consideration should be given to the scope for ecological enhancement as part of the Proposed Development. There is an opportunity for the Proposed Development to include planting to encourage bats and support the local bat populations. Suggestions include:

- Tree planting and choosing species that are good for moths and other evening flying insects;
- Shrub planting including in planters, again choosing species that are good for moths and other evening flying insects and shrub species that flower in the late autumn (e.g. *Sarcococca*);
- Creating a green wall and incorporating evening blooming honeysuckles;
- Including evening blooming plants in ornamental borders, e.g. evening primroses; and
- Creating a living roof with species of planting targeted at food plants for moths and other prey for bats.

3

Ministry of Housing, Communities and Local Government (2019). National Planning Policy Framework

8. Conclusions

Three buildings (Jules Thorn – B1, Estates and Facilities Building – B2 and the Bloomsbury Building – B4) within the Site were identified during the extended Phase 1 Habitat survey as having low potential for supporting bats and one building (Ash House – B3) was identified as having moderate (B2) potential for supporting bats. In accordance with the Bat Conservation Trust guidelines, presence /absence surveys were recommended. Emergence and re-entry bat surveys were undertaken between July and September 2019 for these buildings.

No bats were recorded emerging from or returning to the buildings and very limited bat activity was recorded around the buildings. It is therefore concluded that roosting bats are likely to be absent and no further survey work is recommended for buildings B1, B2, B3 and B4. A Natural England European Protected Species Mitigation Licence will not be required for the works associated with the Proposed Development.

A toolbox talk, raising bat awareness to the contractors prior to demolition works, and ecological supervision during works on potential bat roosting features are recommended as a precaution during the works.

Three boxes for pipistrelle bats and two boxes for noctule bats are recommended to be installed within the Proposed Development to mitigate the loss of potential roosting features within the Site. Opportunities for enhancement include planting certain species which are evening blooming and are good for moths and other evening flying insects to encourage bats and support the local bat populations.

Appendix A Phase 1 Habitat Survey



Appendix B Photographs of the Potential Roost Features on Buildings



Photo 1. Gap under wooden cladding on southern elevation of Jules Thorn (B1).



Photo 2. Ivy growing on south eastern corner of Jules Thorn (B1).



Photo 3. Wooden garden shed in garden of Jules Thorn (B1).



Photo 4. Brick outbuilding east of Jules Thorn (B1) fence.



Photo 5. Roof void of Jules Thorn (B1).



Photo 6. Gap in fascia at Camley Centre (B2).



Photo 7. Airing door leading to roof void at the Camley Centre (B2).



Photo 8. Elevated roof vent on the Camley Centre (B2).



Photo 9. Temporary building attached to the Camley Centre (B2).



Photo 10. Eastern elevation of Ash House (B3).



Photo 11. Southern elevation of the Bloomsbury Building (B4).



Photo 12. Gaps under the soffit at the northern elevation of the Bloomsbury Building (B4).



Photo 13. Flat roof on the Mortuary building (B5).



Photo 14. Switch room in the Mortuary building (B5).



Photo 15. Generator room in the Mortuary building (B5).

Appendix C Survey Results

Table 3. Building emergence/return survey 08/07/2019

Project Name	Oriel		Surveyors		CF & MC
Survey Location	Jules Thorn (B1). (CF - Southern side) (MC - NW side)		Weather description		Mild, cloudy, gentle breeze, overcast
Date	08/07/2019		Weather previous evening		Cool, overcast
Start	20:48		Finish		22:46
Sunset	21:16		Bat detector		Batbox duet & ediol (CF), Batlogger (MC)
Time	Species	No. of bats	Emerge (Y/N)	Recording (Y/N)	Description
21:16	Common pipistrelle	2	N	N	2 bats seen and heard flying North from aerodynamic building or St Pancras Gardens. Likely emergence (CF)
22:04	Common pipistrelle	1	N	Y	HNS, brief foraging, faint (CF)
22:15	Common pipistrelle	1	N	Y	HNS, brief foraging, faint (CF)
MC	None	-	-	-	-

Table 4. Building emergence/return 09/07/2019

Project Name	Oriel		Surveyors		CF & MC
Survey Location	Ash House (B3). (CF - Southern side) (MC - North corner)		Weather description		Mild, cool, overcast, calm, cloudy
Date	09/07/2019		Weather previous evening		Cool, overcast,
Start	20:51		Finish		22:45
Sunset	21:15		Bat detector		Batbox duet & ediol (CF), Batlogger (MC)
Time	Species	No. of bats	Emerge (Y/N)	Recording (Y/N)	Description
21:32	Common pipistrelle	1	N	Y	HNS, brief (CF)
22:47	Common pipistrelle	1	N	Y	Heard and seen foraging to the South (CF)
22:06	Common pipistrelle	1	N	Y	Heard not seen, quick pass (CF)
22:14	Common pipistrelle	1	N	Y	Heard not seen, brief pass (CF)
22:42	Common pipistrelle	1	N	Y	HNS, quick pass (CF)
21:33	Common pipistrelle	1	N	Y	Commuting next to the building, West to East (MC)
21:40	Common pipistrelle	1	N	Y	Commuting next to the building, West to East (MC)

Table 5. Building emergence/return survey 15/07/2019

Project Name	Oriel		Surveyors		CF, MC & JC
Survey Location	Estates and Facilities (B2). (MC - South-East side) (CF- East side) (JC - Western side)		Weather description		Clear, no cloud, sunny, gentle breeze, warm, mild,
Date	15/07/2019		Weather previous evening		Clear, warm, mild
Start	20:30		Finish		22:40
Sunset	21:10		Bat detector		Batbox duet & ediol (CF), Batlogger (MC), Batlogger (JC)
Time	Species	No. of bats	Emerge (Y/N)	Recording (Y/N)	Description
22:46	Common pipistrelle	1	N	Y	HNS, brief foraging (MC)
22:18	Common pipistrelle	2	N	Y	HNS, brief passes, (CF)
JC	None	-	-	-	-

Table 6. Building emergence/return survey 16/07/2019

Project Name	Oriel		Surveyors		MC & JC
Survey Location	Bloomsbury (B4). (MC - Southern side) (JC - Northern side)		Weather description		Clear, no cloud, sunny, gentle breeze, warm, mild,
Date	16/07/2019		Weather previous evening		Clear, warm, mild
Start	20:34		Finish		22:40
Sunset	21:09		Bat detector		Batlogger (MC), Batlogger (JC)
Time	Species	No. of bats	Emerge (Y/N)	Recording (Y/N)	Description
21:37	Common pipistrelle	1	N	Y	Heard and seen, brief foraging W to E (MC)
21:44	Common pipistrelle	1	N	Y	Heard and seen, brief foraging E to W (MC)
21:54	Common pipistrelle	1	N	Y	Heard and seen, brief foraging W to E (MC)
22:13	Noctule	1	N	Y	Commuting (JC)

Table 7. Building emergence re-entry survey 03/09/2019

Project Name	Oriol		Surveyors		CF, MC & JC
Survey Location	Estates and Facilities (B2). (MC - South-East side) (CF- East side) (JC - Western side)		Weather description		Mostly cloudy, warm, mild
Date	3/09/2019		Weather previous evening		Mostly cloudy, warm, mild
Start	04:41		Finish		06:14
Sunset	06:14		Bat detector		Batbox duet & ediolol (CF), Batlogger (MC), Batlogger (JC)
Time	Species	No. of bats	Emerge (Y/N)	Recording (Y/N)	Description
5:12	Soprano pipistrelle	1	N	Y	HNS, brief pass (MC)
5:33	Soprano pipistrelle	1	N	Y	HNS (MC)
5:35	Soprano pipistrelle	1	N	Y	HNS (MC)
5:42	Soprano pipistrelle	1	N	Y	Brief pass, heard and seen (North to South), (MC)
5:50	Soprano pipistrelle	1	N	Y	Brief pass, heard and seen (N to S), (MC)
6:05	Soprano pipistrelle	1	N	Y	Brief pass, HNS (MC)
5:20	Common pipistrelle	1	N	Y	HNS (CF)
5:32	Common pipistrelle	1	N	Y	HNS (CF)
6:02	Common pipistrelle	1	N	Y	HNS (CF)

